Salt Production in Pernem Taluka: A Study of Agarwada, Arombol and Korgao village

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I hereby declare that the data presented in this Dissertation report, "Salt Production in Pernem Taluka: A Study of Agarwada, Arombol and Korgao village" is based on the results of investigation carried out by me in the History Discipline at the DD. Kosambi School of Social Sciences and Behavioural Studies, Goa University under the Supervision of Ms. Sneha B. Ghadi and the same has not been submitted elsewhere for the award of a degree or diploma by me. Further, I understand that Goa University will be not be responsible for the correctness of observation/ experimental or other findings given the dissertation.

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PREFACE

The salt industry has long been a part of Goa's tradition, with its importance dating back to the Portuguese colonial period. However, the introduction of globalization puts an imprint on this traditional industry, resulting in its slow decline in current times. Struck by this transformation, I decided to write my dissertation on the evolution of salt pans and their community in Pernem Taluka. Despite its apparent simplicity, this topic revealed an intricate past that required an in-depth investigation to uncover its complexities.

With limited comprehensive data, I begin on a research work, relying mainly in interviews, secondary sources, and primary data from several institutions. My mentor guided me through the historical, sociological, and economic aspects of Goa's salt business. My scholarly purpose was to illustrate salt's long term significance and impact on communities that have long depended on it.

ACKNOWLEDGEMENTS

The completion of the research project entitled “Salt Production in Pernem Taluka: A Case Study of Agarwada, Arombol, and Korgao” was made possible by the collaborative efforts and support of numerous individuals and institutions, to whom I extend my sincere gratitude.

First and foremost, I want to convey sincere thanks to Assistance Professor Ms. Sneha B. Ghadi, my esteemed guide, for her unwavering support and valuable guidance throughout the course of this research. I also express my gratitude to all the teachers for their constant guidance and support.

Furthermore, I extend my gratitude to the various institutions that facilitated access to essential resources, namely the Goa University Library (Taleigao), the Goa Central Library (Panaji), the Goa Sate Archive (Panaji), Xavier’s center for Historical Research (Alto, Porvorim), and the Arombol Village Library.

A special acknowledgement is extended to Mr.Pravin Bagli and Vilhas Shirodkar for their continuous guidance and provision of valuable information greatly enhanced the quality and depth of this research.

Lastly, I extend my heartfelt thanks to my family and friends for their support and encouragement, without which the completion of this project would not have been possible.

CONTENT

TABLES

FIGURES

ABSTRACT

Salt, often overlooked in its simple form, but it has a complex history intertwined with cultural and economic significance. Salt's rich significance is seen in its link with purity, loyalty, and trust, as seen in ceremonies related to religion, folklore, and even military oaths. Furthermore, the evolution of salt manufacturing techniques and the exploitation of salt resources during colonial eras have left a permanent impression on society, highlighting the intricate interplay between human creativity, commercial interests, andsocietal norms. Pernem, located at the northernmost part of Goa, has a deep-rooted history intertwined with salt production, dating back to the time of Portuguese colonial rule. The salt pans located along the Chapora and Tiracol rivers played a pivotal role in sustaining Pernem's economy, with the district contributing significantly.The study was initiated to understand salt producing villages like Aggarwado and Korgao in Pernem, which continue to preserve this unique cultural heritage, despite problems like as declining profitability and the loss of traditional ways. Despite these challenges, attempts are being made to preserve the historical relevance of salt production in the region. This continued dedication underlines the long-term significance of Pernem's salt-making legacy, both economically and culturally, in the context of Goa's history and growth.

KEYWORD: Salt, Mithaguda Gawade, Settlers, traditional occupation, Heritage, Living condition, Wages, Economic status, Socio- Cultural background, Feast and Festival, Religion, Pattlo, Sallane, vad-divas, Tapovani, Globalisation, Modern techniques, Changing lifestyle, lost occupation, government Support.

GLOSSARY

Agor- Salt Pan

Antni- Third bed

Bhauri- Whirling or Revolving around

Bhom-Pump

Chikol- Marshy soil or mud

Chikol gud'daithale- Smashing of marshy soil or mud

Daanto- Tool with teeth to mixed the mud

Dau- Narrow inlet

Deuchar- Guardian local spirit, benevolent or malevolent

Fhoem (phoem) Odop- To collect salt crystals with a wooden implement

Fhor marta- Building the bunds

Fugdi- A traditional dance

Ghuddo- Clay made with clay and hay

Jati –Subcaste

Kunwanwo- Mud balls extracted from the bottom of the salt pan

Mangor/Khop- Hut to store salt in Agorwada

Mero- Mud ridges

Mitagar- Salt pan

Mittkar- Salt maker

Nistovpaak- To dry

Nivddo- Smaller toothed tool

Paall or Pau- Narrow Passage Ponoiee- Pipe made out of the coconut tree used in the past

Poddshing- The second bed is filled with water

Pattlo- Bamboo basket utilized to carry the salt

Pikeche agor- Salt producing salt pans

Raas- Big heap

Saai- Thin layer of salt crystal

Sallan- Tool used for layering the Crystal

Shigmo- Spring festival in Goa

Topovanim- Reservoirs

Uttorni Kaddop- Salt is collected in bamboo baskets and then dumped in piles on the bunds.

