



Economics of Salt Production in India: an Analysis

KEYWORDS

God's Gift, Relative shares, production and productivity, exports and imports

Dr. B. NAGARAJA

PhD, Associate Professor, Department of Economics, Sri Venkateswara University, TIRUPATI- 517502

ABSTRACT

Though salt was considered as "God's gift" in ancient times and used for diplomatic purposes, in modern days it has more than 14,000 uses. India occupies the third place in the production of salt by producing 8.9 per cent of the total world production being cultivated in 1.45 lakh hectares. Gujarat, Rajasthan and Tamilnadu are the top-3 states in which the yield and labour productivity were found high among the salt producing states in India. In 2013-14, 59.61 lakh MT of salt was exported which accounts for Rs.844.4 crore.

In spite of these merits, much research was not directed towards the analysis of labour utilisation, which is declining for the past 5 years, yield of the cultivated area and productivity of labour. The research so far conducted particularly threw light on the socio-economic conditions of the salt workers, the environment in which they had been working, the health problems they are prone to and designing the programmes for empowering the women salt workers. The authors have not paid sufficient attention to examine the trends in production, consumption, distribution and exports and imports of salt. Productivity analysis of salt industry also did not receive much attention of the researchers. Hence, the present paper makes a modest attempt to analyse all these trends and to provide an integrated view of the salt industry in India. The paper is concluded by offering some suggestions to improve the yield and productivity of labourers engaged in salt industry.

Introduction:

Salt (Na Cl) is the oldest commodities used in the man's food and occupies valuable position in the history of human civilization. The history of the world civilization explains the economic significance of salt. Salt was regarded as "God's gift" in ancient days. Homer described it as a "Divine Commodity" and for Plato and Pithagarous, it was a "God's favourite Commodity". There was a time when people valued salt as much as rare minerals and oils. According to Marco Polo's travelogues, cakes of salt were being used as money and because of its extreme scarcity salt was measured equal to gold in Sahara and Sudan. Salt during the ancient times was used as an important commodity entering into international trade all over the world and it was used as a weapon to conquer enemies by cutting its supply.

In India, the historical records speak about the dominance of salt as a medium of exchange and much before the invasion of Alexander, the Great, around 327 BC, salt was extracted from the salt mines of the Northern India and transported to different parts of the country. In 9th Century AD. many governments were exercising monopoly in the manufacture of salt as salt was one of the chief sources of revenue and made salt a commodity beyond the reach of the poor people. Though it was a luxury commodity for the poor people in India, Mahatma Gandhi (12-03-1930) broke the salt policy of the British Government by a protest declaring that "with this, I am weakening the foundation of British empire". After independence, 'salt' became a central subject, headed by the Salt Commissioner of India. As the time advanced, uses of salt increased and the method of producing salt has also undergone significant changes. In modern times salt has about 14000 known uses from food to industry to de-icing.

Literature Review:

Though salt as a commodity has become highly important, much literature is not available on the production, distribution and productivity of salt industry. Research has been

carried out to analyse the conditions of workers, their hardships, social security and competition in the employment. Studies were also conducted on examining the health problems of salt workers and their morbidity pattern. Efforts were also made to examine the empowerment issues of women salt workers and attempts were made to focus on the women who are toiling in some most of the marginalised conditions. Though this type of research on labour and gender-specific issues are important, research papers that present an integrated view of the salt industry are also important. Keeping this research gap in view, the present paper makes an attempt to present a micro-integrated view of the salt industry in India.

Methodology:

The present paper is of analytical in nature, which relies exclusively on secondary data. The data collected and processed relates to the recent three years i.e. 2011-12, 2012-13 and 2013-14 and the performance of the salt industry has been analysed with special reference to India. The major objectives of the study are:

- To provide a brief history of salt and the diplomatic role played in ancient kingdoms
- To assess the relative shares of the countries around the globe in the production of salt.
- To deal with the cultivation, sector-wise production and distribution of salt in India
- To identify the states of India that are dominant of salt production and to estimate the average yield and average production per worker in salt industry, and
- To present the trends in quantity of salt exported from and imported into India

Discussion and Results:

Presently about 110 countries are actively engaged in the production of salt and India occupies a place of pride as shown in Table.1

The data in Table. 1. presents the relative shares of top-8 countries which account for 68.0 per cent of the total salt production in the world. The estimations representing two important sources of data –British Geological survey and US Geological Survey – show that India occupies the third place after China and United States with 8.86 per cent and 6.56 per cent of the total production of salt around the globe.

