

## Ecology Vis-A-Vis Economy: The Ramsar Site-Sambhar (India)

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### Editorial

The use of salt as an appetizing food additive could be evidenced from the historic records of ancient civilizations as old as 5,000 years. The salt manufacturing from the inland saline environment is having the similar records. There are many such salt lakes on the earth with the saline environment supporting a great diversity of the life such as the Dead Sea, the Great Salt Lake of Utah, the Kulundinskaya Steppe lakes of former USSR, the Wadi Natrun lakes of Egypt, the East Africa Rift Valley lakes, the Great Plains lakes of Canada, Australia salt lakes, Exportadora de Sal of South Africa, Western salt pond systems of California, etc. India is endowed with a large sea coast but most of its inland saline environments are situated in Rajasthan. The Sāmbhar is the largest shallow saline lake of India and considered to be the most significant in terms of ecology and economy.

Sambhar Lake is situated with the latitude 26°56'N and the longitude 75°04'E on the eastern part of Aravalli Hills at a distance of approximately 65 km from Jaipur, the State Capital of Rajasthan. Administratively, it falls in the Ajmer, Nagpur, and Jaipur with borders in Sikar districts of Rajasthan. It is an intermittent lake with the typical wetland features. It is identified as Ramsar Site in 1990 and Important Bird Area site due to its global importance as it supports the large avian congregation especially flamingos Greater Flamingo (*Phoenicopterus ruber*) and IUCN Red Data Species Lesser Flamingo (*Phoenicopterus minor*). These waterfowls are supported by the specialized group of halophilic bacteria and algae

as a source of their food energy. Outside the Rann of Kutch (Gujarat), the saline ecosystem of Sambhar is the most important wintering refuge for this species along with its adjoining saline wetlands, Phulera and Deedwana. It has the record presence of half a million flamingos in 1980s which has fallen down to few thousands in the first decade of 2000s.

Besides ecological importance, the site too holds the economic importance. It is the important source of salt production constituting 9% of the India's total salt production and placing Rajasthan within top three salt producing states of India. The Historical records show the age old salt production that goes back 2,000 years. Thus, saline environment not only sustain a unique ecological attributes for the variety of life but also sustains the livelihood of hundred-thousands of humans on records. A considerable amount of salt is being carried out into this lake from a geographic area of 5,500 sq km through four seasonal rivers namely Rupnagar, Mendha, Kharian and Khandel. It is a 'terminal deserts lake' with a characteristic of absence of natural outlet, centripetal drainage and evaporation is only process of outflow of collected water. The climatic conditions of Sāmbhar is mostly dry, arid with extreme temperature variation from 23°C in winters to 45°C in summers favors salt manufacturing. As per the records, the salt production is mostly carried out by the government owned companies. At the ground reality, the illegal salt extraction exceeds ten times then the legal. Off the records, the harsh

realities of sustaining thousands of households having illegal borings underlying pumps and network of electric wires along with several diseases and human tolls.

Over the years the extensive catchment of the lake has been encroached upon for the mining and other human-centric development activities like agriculture. Further scanty rainfall and anthropogenic barriers of the water flows through construction of dams and check-dams, the substantial decline in incoming water was resulted. The conditions worsened by the over-exploitation of ground water by private salt manufacturers, thus, deteriorated the ecosystem of Sāmbhar.

The greed is not stopped and the ever growing illegal salt production around Sāmbhar is causing the disruption of the ecological cycle of the lake of global importance. The administrative areas of the three districts Jaipur, Ajmer and Nagpur monitor the major parts of the Lake. The Jaipur sites might be frequently under supervision of the government agencies but it is doubtful for the regular monitoring of the sites of Nagpur and Ajmer. As per the information shared by one of the Field Biologist Dr. Dau Lal Bokhara, over thousands of the illegal bore wells with a network of electric lines having numerous open and naked wires are enough to cause the earth currents in the area. With the good monsoon this year (2019), the water level is enough to submerge the electric wires. One can't

overlook the relationship of the current intensity with the paralysis of the organism especially birds. Post *Diwali* (Indian Festival of Light) has brought a great setback to the nature lovers due to death tolls of the birds which crossed 20,000 till date. Though, the Avian Botulism has been officially declared as the main cause of the bird mortality but ever increasing greed of the salt economy can't be overlooked. With the manufacturing cost of INR 0.40 (0.006\$) and selling price of INR 10.00 (0.14\$) per kilogram, the profit is more than twenty folds. No one would like to lose such profitable business. Thus, economical importance supersedes ecological importance for the local population.

Undoubtedly, the official circulation detected botulism as main cause for the bird mortality at the Sambhar but the doubts of the conservationists will remain alive till the future of the ecosystem gets secured. We are aware of the prevention and control of the Avian Botulism. If the cause of the Sambhar Avian Mortality is other than what has been declared (i.e., Avian Botulism) then we must not overlook. The questions remain alive, are we ready to take action against the illegal revenue generating business running all around the Sambhar.

If we really keen to prevent the ecocide of the sambhar, then we need to restrict the salt politics from the salt economic area by checking the salt lobby.