Vaddo-Village hamlet

CHAPTER 1: INTRODUCTION

1.1 Background

Salt is said to be born from the purest parents of the Sun and the Sea.[1] The Arthashartra of Kautilya says that the post of Lavandhyaksh' or an officer was given to salt production.[2] Salt occupies significance place in human civilization and played a crucial role in the economic life of Goa and was traded in barter system.[3] It was one of the ancient industries in India.

Goa was among the leading producers of salt during the17th and 18th centuries and was known for its superior quality. Salt produced in talukas like Bardez, Tiswadi, Salcete, and Pernem was of good quality and was exported to many inland territories as well as overseas. It contributed significantly to the economy of Goa, by 1876; there were 36 villages with 386 salt pans producing 50 thousand tons of salt.[4] Due to its organic nature, salt produced in Goa had a strong demand in the market and commanded a higher value compared to salt from Kanara and Bombay.[5]

Therefore, this study will focus on the various salt producing pans of Pernem Taluka and analyse their socio-cultural, historical, and economic importance. The research will also examine the impact of modernization on the salt–producing communities in the area. It will provide a detailed analysis of lesser-known salt pans in Arombol, Palyem, Mandrem, Korgao, Agarwada in Pernem Taluka.

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[1] Gasper D' Souza, "Tears of the Salt," *The Navhind Times*, July 3, 2005, 1.
[2] Nandakumar Kamat, "Benefits of organic Salt," *The Navhind Times*, May 24, 2006, 17.
[3] Judith Branganca, "Microbiology of the Salt Pan," *The Navhind Times*, March 16, 2005, 12.
[4] Nandakumar Kamat,"Reviving Goa's Salt Industry," *The Navhind Time*, March 14, 2005, 10.
[5] Kamat, "Reviving Goa's Salt," 10.

1.2 Aim and Objective

The objectives of the research are as follows:

- To study and document the history of salt production in Pernem Taluka.
- To trace the evolution of the salt pans in Pernem Taluka.
- To analyse the conditions of salt pans and salt producers during the colonial and post- colonial periods.

1.3 Identification of Research Problem

There are numerous sources available for studying the salt trade and industry in Goa, as well as in India. Many works exist on the salt- producing communities in Goa and their transitions over time. However, this work focuses on the salt pans in Pernem Taluka, which are currently abundant but facing the risk of decline due to intense completion from international brands and neglect of the traditional ‘Gaunthi mith’.Therefore, it is crucial to study the evolution of the salt industry in Pernem Taluka and its history, as these pans are on the verge of decline.

These salt pans also play a vital role in Goa’s economy in 1876, Pernem had five villages producing salt, but today, this number has dwindled to only two. Detailed information about these salt pans is not available in previous research. By addressing this research gap, the study will contributes new insights and serve as a references for future research.

1.4 Scope and Relevance

This chapter will explore the conditions of workers during the colonial period and how colonial revenue policies affected them. It will also investigate the situation of salt pan workers and owners after liberation, and study government efforts to assist them in the face of competition from iodized salt. Additionally, it will examine the lifestyle of contemporary salt pan workers and cover socio-economic factors to understand feasts, festivals, and the economy during colonial and post-colonial periods.

Moreover, this research aims to provide a comprehensive understanding of Pernem's salt pans, both operational and abandoned. It will aid future researchers in grasping the lifestyle of salt pan workers during and after liberation, shedding light on their trade relations with neighboring areas and their current status.

1.5 Literature Review

Reyna Sequiera's "*Mitagars of Goa (A Sociological Study of a Community in Transition)"* is a significant sociological study focusing on a community engaged in salt production. It explores the changes occurring in the salt industry and how they changes effect the communities involved in salt production. Sequiera also discusses the different feasts and festivals associated with salt manufacturing, and how societies have developed throughout time. The book covers case studies of Agarwada village and Batim, discussing their socio-cultural significance. Furthermore, this book is significant because it examines the socio-

cultural roots of salt production, and the obstacles they encounter, particularly during periods of transition.[6]

Ms. Caroline F.E. Fernandez's thesis, "*Salt Pan Ecology And its Impact On Community Structure of Halophilic Archaea,*" is a significant contribution to the study of salt pans in Goa. It thoroughly examines the ecological dynamics of salt pans and their extraction processes. One of the main focuses of the thesis is on the purification of microorganisms in salt pans, which sheds light on how these ecosystems function and maintain microbial balance. Fernandez also discusses the issue of contaminants in salt pans and their harmful impact on the ecosystem. By studying pollutant substances and their sources, the thesis highlights the need of conserving the ecological balance of Goa's salt pans.[7]

Harischandra Tucaram Nagvekar's thesis, "*Salt and the Goan Economy, A Study of the Goa's Salt Industry and Salt Trade in the 19th and 20th Centuries during the Portuguese Rule*" is a significant contribution to understanding the workings of Goa's salt industry and trade during the 19th and 20th centuries under Portuguese rule. It delves into various aspects of salt production and trade from the 18th to the 19th century, highlighting the industry's importance in the Goan economy. The thesis also examines the impact of Anglo-Portuguese treaties and economic blockades on the Goan economy, particularly on the salt industry.

[6] Reyna Sequiera, *As Dear as Salt*, (Saligao: Golden Heart Emporium, 2013), 8-9.
[7] M.s. Carolin Fernandez, "Salt Pan and Ecology and its impact on the Community structure of Halophillic Archaeo" (PhD diss., Goa University, 2006), 14-15.