It was estimated that the production of salt reaches to 324 million metric tons in 2018 400 million tonnes by 2020 and China would continue to represent the leading salt market while India is projected to rank as the world's fastest growing salt consumer. (Roskill, 2014).

Table. 1. Relative Shares of Top-8 Salt Producing Countries -2012

S. No	Country	British Geological Survey		US Geological Survey	
		Production of Salt (in lakh metric tonnes)	Share in World Production (%)	Production of Salt (in lakh metric tonnes)	Share in World Production (%)
1	China	621.6	22.48	700.0	27.03
2	United States	402.0	14.54	372.0	14.36
3	India	245.0	8.86	170.0	6.56
4	Germany	190.2	6.88	119.0	4.59
5	Canada	108.4	3.92	108.0	4.17
6	Australia	108.2	3.91	108.0	4.17
7	Mexico	101.0	3.65	108.0	4.17
8	Chile	80.5	2.91	80.6	3.11
Top-8 countries		1856.9	67.16	1765.6	68.17
World		2765.0	100.0	2590.0	100.0

Source: www.bgc.ac.uk/minerals/uk/statistics
www.minerals.ungs.gov/minerals/pubs/commodity/salt

As presented in table.1, India is the third largest producer of salt and Indian salt has been penetrating international market due to its good quality and also due to improved infrastructural facilities at ports. In 1947, the production of salt was only 19.3 lakh metric tonnes and it has reached 124.0 lakh metric tons during the year 1990 and further to 239.51 lakh metric tons by 2010 (Government of India, 2014). In India, salt is produced in 52 districts under public, private and cooperative sectors which contribute 1.6 per cent, 91.0 per cent and 7.4 per cent respectively to the total production of salt. There are 174 cooperative societies with total of 26,882 members working in 28483 acres and produce 17.09 lakh tonnes of salt in India. The

details of production of salt and its distribution are presented in Table. 2.

The data presented in Table. 2 reveals that 2.5 lakh hectares were assigned for the production of salt in 2013-14 and only 1.45 lakh hectares (58.4 per cent) were cultivated for producing salt, showing a marginal increase from 2011-12 (55.3 per cent). The data also reveals that though 245.47 lakh tonnes of salt was produced in 2012-13, which has increased from 221.79 lakh tonnes in 2011-12, there was a decline in 2013-14 as 230.19 lakh tonnes was produced, showing a decrease of more than 6.0 per cent (10.28 lakh tonnes).

Table. 2. Cultivation and Production of Salt in India

Cultivation and Production of Salt		2011-12	2012-13	2013-14
I	Area under Cultivation (in Hects.)			
	a) Total area assigned for salt production	2,46,793	2,47,903	2,49,011
	b) Area under cultivation	1,36,365	1,43,699	1,45,308
	c) Area under cultivation as percent of total area assigned	55.3	58.0	58.4
II	Production of Salt (in lakh tonnes)			
	Public Sector	2.99 (1.3)	3.60 (1.5)	3.64 (1.6)
	Cooperative Sector	18.51 (8.4)	20.05 (8.1)	17.09 (7.4)
	Private Sector	200.29 (90.3)	221.82 (90.4)	209.48 (91.0)
Total Production of Salt (in lakh tonnes)		221.79	245.47	230.19

Source: Government of India (2014) Annual Report-2014, Ministry of Commerce and Industry, Salt Department, Annexure -2.1, p.131.

