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NaCl Salt Lake and its Production Work-Particularly Situated at Rajasthan, Namely Sambhar Lake (Jaipur), Didwana Lake (Nagaur) and Pachapdra Lake (Barmer)

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Abstract

We have been studied that our state has been surrounded by a lot of salt lakes. There are so many NaCl salt production areas, but we have selected a major lake. Which has a lake area of more than 25 square kilometers. We have been collecting data and surveying these lakes about their production methodology. Also, Lake NaCl is an edible or a non-edible quality for human beings, animals and industries etc.. The main feature of this research shows that these three lakes have been manufacturing NaCl salt at a very large scale in the past and present also. First, Sambhar Lake produces its salt in a very traditional way: it is rain water sources and a small segment of underground brine (NaCl) water well. Second, Didwana Lake produces its salt through an underground brine water well. Third, Pachapdra Lake produces its salt that it is rain water mainly. These lakes manufacture Nacl salt is called edible and non-edible NaCl salt. Our search there explores sample data and surveys. That shows that lakes are an individual manufacturing methodology, namely, making rain water into brine water through a particular process by Labour and lifting of rain water at various stages. Our results explain the right site of methodology of (Sambhar Lake-Ramsar Site of India) manufacturing of salt.

Keywords: Lake salt, brine water, alkaline

Introduction

We elaborate on the manufacturing methods of these lakes, namely: Sambhar Lake, Jaipur, Didwana, Nagaur, Pachapdra, Barmer (fig.4). We study and visit these lakes. We first show our study about Sambhar Lake. This lake produces salt from the dam of rain water. The company labour flows rain water through an electric pump from the dam. A dam is a source of rain water. A dam has been made at the west side of Sakambhari temple (fig.1). The process of rain water being converted into brine water through the labourers. They take rain water through a canal and pour it into Kayari (rectangular volume 50m x100m x 0.25m deep dig). The first Kayari has been filled through another electric pump near this Kayari. The labour works at this Kayari to break water surface rock salt or halite (papddi) by a long wood made handle. The water stir at the Kayari will be done in 15-20 days (fig.2) by 2-3 workers daily. Salt is currently mass-produced by evaporation of salt lake Kayari. The inspector of the company puts a sample and calculates brine water pH>7 for a slightly alkaline NaCl solution or alkaline soil. Here in Kayari, base rock become by Na_2 SO_4 and Na_2So_3. It is called crude of salt Kayari. It has been used in a separate industrial market. The second Kayari has been filled through an inter-connected canal with the nearby first Kayari. It gets sufficient brine water from the first Kayari, same process made here to develop more pH>7 alkaline soil. The third Kayari has been poured through the second one. These Kayari have deposited salt crystal. Didwana salt lake manufacturing method of salt is pumping brine water from a hole into Kayari. Pachapdra salt lake manufacturing of salt is, that the deep Kayari (25mx25mx5m deep dig), filled by the rain water in the Mansoon session around July.

Objectives

We have studied and worked in the salt areas of lakes. Our work has explained and challenged us about production techniques as well as the rights and conditions of labourers. We put our objectives as follows:-

1. Sambhar Lake

a) **Sambhar Salt Limited, Sambhar Lake (fig.3):** This whole production has under taken by this company. The Rajasthan Government has taken some interference with safety and environmental solutions only. Our aim is to resolve this above production of salt and its labour as follows-
   i). New equipment should be installed in the field of the salt lake production area.
   ii). Solar energy of electricity should be implemented as soon as possible.

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iii). Quality of labour and the quality of work in time can be modified through a share of the income and benefits to village labour.
iv). The age of labour should be taken into account. That means 40% of labour get retired after 50-55 years of age. They should get a good pension and other facilities after they retire.

b) Area of lake should be free from nearby mafia who are pumping brine water into the lake site.
c) The huge care about birds and the biodiversity of the lake.
d) Estabish a factory that can make Sodium sulphide and sodium sulphate through crude of alkaline soil.

2. Didwana Lake

Currently, this source has not been controlled by the state enterprise department of government of Rajasthan. In the last 25 years, this lake salt production has been done by the owner of Kayari (fig.5). Today there is much less salt production because of the non-edible quality of salt or not being able to produce salt on time by owner or the owner does not get proper value of his salt from the market. The solution is as follows:-

i). The government should take over.
ii). It is produced only 8 months. So, the government could get more benefits from selling the salt to the market.
iii). Major part is the employment of youth of Didwana and its nearby.
iv). Transportation of the salt and crude will be there. It is also good revenue for both the government.