Nagvekar's work sheds light on how these treaties and blockades affected Goa's agricultural sector, industries, and trade, both in terms of exports and imports.[8]

Furthermore, the thesis discusses the repercussions of Indian economic blockades on the Goan economy, providing insights into the broader economic Nagvekar's thesis provides unique insights into Goa's socioeconomic dynamics in the nineteenth and twentieth centuries. Overall Salt and the Goan Economy are critical for understanding the historical importance of Goa's salt industry and its role in defining the region's economy. It sheds light on how colonial influenced Goa's economic development, particularly in terms of salt production and trade.

"*Goa Trade and Commerce*" by S.H.K Mhamai focuses on salt production in Goa during the period covered by the treaty of 1880-1891. Mhamai provides detailed statistics on salt production in various talukas of Goa over consecutive years, highlighting differences in production levels among Salcete, Bardez, Pernem, and Ilhas. Additionally, Mhamai discusses the retail sale of salt in Goa at licensed private shops during the years 1880-1881. This seminar paper is valuable for its period-wise analysis of salt production in these four talukas.

"*Trade and Finances in Portuguese India"* by Celsa Pinto is a significant work that explores sea-borne trade in India during the sixteenth century, with a focus on the maritime trade between Lisbon and India. Pinto's compilation covers the history of this trade,

[8] Tucaram Harischandra Nagvekar, "*A Study of Goa's Salt Industry and Salt Trade in the 19th and 20th Century during the Portuguese Rule"* (Ph.D. diss., Goa University, 1999), 20-21.

detailing the various commodities traded from Goa to interstate and international markets. Notably, salt, pepper, rice, mango, coconut, and betel nut were crucial commodities during this period. The book also discusses the ships and shipping methods used by merchants for trade purposes, providing important information about the salt trade and shipment statistics.

"Celsa Pinto's *Goa Image and Perceptions Studies in Goan History"* is another important work by Celsa Pinto, which discusses the commodities exported during the Portuguese period in Goa. Pinto also addresses the period of British influence, during which salt came under British control through a treaty. Additionally, Pinto examines the Anglo-Portuguese treaty of 1878 and salt production statistics under this treaty from 1880 to 1891. This book is valuable for understanding the statistical data on salt-producing areas of Goa during the Anglo-Portuguese treaty period.[9]

"Govyatil Paramparik Vyavasay" by Shailesh Chandra Pandharinath Raikar discusses the traditional occupations of Goa, focusing on the changes that have occurred in these occupations over the past seven to eight years. Raikar also addresses the consequent impacts on traditional occupations, highlighting the challenges faced by people and the government's role in improving the status of these occupations. Specifically, Raikar examines the decline in salt production and the various problems contributing to it, making this book significant for its exploration of a lost traditional occupation salt making.

[9] Celsa Pinto, Trade and Finances in Portuguese India: A Study of the Portuguese Country Trade 1770-1840. (Panaji: Rajhauns Vitaran, 1996), 5-6.

"Pedne Talukyacha Itihas" by Professor Arun Nakul Naik is an important work that delves into the socio-cultural, economic, and religious history of Pernem, covering the period from the Portuguese era to the present. The book discusses various aspects such as freedom fighters, educational qualifications, demography, notable personalities, and archaeological findings in Pernem Taluka. Additionally, it sheds light on issues like the Agarwada salt pan's decline, providing crucial insights into the socio-cultural, economic, and political significance of Pernem Taluka.

"*The Salt Industry in India"* by S.C. Aggarwal is a significant book that comprehensively covers different aspects of salt production in India. Aggarwal's studies encompass the geographical distribution of salt production, technology, historical context, revenue, administration, labor, communities, and foreign salt industries. This book is valuable for researchers seeking a deeper understanding of the salt industry in India and its various dimensions.

"*The Portuguese Seaborn Empire 1415-1825*" by C.R. Boxer is a study of the European Maritime Empire, focusing on its achievements and changes over centuries. Boxer explores the Portuguese empire's expansion, shipping, trade commodities, slavery, and global struggles, providing insights into how Portugal managed to maintain its vast empire amidst competing powers.

"*Trade in Portuguese Goa: The Nineteenth Century Scenario*" by N. Shyam Bhat is another significant article examining trade in Goa during the 16th to 19th centuries, with a primary

focus on the 19th-century period. Bhat discusses Goa's economic conditions, trade nature, extent, and commodities exported and imported, emphasizing the importance of salt as a major industrial product exported from Goa to Kanara. This article provides valuable insights into Goa's trade history and its economic significance over the centuries.

"*Trade in Goa and Commodity Composition (1878-1961): An Analysis* by Shyam N Bhat" is another important article that delves into the economic aspects of Indo-Portuguese trade history. Covering the period from 1878 to 1961, which has been less studied, the article sheds light on a time when the Portuguese empire faced financial crisis and Goa's economy suffered. It examines both imports and exports during this period, discussing the impact of economic blockades, the Great Depression, and world wars. This article is crucial for research as it provides insights into the commodities traded during these years, particularly focusing on salt, which experienced a decline in value after the Anglo-Portuguese treaty.