The data presented in table. 2 also reveal that there was a decline in the production of salt by both cooperative and private sectors. In 2012-13, 245.47 lakh tonnes and 20.05 lakh tonnes of salt was produced by private and co-operatives respectively, which has declined to 209.46 lakh tonnes and 17.09 lakh tonnes in 2013-14, indicating a net decrease of around 39 lakh tonnes. However, the produc-

tion of salt by public sector units has increased to 3.64 lakh tonnes in 2013-14, over 2011-12 (2.99 lakh tonnes).

The information published by the Department of Salt show that there are seven public/joint sector undertakings functioning in Tamilanadu (2), Andhra Pradesh (1), Gujarat (2), Himachal Pradesh (1) and Rajasthan (1), operating in

89,077 acres of area held and producing 3.64 lakh tonnes in 2013-14 (GOI, 2014).

Distribution and Consumption of Salt in India:

In India, salt is manufactured mainly by solar evaporation of sea water, sub-soil brine and lake brine. In India, 9 states viz., Gujarat, Tamilnadu, Rajasthan, Andhra Pradesh, Maharashtra, Odisha, Karnataka, West Bengal and Goa are the salt producing states. With an average production of 180.96 lakh tonnes, Gujarat; with 25.87 lakh tonnes Tamilnadu and with 11.82 lakh tonnes Rajasthan and with 4.43 lakh tonnes Andhra Pradesh occupy the first four dominant ranks in the production of salt in India. All these four states produce about 99.0 per cent of the total production of salt in the country.

According to the authorities of salt department, Government of India, 11 states are producing salt, among which Gujarat (78.0 per cent), Tamilnadu (11.2 per cent) and Rajasthan (7.4 per cent) are the major salt producing states. The other 8 states produce 2.8 per cent (636.2 thousand tonnes) of the total salt produced in India. A brief view of the distribution and consumption of salt is presented in Table. 3

Table. 3. Distribution and Consumption of Salt in India

Year	Sector-wise Consumption of Salt (in Lakh Tonnes)			
	Human Consumption	Industrial Consumption	Exports	Total Consumption
2011-12	59.67 (28.4)	112.89 (53.7)	37.71 (17.9)	210.27 (100.0)
2012-13	59.08 (20.4)	114.38 (51.2)	50.04 (22.4)	223.50 (100.0)
2013-14	55.43 (24.6)	110.05 (48.9)	59.61 (26.5)	225.09 (100.0)

Note: figures in the parentheses denote percentages.
Source: Ibid. P.31.

The data on sector-wise consumption of salt in India shows that the total consumption of salt in India has been increasing during the recent years. The total consumption was 201.27 lakh tonnes in 2011-12 and it has increased to 225.09 lakh tonnes, indicating a 7.0 per cent net increase during this period. However, it is seen from the data that consumption of salt for edible and industrial purposes has declined during this period and on the other side the quantity of salt exported has increased from 37.71 lakh tonnes to 59.61 lakh tonnes, indicating a net increase of 58.0 per cent during the same period.

The annual report 2013-14 of the Salt Department shows that the movement of salt for edible and industrial purposes was made dominantly by road (72.4 per cent) and rail (26.5 per cent) modes of transport.

Yield and Labour Productivity:

Salt industry in India is still labour-intensive. Majority of the major operations in production of salt are done manually. Some of the large salt manufacturing units are using mechanisation to perform the operations. It was estimated that 1.12 lakh persons were working on an average in salt industry. It was reported that salt making business is a very difficult job, if affects health, eyes and legs of the workers and comparatively agricultural work and coal work were reported more easier than salt work and there is increasing competition for employment. Majority of the salt workers reported that it impacts on children education as the wages are very low (SAVE,Gujarat). Since the operations are very harsh and difficult working conditions are keeping away the labourers from this industry and they are migrating to other industries. Consequently, the yield and average production per worker has been declining in salt industry as shown in Table.4.

