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The Status of Salt Industry in Rajasthan

Shikha Chouhan
Research Scholar
Govt. College Ajmer
Rajasthan, India

Madhu Singh
Senior Lecturer
Deptt. Of Geography
Govt. College, Ajmer
Rajasthan, India

Abstract

This reseach paper is to analyse the salt industry of rajasthan. In the resources means raw material, industry structure, demand supply factor with appropriate statistical data aggrgation or segregation salt market across India and the state competition in indian salt industry.

Introduction

The origin of salt is hidden in the early history of the earth. This is an enigma of nature. The explanation to the presence of salt on our planet and to its diverse manifestations as sea water, saline lakes, salt deposits etc., involves an intelligent synthesis of the findings of many fundamental and border land sciences like astronomy, chemistry, geology, geochemistry, geophysics, oceanography, hydrology, biochemistry etc.

The term Rajasthan formerly known as Rajputana signifies a great territorial circle which includes 19 of the former Indian state. The whole of Rajasthan is saline in character. The salt producing areas are Sambhar, Didwana, pachpadra, Phalodi, Lunkaransar, Pokran, Kuchaman, Nawa, Rewasa, Tal-Chapper and Degana are other places where salt is also produced in sufficient Quantity.

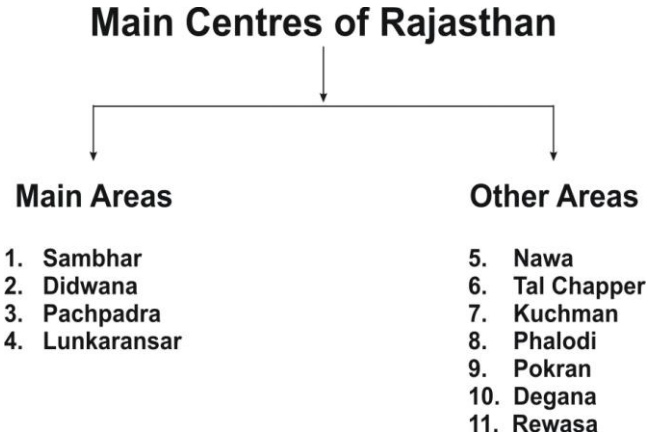
Sambhar Lake is the largest and the most important single salt source in the state. When we trying to found history of salt in rajasthan first we get sambhar. Here, salt is extracted with the help of modern mechanical devices while at the other sources, due to small potentialities and little outturn, work is done by old style in some centres.

'**The Sambhar Lake' This is the white place of Rajasthan where the history meets the ancient stories**. the endless white place, The Sambhar Lake, India's largest salt lake. Lots of old stories of Indian culture are related to this Lake. This is the place where emperor of Bharatvarsha kingdom *Yayathi* who married his wife *Devayani*. Also the Devayani's father and Guru of Asura named '*Shukracharya's* parnasala (used for daily prayers and poojas) was in here.

1000s of year's salt is producing from here. This place was controlled by Rajaputra, Marathas, and Mugals during their ruling times. From 1870s this place was given to British for lease. To carry salt they built tracks and started train services, still it carrying salt. The bogies are made of wood and while I am reaching their one train is starting to go from their. These salt fields are now under the joint control of Government of Rajasthan and Sambhar salt limited company.

Objectives

- **To study the status of salt industry.**
- **To identify the major centre of salt in Rajasthan .**
- **To make importance of salt industry in India and other industries.**



Source Wise Salt Production of Rajasthan

('000 tonnes)

Year	Source	
	Sea	Inland
2007-2008	-	2320.40
2008-2009	-	1869.00
2009-2010	-	2786.20
2010-2011	-	1318.30
2011-2012	-	2047.00

Source : Source : Salt Department, Govt. of India(2011-12)

Above table describe the last five year salt production in rajasthan.its shows the flauction in production.

Districts Wise average Salt Production of Rajasthan

S.No.	Name of District	Average Production
1	Churu	16750.00
2	Jaipur	56753.00
3	Jaisalmer	3800.00
4	Jodhpur	23954.90
5	Bikaner	10730.00
6	Nagaur	1426867.00
7	Barmer	32000.00
8	Sikar	1300.00
Total		**1787749.00**

Source : Source : Salt Department, Govt. of India(2011-12)

This table show the district wise salt production in rajasthan and nagaur has dominate in production.

Main Centre

Sambhar - : Sambhar lake is divided by a five kms dam into two unequal parts. The eastern divide of the lake is a brine reservior covering an area of 76.8 Sq.km. This area comprises number of salt pans (Kyars) for the manufacture of salt through natural evaporation method, by sambhar salt limited.