"*Goa to Me"* is a collection of essays by Teotonio D'Souza, reflecting on his journey in search of the history of Goa and its people. It goes beyond an autobiographical introduction to rewrite the history of Goa, focusing on self-identity intertwined with the history of the people. The book extensively covers the economic life of Goan villages, examining the Christianization phase and cultural conflicts, including the trade of salt, which was crucial for exchanging goods. It provides insights into village life, culture, regional economy, and the significance of salt trade.

"*An Illustrated Guide to Goa with a Brief Life of St Francis Xavier*" by Aquino dos Remedios Furtado R.Com is a comprehensive compilation of the history of Goa's talukas. It covers geographical locations, village administration, economics, and historical places of significance, particularly in Pernem Taluka, and their role in the local economy.

"Portuguese India: Its Commerce and Industries" by Crescencio Lobo is a significant book discussing the salt extraction process and its export during the period of British supremacy. It delves into the impact of various British Acts and treaties on the salt industry, examining export volumes, value, and uses of salt, especially during the period of 1878.

"*Medieval Goa: A Socio-Economic History"* by Teotonio R. de Souza covers the early modern period in the west, focusing on the sixteenth and seventeenth centuries as a golden rule in Goa. It discusses the contributions of Portuguese art and architecture, as well as the rivalry between Portugal and Spain, particularly during the Anglo-Portuguese treaty period. This book provides insights into rural populations and their engagement in various works, shedding light on economic development and the competition over commodities, especially salt.

1.6 Research and Methodology

The research design and methodology will incorporate both quantitative and qualitative approaches. It will involve the collection and analysis of primary and secondary sources. The data gathering techniques will include interviews, informal discussions and household case study methods. Fieldwork will contribute to the socio-economic understanding of the topic.

1.7 Scheme of Chapter

Chapter I: Introduction – Scope, Sources, Methodology, and Historiography

This chapter will introduce the research topic, outlining its scope, the sources used, the methodology employed, and the existing historiography on the subject.

Chapter II: History of Salt Production

This chapter will provide an overview of salt production worldwide, focusing on its colonial-era significance in India and specifically in Goa. It will explore the economic importance of salt in Goa's history and its various aspects.

Chapter III: History of Salt Pans of Pernem Taluka

This chapter will delve into the history of salt pans in Pernem Taluka, including their locations and statistical data. It will highlight Pernem's past economic contributions and information about the salt-producing communities in the region.

Chapter IV: Socio-Economic Cultural Background of Salt Producers in Korgao

This chapter will explore the socio-economic and cultural context of salt producers in Korgao, focusing on festivals, cultural beliefs, available educational institutions, and economic backgrounds.

Chapter V: Evolution of Salt Pans and Community

This chapter will examine the evolution of salt pans and their communities, including government approaches towards salt producers in Pernem. It will offer suggestions and reflections based on the findings.

Chapter VI: Conclusion

The conclusion will summarize the key findings of the research and provide insights into the historical and contemporary significance of salt production in Goa, particularly in Pernem Taluka.

CHAPTER 2: HISTORY OF SALT: A COMPREHENSIVE STUDY

2.1 Salt across the World: Exploring it's significance

The history of salt is fascinating and vast. Salt is commodity is so valuable that it was used as money, drove the development of towns and trade route sparked and funded wars, established empires, and sparked revolutions. The exact date that salt entered the market is unknown, but it is without a doubt one of the first product of commerce. Since salt is necessary for human survival, it has long been considered sacred. The term "salt" refers to a sodium chloride which is commonly used in cooking and a substance to freeze the material. Salt consists of 40% sodium 60% chloride.

The history of salt touches our daily life. It was considered as valuable as gold. As a result, salt came to be known as "White Gold".[1] Previously, some countries paid workers with salt. The term 'Salary' is derived from the Latin word 'Salarium' which also means "salary" and contains the root sal,[2] meaning "salt". The expression "Not worth his salt" originated when Roman soldier's salaries were reduced if they did not perform their responsibilities.[3] Salt is also mentioned in ancient Mosaic, Chinese, and Sanskrit documents. The Sanskrit Word for salt is 'Lavana', which is the derivation of 'Nun', the popular Punjabi term for salt.[4] Salt was highly valued and its production was officially regulated in ancient times,

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[1] Aparna Nagendra., et al, "Salt- An Overview," *Acta Scientific Nutritional Health* 4.8, (July 2020): 01-02.
[2] Harishchandra Tucaram Nagvekar, "*Salt and the Goan Economy* (A Study of Goa's Salt Industry and Salt Trade in the 19th and 20th Centuries during the Portuguese Rule)," (PhD diss., Goa University, 1999), 27.
[3] Nagendra, "*Salt- An Overview*," 01.
[4] S. C. Aggarwal, *The Salt Industry in India* (Delhi: Controller of Publications, 1977), 25.

therefore it was historically employed as a means of exchange and currency and was regarded as much valued as minerals and oils.[5] According to Marco Polo, small salt cakes engraved with the Grand Khan head were employed as currency in Tibet, Sahara and Sudan due to their uniqueness, and they were valued equally to gold. Without a doubt, salt has a long and diverse history, leaving an indelible influence on cultures all over the world.