Table. 4 : Average Yield and Productivity of Salt Workers in India

S.No	State	Average No. of Labourers Employed in Salt Industry		Average Yield (Tonnes/Acre)		Average Production of Salt Per Worker (in Kgs.)	
		2011-12	2013-14	2011-12	2013-14	2011-12	2013-14
1	Gujarat	53122	47585	83.5	74.0	320.4	380.3
2	Tamilnadu	18693	8226	46.4	46.6	132.5	314.4
3	Andhra Pradesh	18808	6965	12.6	14.6	16.2	63.6
4	Rajasthan	16829	14854	78.3	63.9	130.1	79.6
5	Maharashtra	2050	4199	15.3	16.8	75.7	34.7
All Salt Producing States		111932	85403	65.8	64.1	198.1	269.5

Source: Calculated from the Annual Report-2013-14 based on Annexure 16.2, 6.11 and 6.5, Salt Department, Ministry of Commerce and Industry, Government of India.

It is evident from the data that the selected five states account for 98.2 per cent of the total workers engaged in salt industry in 2011-12 and this proportion has decreased to 95.9 per cent during the year 2013-14. This decline clearly explains the migration of salt workers to other industries. Particularly in the states of Tamilnadu and Andhra Pradesh, the migration was found highest in India.

The data indicates that the productivity of salt industry, measured in tonnes of average salt production per acre of cultivated area has also declined from 65.8 tonnes to 64.1 tonnes for the total salt industry and this decline was significant in Gujarat and Rajasthan. Contrary to this trend, the average yield has increased in the cases of Andhra Pradesh and Maharashtra and in Tamilnadu there was a negligible increase in the average yield. The data shows

that average yield was lowest in Andhra Pradesh and found highest in Gujarat, followed by Rajasthan and Tamilnadu.

Similarly, the measurement of labour productivity estimated by the indicator average production of salt per worker employed in salt industry shows that there was a significant increase from 198.1 kgs. To 269.5 kgs and this increase might be due to the fact that the no. of workers has declined between 2011-12 and 2013-14. The productivity of workers was found highest at 380.3 kgs for Gujarat, followed by Tamilnadu with 314.4 kgs. and the average production of salt per worker was very low in the case of Maharashtra (34.7 kgs.), as there was a remarkable decline in the productivity of workers. The average production of salt per worker has increased in the states of Gujarat,

Tamilnadu and Andhra Pradesh, where as in the case of Rajasthan and Maharashtra it has declined during the years 2011-12 and 2013-14.

Exports and Imports of Salt:

Salt is one of the commodities exported from India. Ex-

port of common and iodised salt is permitted under open general license. Salt is exported to more than 90 countries by sea (97.2 per cent) and by rail to Nepal (2.6 per cent). The details of exports of salt are presented in Table. 5.

Table. 5: Exports of Salt from India to the Top - 8 countries.

S.No	Selected Countries with mode of Transport	Quantity Exported (in Lakh MT)		Increase/decrease in 2013-14 over 2011-12
		2011-12	2013-14	
1	China (By Sea)	2.70	27.44	+ 24.74
2	Japan (-do-)	17.41	10.37	- 7.04
3	Korea (-do-)	1.12	7.96	+ 6.84
4	Qatar (-do-)	2.13	4.69	+ 2.56
5	Bangladesh (-do-)	2.38	2.50	+ 0.12
6	Vietnam (-do-)	2.26	1.16	- 1.10
7	Malaysia (-do-)	0.41	1.09	+ 0.62
8	Nepal (By Road)	1.49	1.64	+ 0.15
a) Total selected 8 countries		29.96 (79.3)	56.85 (95.4)	+ 26.89
b) Other Countries		7.80 (20.7)	2.76 (4.6)	- 5.04
c) Total Exports of Salt		37.76 (100.0)	59.61 (100.0)	+ 21.85
d) Total Value of Salt Exported (Rs.Crore)		492.3	844.4	+ 352.1

Note: figures in the parentheses denote percentages

Source: Calculated from the Annual Report -2013-14, Salt Department, Government of India, Annexure-12.3, p.88 and 89

The data presented in Table. 5 reveal that the total quantity of salt exported has increased to 59.61 lakh MT in 2013-14, which was 37.81 lakh MT in 2011-12. The total value of salt exported has increased from Rs. 492.3 crore in 2011-12 to Rs. 844.4 crore in 2013-14, indicating a net increase of Rs. 352.1 crore during the three year period (2011-12 to 2013-14).