3. Pachapdra Lake

This is far from capital of Rajasthan. Currently, an oil refinery has been established by this legislative assembly. It has become prime land of Rajasthan business class people. The objective is as follows:-

i). The government should take over it.
ii). The share of income and benefits should be given village labour also.
iii). Here is production of salt alkaline salt crystal in more purely. It is an edible salt (fig.6).

Observation

We have visited more than 10 time the above lake tehshil headquarters. We found out that lakes was a better position for the production wise first at Sambhar Lake and very bad position rest of the lakes. Because the government has not been aware about it. If the government runs these all lakes program for salt production and takes interest in the labour or owner of Kayari at the site of lakes. Our study support from the government and the salt industry has become a major employment and benefit to the state. We can show and prove that our observation can support the state as follows:-

i). In our country, the Air (Prevention and Control of Pollution) Act, 1981, the Water Act1974, and Solid Waste Management Rules, 2016 are being regulated by different agencies, and different sets of civil servants rather than subject experts. But knowing the threat from changing climate, global warming to biodiversity, countries like India are not dealing with these matters as an integrated issue. A dedicated single agency does not look after these matters. “A single agency or nodal officer at each district level should be held accountable for conservation of air, water, climate change and biodiversity conservation. Less fragmentation of these sectors would lead to almost scanty malfunctioning and more accountability there by giving best results” observed by us.
ii). Amid reforms, the veterans feel the golden rules of life will continue serving the purpose of production of salt and employment of youth. We were born in these salt areas. Our veterans are advised that subject experts (fig.3) always look better side of the salt area.
iii). Currently, a tourist program has been developed for these lakes because, if we arrange good facilities for visitors, they will be attracted towards the lake site seen.
iv). We observe that if an institute should be established with subject experts along with nearby Central University, Bandarshindri, Kishangarh, Ajmer.
v). We observe that our work finds so many young people who are looking towards the salt industry for a career but who could not get entry or entrepreneurship through their own mother land area of alkaline soil. The big problem with entrepreneurship innovative in the salt industry of local young people automatically settle, our villagers get happy (fig.7).

Fig 1: The Temple of Mata Ji Sakambhari on the West side of Sambhar City

Fig 2: System of Sambhar Lake Kayari for making brine water PH>7 and alkaline Crystal.

Fig 3: Subject Experts and professors at Sambhar Lake.

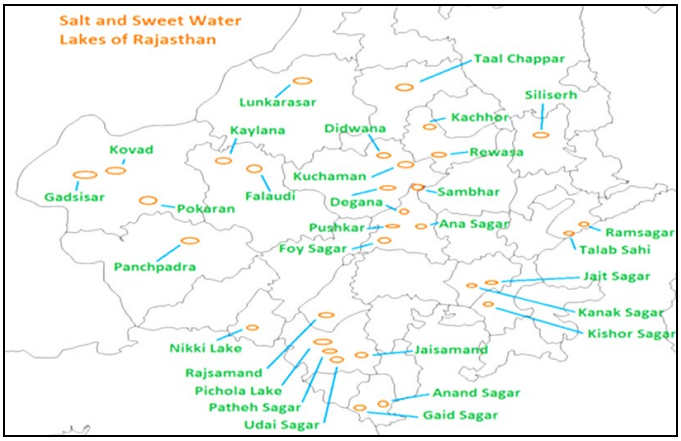

Fig 4: Map of three Lakes in Rajasthan.

Fig 5: Didwana Lake, Nagaur,

Fig 6: Panchpadra, Barmer

Fig 7: Labour men and women at the national festival, 15th August 2022, Sambhar Lake

Conclusion

We learn that the salt industry is a very big opportunity for local young people and subject experts-who have experience, training and qualification of alkaline soil as well as new technical installation in the field of the salt lake. The government should focus on production of salt and labour benefits. Our state and the government of India will be enriched. The youth employment problem in the nation can be minimized. Ramsar site (Sambhar Lake) will be organized in Rajasthan. It could be shown achievement test of our Ramsar site at Sambhar Lake.

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