The first mention of salt in Chinese is recorded in Emperor Yu's annals (2205-2197 BCE).[6] A French folktale tells the account of a princess who confesses to her father, "I love you like salt," and he bans her from the kingdom. Only when he refuses salt, he does realise its importance, and the depth of his daughter's love.[7] The ancient Egyptians, Greeks, and Romans used salt in their sacrifices and offerings, and they invoked gods with salt and water, which is regarded to be the origin of Christian holy water.[8] In Christianity, salt is associated not just with lifespan and durability, but also with truth and intelligence. The Catholic Church provides not only holy water but holy salt, Sal Sapientia, or the Salt of Wisdom.[9] Homer referred to it as a divine substance.[10] Plato described it as very beloved to God, and Ernest John, a Physiologist stated that salt is linked to fertility.[11] There is well known Kannada proverb that says "Mother is the best friend anyone could have, and Salt is the best ingredient for enhancing flavor of the culinary item"[12]

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[5] Dr. B.Nagaraja, "Economic Of Salt Production in India: An Analysis," *Indian Journal of Applied Research*, (November 2015): 284.
[6] Albert F. Calvert, *Salt and the Salt Industry,* (London: Isaac Pitman & Son, Ltd, 2020), 10.
[7] Marks Kurlanksky, *Salt a World History.* (Great Britain: Vintage, 2002), 06.
[8] Young, Bonnie, "A Saint on a Holy-Water Font." *The Metropolitan Museum of Art Bulletin* 23, no. 10 (1965): 362–66.
[9] Bonnie, "A Saint on a," 02; Kurlansky, *Salt a World*, 07.
[10] Nagendra, "Salt- An Overview," 01; Kurlansky, *Salt a World*, 03.
[11] Kurlansky, *Salt a World,* 02.
[12] Nagendra, "Salt- An Overview," 01.

Indian troops professed their loyalty to the British with salt.[13] The phrase "Maine apka namak Khaya hai" (I have eaten your salt) has a profound connection with Indian soldiers and reflects a sense of loyalty, duty and commitment. In the context of the military, especially during the colonial period, when Indian soldiers served in the British Indian Army, consuming someone's salt meant taking an oath of allegiance and loyalty. By uttering or embodying this phrase, Indian soldiers expressed a deep bond and commitment to their British officers. "Namak" (salt) symbolized trust and the sacred nature of the relationship between the soldiers and the officers. It signified a promise to serve and defend with unwavering loyalty, instilling a sense of solidarity and shared duty among military leaders. These beliefs demonstrate the long-standing respect for salt in India.

In the past, many household in Goa used chilies and salt to get rid of from the evil spirits. Only after burning chilies and salt a person is rid of terrible evil spirit. The process of preservation technique began when farmers found it difficult to procure fresh meat due to their inability to move and devotion to the field.[14] Food preservation was necessary over the winter months since it was vital for their survival. Until modern times, it was the primary method of food preservation. The Egyptians used salt to preserve mummies from Pre and Early Dynastic Egypt.[15] This ability to retain, protect against decay, and support life has given salt a vast symbolic importance.

Salt's presence in religious rituals, folklore, and even military oaths reflects its deep-rooted symbolism and sacred status in diverse cultures worldwide. Moreover, salt's preservation

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[13] Kurlansky, *Salt a World*, 07.
[14] G. A. MacGregor & H. E. de Wardener, *Salt Diet & Health*, (New York: Cambridge University Press, 1998), 5.
[15] Paula Veiga, "Studying Mummies and Human Remains: Some Current Developments and Issues," *Washington Academy of Sciences,* (2012): 02.

properties have shaped human behaviors and agricultural practices, influencing everything from food preservation techniques to spiritual beliefs. Its ability to extend the shelf life of food has been essential for survival in harsh climates and during long periods of scarcity. Additionally, salt's association with purity, loyalty, and trust underscores its enduring significance in societal customs and interpersonal relationships.

2.2 Addiction to Salt

Our forefathers didn't add salt to their food for five million in the diet. [16] In the course of the evolution, all the mammals followed a diet to which they were extensively suited, even though it is now believed to be extremely low in salt. Herbivorous mammals are more prone to salt shortages than carnivores. The tiny amount of salt that are naturally found in the food is sufficient for humans and other mammals to maintain proper bodily fluid balance.

Between 5000 to 10000 ago, agriculture spread from the Middle East to Europe due to factors like overhunting, climate changes, and population growth, advancing at about one kilometer per year.[17] This shift coincided with increased salt consumption, while diets shifted towards more vegetables and less meat following the adoption of agriculture.[18] However, the precise reasons for the rise in salt agriculture during this period are still uncertain.

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[16] MacGregor & Wardener, *Salt Diet & Health*, 4.
[17].MacGregor & Wardener, *Salt Diet & Health*, 4.
[18] Dethier, V.G, "The Taste of Salt: All Animals Need Salt and Almost All Possess Salt Receptors, yet Few Use them to ensure an Adequate Salt Diet. Salt Receptors May Have Evolved Primarily to Warn against Hyper salinity." *American scientist 65,* no.6 (1977):744-51.

Herbivores, unlike carnivores, have low salt levels in their plant-based diets hence herbivores, unlike predators, may experience salt deficiency and travel long distances to licks salt.[19] However, herbivores take up only a small quantity of salt from salt licks, and there is no indication that their overall salt intake exceeds that of carnivores, whose salt requirement are met by the salt found in meat and blood. Carnivores do not seek salt, although they do frequent salt licks in the hopes of killing on a salt-seeking herbivore. The discovery that meat and other meals could be preserved by immersing them in a concentrated salt solution is likely to have been the most important influence in increasing human salt consumption. Nomads hunted their prey, killed it, and consumed it within a few hours. Nomads followed the wild herds as they migrated. Farmer's immobility, bound to their fields, made it considerably more difficult to obtain fresh meat. During the winter, food had to be preserved in order for them to survive.