Viewed from the country-specific exports of salt, the data related to the year 2013-14 reveal that China is the dominant importer of Indian salt (46.0 per cent) followed by Japan (17.4 per cent), Korea (13.4 per cent), Qatar (7.9 per cent) and Bangladesh (4.2 per cent). These five countries together accounted for around 89.0 per cent of the total exports of salt produced in India. The 8 selected countries shown in Table, 4 accounted for 95.4 per cent of the total exports in 2013-14 and the remaining countries accounted for a small fraction of total exports (4.6 per cent).

If we look at the trends it can be observed that the exports of salt have increased significantly to China, Korea, Qatar and Bangladesh and on the contrary they have decreased to Japan and Vietnam. Similarly, the exports of salt have also decreased to other than 8 countries listed in Table. 5, to the extent of 5.04 lakh tonnes. On the whole, the exports of salt increased by 21.85 lakh tonnes in 2013-14 compared to 2011-12, by which India could realise Rs. 352.1 crore additionally by the exports of salt during 2013-14.

Imports of Salt:

It was mentioned that the Government of India has been allowing import of rock salt from Pakistan with effect from 24th May, 1978 under 'Open General License'. The details of import of salt are presented in Table. 6

Table. 6. Quantity and Value of Salt Imported

Year	Import of Salt	
	Quantity (in tonnes)	Value (in Rs. Lakhs)
1978	8,312	69.48
1980	9,117	95.55
1990	17,304	128.86
2000	14,934	138.23
2009-10	27,864	549.78
2010-11	12,298	600.00
2011-12	17,243	422.98
2012-13	18,106	523.81
2013-14	17,273	677.61

Source: 1. Government of India (2014) Annual Reports – 2013-14 and 2014-15, Ministry of Commerce and Industry, DIPP.

2. Government of India (2014) Annual Report-2013-14, Salt Department, Ministry of Commerce and Industry, DIPP. Annexure -13.1, p.90.

It is seen from the data presented in Table. 6 that the import of salt accounted for 8.3 thousand tonnes in 1978, which has increased to 17.3 thousand tonnes by 2013-14. The value of imported salt was only Rs.69.48 lakh in 1978 and it has touched the figure of Rs.600.0 lakh in 2010-11 and thereby decreased to Rs.422.98 lakh in 2011-12 and again increased to Rs.677.61 lakh during the year 2013-14.

Conclusion:

It is beyond doubt that Government of India has been initiating efforts to increase and improve the salt production and its quality. Efforts are also made to educate the salt manufacturers in general and small producers in particular to meet the standards and to compete in the international markets. Recently three "Model Salt Farms" were established for the production of salt of good quality. It is estimated that there are about 11,931 salt works of which 681 (5.7 per cent) are big salt works contributing about 66.0 per cent of the total salt production. The remaining 34.0

per cent of the salt is produced by 11,300 small salt manufacturers. At this juncture, it is to be remembered that salt industry is labour-intensive in nature, which provides direct employment, on an average, to 1.09 lakh persons (2013-14) in our country. Hence, small salt manufacturing units are to be protected and developed for providing gainful employment opportunities.

Working in salt industry exposes the workers to direct contact with inhalable salt dust, salt crystals as well as concentrated brine, physical stress of hard manual labour, direct bright sunlight and glare due to sunlight reflected by salt crystals and brine surface. However, the extreme weather and hard labour conditions in the salt pans cause lot of morbidities among the salt workers. There is a need for modernization and mechanization of salt works and use of personal protective equipments to overcome this problem.

It is to be noted that the production of iodized salt has been decreasing and this trend is to be reversed, so that iodine deficiency disorders might be prevented. One of the important points to be noted is that the exports of salt to Japan and Vietnam have been decreasing and hence, the Government of India must evolve a relevant export-promotion strategy to increase the quantity of exports not only to Japan and Vietnam but also to other countries which need salt and its by-products for edible and industrial purposes.

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