Didwana - : when I went to didwana ,I saw The salt works extend over about on square mile in the centre of the depression which forms a shallow lake. After the rains the depth of the main portions of the lake is 2' to 3'. This disappears by percolation and evaporation. In the centre circular wells 6 in diameter and about 10'-12' deep are dug. One well feeds 2 to 10 salt pans. the average size being 100'x75'. The total number (553) of pans now being worked in the Mata and Bore Daribas is 345 and 208 respectively. These figures are inclusive of the 180 new pans recently allotted.

Lunkaransar - : Brine flows into the well through calcareous bed. All the old working pans are not of uniform size. The bottom and sides of the pans are headed and worked so as to be smooth and free from cracks and waterlight. During the hot season large crystal of sodium chloride are formed and soduim sulphate form in the day.

Pachbadra - : Pachbadra salt is obtained by the solar evaporation of brine in large pits excavated to the level of the brine springs in the bed of the depression which forms the surface. These pits are 800'x90' also exist. Brine having a density varying from 15^0 to 20^0 to a depth of about 3' and as evaporation proceeds, the inflow continues, until the pits are full of salt up to the brine level. The period of manufacture varies from 6 to 8 months.

Phalodi - : the salt tract lies in the large depression of about 20 sq. miles in area. It consists of two sectors known as malar rin and bap rin. The process of manufacture of salt is fairly simple but involves a considerable degree of practical experience of the varying conditions of brine at different depths and density. Salt is manufactured by solar evaporation in pans measuring from 2 to 3 acres in area grouped together in clusters. The period of manufacture varies from 6 to 8 months.

Pokhran - : In pokhran salt is obtained by solar evaporation . rain water is stored in dug. Depth of the dug is 12 to 15 feet. Shallow evaporation pans are made around these dug. After each monsoon all that is necessary is to clear the mud and the pan is ready for the season's output.

Kuchmancity - : There is no river. The salt works extend over about on sq.mile in the centre of the depression which form a shallow lake. After the rain the depth of the main positions of the lake is 2' to 3'.

Nawa - : The only source of subsoil brine here is from the submersible pumps set up adjoining the Sambhar Lake. Brine from these bore wells is transported through pipelines to the salt pans 3-4 km away from the lake boundary. Salt is produced from the months of September to May, with each production cycle taking 3-4 months.

Rewasa - : Salt is manufactured by solar evaporation in pans. The period of manufacture varies from 6 to 8 months. The only sub soil brine is here is from the bore well water.

Tal Chapper - : The salt work done in the centre of the depression of tal which formes a shallow lake. After the rains, Brine flows into the well through calcareous bed. Shallow evaporation pans are made around these wells. During the hot season large crystal of sodium chloride are formed and soduim sulphate form in the day.

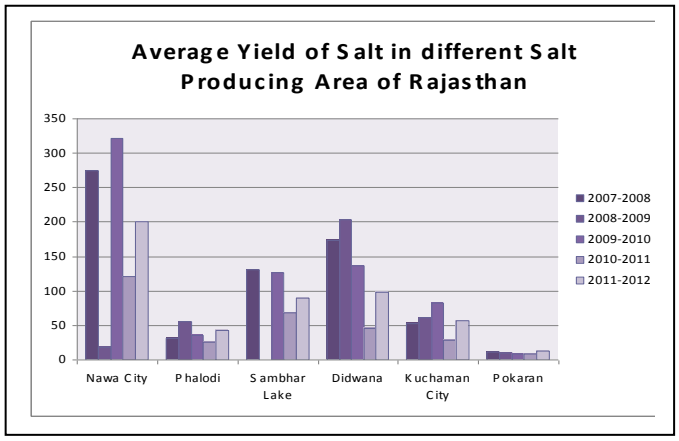
DEGANA - :The period of manufacture varies from 6 to 8 months. The only sub soil brine is here is from the bore well water.

Average Yield of Salt in Different Salt Producing Area of Rajasthan

(Tonnes/Acre)

Name of Producing Area	Average Yield				
	2007-2008	2008-2009	2009-2010	2010-2011	2011-2012
Nawa City	275	18	321	121	200
Phalodi	32	55	36	26	43
Sambhar Lake	131	0	126	69	89
Didwana	173	203	137	45	98
Kuchaman City	53	61	82	28	57
Pokaran	12	10	8	8	13

Source : Salt Department, Govt. of India(2011-12)



In above table shows last five year average yield production of salt in different salt production area of rajasthan.

Methods of Manufacturing

Two methods are followed :

(1) Single irrigation (2) Multiple irrigation

In Rajasthan salt manufactured by Multiple Irrigation Method. In this system the crystallizer is charged with concentrated brine 4"-5" deep and is periodically replenished to make up for evaporation. The crust of salt is allowed to grow into a layer verying in thickness from 3" to 9". Care is taken to see that at no stage the concentration of the brine in the crystallizers rised above 30^0 Be. The salt is harvested 3 to 4 times during the season. This system is more economical than the single irrigation system and the salt obtained is purer and cleaner. salt production season varies between 9-10 months (Rajasthan and Gujarat).