The discovery that meat and other meals could be preserved by immersing them in concentrated salt solution is likely to have been the most important influence in increasing human salt consumption.[20] Nomads hunted their prey, killed it, and consumed it within a few hours. Nomads followed the wild herds as they migrated.[21] Farmer's immobility, bound to their fields, made it considerably more difficult to obtain fresh meat. During the winter, food had to be preserved in order for them to survive.[22]

It is possible that the demand for salt arose in this manner. Salt would therefore have been added to unsalted food to equal the concentration of preserved food. The addiction to salt

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[19] Dethier, "The Taste of," 744-51.
[20] MacGregor & Wardener, *Salt Diet & Health*, 04.
[21] Beauchamp, Gary K, "The Human Preference for Excess Salt," *American Scientist*, no.1 (1987): 27-33.
[22] MacGregor & Wardener, *Salt Diet & Health*, 04.

must probably have been increased by its increasing availability. The transition from a nomadic to an agrarian lifestyle led to the permanent towns allowed trade to flourish.[23] Salt became a valuable piece of merchandise.

The role of salt in human diets evolved significantly with the transition from hunting and gathering to agriculture. As farming spread around 5,000 to 10,000 years ago, diets shifted towards more plant-based foods, necessitating the need for food preservation methods like salting. The discovery that salt could effectively preserve perishable foods fueled its increased demand, turning it into a valuable commodity for trade. This shift not only altered dietary habits but also played a crucial role in shaping human civilization by making salt a vital element of trade and commerce.

2.3 Salt Production in India

Salt holds a significant place in human history as one of the oldest commodities, playing a crucial role in the evolution of civilization. Its economic importance is highlighted in the history of the world civilization. In India salt was manufactured along the seacoast in Bengal, Bombay, Madras, Rann of Kutch and Konkan. It flourished as a cottage industry for centuries. The mention of the state official named 'Lavandhyaksha' overseeing the process and the issuance of licenses in the Mauryan period highlights the organized nature of this ancient industry. Mr. F.H Manahan in 'Early History of Bengal gives a passage from 'Arthashatra' – A book that deals with history of the Mauryan period (3000 B.C.E).[24] The Traditional continuity of salt manufacturing tradition from ancient Hindu King to the modern government of India is noteworthy. In India historical records reveal the

[23] MacGregor & Wardener, *Salt Diet & Health*, 04
[24] Aggarwal, *The Salt Industry,* 26.

significance of salt as a form of currency even before Alexander invasion in 327 B.C.E.[25] Salt was extracted and shipped to various regions of the country from the salt mines in Northern India. Since salt was one of the main sources of wealth and therefore out of the reach of the poor, various rulers had monopolies over its manufacturing in the 9th century A.D.[26]

The western portion of Punjab, which is now a part of Pakistan, was recognised as having rock salt. It has known to exist in Punjab's western region, which is currently a part of Pakistan. India's coastal areas of Madras, Bombay, and the parts of Rann of Kutch have been home to salt makers for generations. During 19th centuries, Sikh ruler like Maharaja Pratab Singh actively participated in the salt extraction business in Punjab. Salt extraction along with the mining and agriculture, played a crucial role in boosting the region's economy. They also hired important individuals to work in Punjab's mines on a contract basis.[27]

There were natural salt reserves in the Sindh region and some part of Rann of Kutch. In India salt was also found to be present naturally in Thar and Parkar (Pakistan). Madras was also known for important site known for salt production. The process of making salt in this region involved boiling and solar evaporation. Swamps in the Madras region contained naturally occurring salt that was primarily used for human use. The production of saltpeter, which was done for free for many years, also yielded edible salt. The production of earth salt was a long-standing and officially recognised industry in Mysore. Many salt works

[25] Nagaraja, "Economic of Salt," 284.
[26] Aggarwal, *The Salt Industry*, 26.
[27] Dane, Richard M. "The Manufacture of Salt In India." *Journal of the Royal Society of Arts* 72, no. 3729 (1924): 402–18.

were located in the states of Gujarat, Kathiawar, Dharangadhara, some part of Rann of Kutch, Bombay, and others. Although the processes were somewhat rudimentary, sea salt was also produced. Both Daman and Goa had salt works. In the past, brine wells in Assam were used to produce salt. [28]

For instance, in upper Assam, the springs of Jorhat and Sadiya were reported to have produced one hundred thousand maunds in 1809. Certain remote areas in Chachar, Manipur, and certain hill tracts gained popularity for their salt springs. In these areas, the hill tribes used to boil the brine to extract salt. People in Uttar Pradesh used to lixiviate salt soil to get their salt supply back in the day. The primary method of producing salt in Bengal was boiling sea brine. Thus Salt has played an important role in developing human civilization, both as a commodity and in various places throughout history. Its economic importance, documented from ancient to modern government, demonstrates its enduring value.

2.3.1 Salt production during Colonial Period in India

Following their victory against the Nawab of Bengal in 1756, the East India Company (EIC) seized land in the Bengal province, including salt production areas.[29] The ground rent was increased by the Company as wartime compensation. Robert Clive founded the "Exclusive Company" in 1765.[30] This was a private firm that was granted complete control

[28] Yugraj SinghYadava, Rajdeep Mukherjee, Ram Mundhe, Socio-Economic Status of Workers in the Salt Industry in India- A Report, Chennai, Bay of Bengal Programme Inter –Governmental Organisation, (March 2006), 02.
[29] Roy Moxham," Salt Starvation in British India: Consequence of high Salt taxation in Bengal Presidency, 1765 to 1878," *Economic and Political Weekly* 36, no 25(2001): 22270-74.
[30] Yadava, Mukherjee, Mundhe, Socio-Economic Status, 03.

over salt and other products so it could earn as much as possible. For the first time, there would be a substantial tax on salt, a necessary food ingredient.[31]

It was not allowed to produce any salt other than for the Exclusive Company. Contracts were awarded to transport salt to storage facilities. All of the supplies that merchants required had to be purchased from these depots before being sold to traders or markets where merchants could earn the most.[32] The Company favored increasing the India tax to make imported British salt more expensive than locally produced salt, as well as annexed the neighboring province of Orissa to curb salt smuggling and regulate Orissa's salt output. [33] Further, the salt-producing districts were assigned to the controller and organised into agencies. Each agency was overseen by an agent, a government officer.[34] They were salaried and got a 10% commission on the government's profits.

The East India Company's exploitation of salt production under Warren Hastings indeed played a significant role in perpetuating economic hardships for Indians during that period. The auctioning of salt works and fixing prices led to the systematic impoverishment of workers, contributing to their inability to resist or improve their circumstances.[35] When Lord Cornwallis took over as Governor-General, he saw another opportunity to boost revenue.[36] Wholesalers often used their sub-monopoly to raise salt prices. Instead of establishing a set cost, the Company began selling to wholesalers at auction in 1788.[37] This

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[31] Serajuddin, A.M, "The Salt Monopoly Of the East India Company's Government in Bengal," *Journal of the Economic and Social History of the Orient* 21, no.3 (1978):304-22.
[32] Yadava, Mukherjee, Mundhe, Socio-Economic Status, 03.
[33] Serajuddin, "The Salt Monopoly," 304.
[34] Moxham, "Salt Starvation in," 70-72.
[35] Yonsei Kim, The Political Flexibility Of Salt In British India, *School of Enginerring and Society*, (2022): 02.
[36] Yonsei, The Political Flexibility, 04.
[37] Yadava, Mukherjee, Mundhe, Socio-Economic Status, 03.

resulted in a significant increase in the tax rate to Rs 3.25 per maund. It stayed at this exceptional level until 1879.[38]

This strategy led to the failure of the salt factory due to worker exploitation and Company control over production. Hastings brought salt manufacturing and taxation under strict government control in 1780, thereby terminating free manufacturing and establishing a government monopoly on salt.[39] Hastings established a salt production bureaucracy and ensured all salt sales to merchants went via his agency. Hastings' ability to exercise control over the salt industry was due to British power and the quantity of land required for large-scale salt production.[40] These qualities enabled Hastings to monitor and effectively collect taxes and profit from the salt markets.

Lord Cornwallis increased profits by auctioning salt to merchants, encouraging competition and preventing them from taking advantage of the Company's set pricing.[41] In the late 1700s, the British used salt to shape their authority in India and gain a footing due to its widespread availability in households. Despite plagues, floods, and droughts, the salt tax and hedge remained in place for nearly two centuries. This inspired Mahatma Gandhi's well-known 1930 march to a coastal salt pan to gather salt in protest against the British. Salt became tax-free for the first time in 1947, after two centuries of high taxes.[42]

The East India Company's influence over Indian salt production began in the late 18th century and had far-reaching economic and social consequences. The Company's actions,

[38] Yadava, Mukherjee, Mundhe, Socio-Economic Status, 03
[39] Moxham, "Salt Starvation in," 70-72.
[40] Serajuddin, "The Salt Monopoly," 304.
[41] Nagendra, "Salt- An Overview," 01.
[42] Nagendra,"Salt- An Overview," 01.

including as monopolization, taxes, and worker exploitation and increased the poverty of Indian laborers. Subsequent government actions, such as those under Warren Hastings and Lord Cornwallis, strengthened British control over salt production while increasing revenue. This exploitation continued for over two centuries, until Mahatma Gandhi's well-known salt march and India's independence in 1947, which brought an end to salt levy. The history of salt production in India is a bitter reminder of colonial exploitation and the ongoing struggle for economic justice and freedom.

2.4 Salt Production in Goa

The three Portuguese settlements on the west coast of the Indian subcontinent—Goa, Daman, and Diu—were separated from one another by more than 480 kilometers, Until they were freed by Indian forces on December 19, 1961. Goa was a part of Estado da India. Following their freedom, these three land blocks were governed as a unified administrative entity under the name Union Territory until Goa was split off from the other two and granted statehood in 1987.