A large number of salt works in Kutch and Sambhar lake area manufacture good quality salt by this process. Salt produced under this system has a percentage of 97.5 to 98.5 NaCl, Impurities being calcium sulphate (1.14%) magnesium sulphate (0.05%), magnesium chloride (0.64%), insolubles (0.08%) and undetermined (0.46%).

Particulars of Iodisation Plants Commissioned upto 31st March 2012 of Rajasthan

(Qty. in '000 Tonnes)

Number of		Installed Capacity		Total	
Iodisation Plants	Refine-ries*	Iodisation Plants	Refine-ries	No. of Plants	Capacity
291	13	1620.0	1133.0	304	2753.0

Source : Salt Department, Govt. of India (2011-12)

Iodised Salt Production of Rajasthan

('000 Tonnes)

Year	Production		Total
	Refined	Un-Refined	
2007-2008	109.3	769.90	879.20
2008-2009	99.20	747.16	846.36
2009-2010	158.81	1077.91	1236.72
2010-2011	220.20	926.80	1147.00
2011-2012	247.10	894.25	1141.35

Source : Salt Department, Govt. of India(2011-12)

Above both table and graph shows that un-refined iodized salt production in rajasthan is more than refined iodized salt.

Varieties of Salt in Rajasthan

Salt is more than a flavor jump-start. It is one of the four basic flavors and an essential nutrient that our bodies rightfully crave. Often incorrectly referred to as sodium, salt consists of 40 percent sodium and 60 percent chloride. While all salts mines are nowhere near a presently existing ocean.

In Rajasthan different varieties of Industrial & Edible Grade Salt have been categorised as Kyar, Reshta & Pan Salt.

- **Kyar Salt**

It is hard bold crystal variety. Due to its high purity levels it is extremely suitable for the Chlor-Alkali Industry. In the edible category it has virtually monopolised its usage in the manufacture of black salt. This salt is also extensively used in storing ice.

- **Reshta Salt**

The wind movement over the surface of Kyar Salt Pans egularly sprays water on their margins where salt dries out in the form of a fine white powder and steadily accumulates. This salt is chemically at par with kyar salt but since it is powdery in nature, it has high solubility and is, therefore, ideal for the purpose of water softening in Thermal Power Stations. Some of our prestigious customers are NTPC, DVB and Electricity Board.

- **Pan Salt**

This variety is primarily used for edible purposes. It is granular and relatively more white in appearance than Kyar and Reshta Salt. When rough crushed, this

product has a ready market in Bihar, West Bengal and the Eastern States.

Transport

Movement of Salt by Rail & Road in Rajasthan during the year

(Quantity in '000 Tonnes)

Year	By Rail		By Road		Total		Grand Total
	HC	IC	HC	IC	HC	IC	
2009-10	23.3	0.0	222.0	354.9	245.3	354.9	600.2
2010-11	25.9	0.0	188.9	279.9	214.8	279.9	494.7
2011-12	25.1	0.0	179.5	333.3	204.6	333.3	537.9

H.C. = Human Consumption
IC = Industrial Consumption
Source : Salt Department, Govt. of India(2011-12)
In this table shows the data of last three year movement of salt in rajasthan.

Ecological Importance

The wetland is a key wintering area for tens of thousands of flamingos and other birds that migrate from northern Asia. The specialized algae and bacteria growing in the lake provide striking water colours and support the lake ecology that, in turn, sustains the migrating waterfowl. There is some wildlife as well around, in forest adjoining lake, where Neel gai (antelopes) moves freely along with deers and foxes. When migratory birds arrives here, entire sky is covered by them.

Conclusion

Despite being the third largest producer, Rajasthan salt industry continues to remain labour-intensive and substantial portion of the production comes from small and medium salt manufacturers, who have no exposure to the latest technologies. "There is a need for technological upgradation and mechanisation of salt works,"

The salt production activity is a seasonal one. Salt production is carried out during the monsoon gaps and in the locations (coastal and desert areas), which are not that suitable for agriculture operations. The importance of the industry lies in the product it produced and as a providerof employment in the agriculturally and industrially backward areas. But the situation of rajasthan salt industry is not good. There is urgent need to government take action for promoting this industry. Because the climate condition is favorable for salt production and it is the basic raw material for many industry specially for cemical industry. After the declioration petrochemical refinery established in the Barmer region , Industrial salt demand increased day by day. If state salt producer supply regulary they give good compitation to other state salt producer.

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