Goa is encircled by sub-mountain area of the sahyadri range on the east, northeast and southeast. It is enclosed in India's hilly Western Ghats, an ecologically vulnerable region of 3702 square kilometers. The Arabian Sea form Goa's western boundary and is beneficial for salt production in Goa because it provide easy access to seawater. This seawater, when naturally evaporated under tropical climate conditions, allows the formation of salt crystals, contributing to the production of salt in its natural form, known as rock salt or halite. Tidal influx, on the other hand, has an advantage in influencing salt pans since it brings in seawater, which increases the salinity of the area.

Goa's riverine system holds economic significance for both the fishing and salt industries. Rivers play a pivotal role in salt production by serving as a source of brine, aiding in the evaporation process, and contributing to economic development through the salt industry and related activities. The major river which have combined navigable length of 230 kilometer, are the Mandovi, Zuari, Terekhol, Chapora and Sal. The Mandovi and Zuari riverine plains comprise the majority of Goa's riverine terrain. Lesser basins are those of the kushawati and Sal in the South, and those of the Chapora in the north. Alluvial lowland makeup at the coastal plains, creating sedimentation along the riverine comprises the agricultural lowland. Soil here, are generally lateritic forming up to 81% which is ideal suitable for the salt extraction and are called as Khazan. Khazan land is defined as low-lying land near a mangrove fringed estuary that has been reclaimed using salinity control devices. Khazan lands are generated through the reclamation and adoption of coastal wetlands.[43] The network of Khazans can be found along the estuary of the Zuari, Mandavi, Terekhol, Sal and Chapora rivers.

Goa's economy remained trade oriented throughout the 450 years of Portuguese control. Though the primary crops grown throughout the region was rice, Goa was also renowned internationally for being a location for the production and export of coconut, arecanut, salt and several other export commodities. Salt was one of the key export commodities in Goa's external trade because of its excess production above and beyond the necessities of the Goan economy.

[43] Nandakumar Kamat, "History of Khazan land management in Goa: Ecological, Economic and Political perspective," Goa University, (March 2004), 01.

Goa's salt business dates back more than a thousand years.[44] It is not possible for the humans to find the precise year. The process of making salt was either brought about by the first immigrant who settled in the area of the coastal region and passed it down to the next generations of the immigrant who came to Goa in search of the work.[45] The Goa salt pans were created by the village group or Gaunkar by choosing low lying khazans land near a Creek.[46] In Goa, 84 in Daman, and 24 in Diu, there were 658 salt extractors in 1850.[47] Pernem, Tiswadi, Bardez, and Salcete talukas in Goa are the four talukas where salt is manufactured.

The salt pans of Pernem are located along the banks of the Terekhol and Chapora rivers. The salt pans of the Bardez taluka are located at Siridao, Curca, and Batim lie on the banks of the Zuari. The salt pans located on the banks of the Mondovi are Raibandar and Santa Cruz in Panaji. To the south lies Salcete which depends on bank of river Sal.

In 1960, there were 410.6026 hector of saltpans overall in Goa. During the same year, the area covered by saltpans in Daman and Diu was 9.2590 hector and 2.3133 hector, respectively. In 1960, the total area under saltpans in all three districts of Portuguese India was 422.1749 hectares. The overall area of saltpans in different talukas of Portuguese India did not remain constant. Tiswadi has 48% of land under salt production, followed by Salcete 25%, Bardez 22.5%, and Pernem 4.5%.

During the 16th century, Goa, which included Goa Island, Salcete, and Bardez, was recognised for its trading activity. However, agriculture, horticulture, fishing, and salt

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[44] Reyna Sequiera, *As Dear as Salt,* (Saligao: Golden Heart Emporium, 2013), 41.
[45] Nagvekar, "A Study of,"
[46] Nandakumar kamat, "Chemical Ecology of Salt Pans," *The Navhind Times,* March 16, 2005.
[47] kamat, "Chemical Ecology of," 02.

production were the primary sources of income for the bulk of the population. Portuguese India's economic downfall accelerated in the 17th century. Goa's economic decline began in the 17th century, after a golden age in the 16th century, and affected all areas of the economy.[48] In 1953, there were 303 salt makers in Goa, employing and producing 994 metric tonnes.[49] By 1962, their number had decreased to 231 and production had dropped to a few hundred metric tonnes, while exports had decreased from 6003 metric tonnes.[50] In 1951, it was reduced to 152 metric tonnes by 1960.[51] Today, the salt industry of Goa is in the doldrums. Most of Goa's salt pans have gone out of business, and the handful that are still in operation generate very low grade.

In conclusion, the history of salt production in Goa reflects its integral role in the region's economy, dating back over a thousand years. The geographical features, including the presence of the Sahyadri range, the Arabian Sea, and the riverine systems, have facilitated salt production by providing natural resources and favorable conditions for evaporation. Over the centuries, salt emerged as a significant export commodity alongside crops like rice, coconut, and arecanut, contributing to Goa's trade-oriented economy under Portuguese rule.

However, Goa's salt industry faced challenges over time, including economic decline and dwindling production. Despite once being a thriving trade, the salt pans of Goa have seen a decline in operation, with many going out of business and those remaining producing low-grade salt. This decline reflects broader shifts in Goa's economy and the challenges

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[48] Nagvekar, "*A Study of Goa's,"* 18.
[49] Sequiera, *As Dear as*, 35.
[50] kamat, "Pans,"
[51] kamat, "Pans,"

faced by traditional industries in the face of modernization and changing economic dynamics.

2.4.1 Salt Production and Economic Growth in Goa

Goa gained recognition internationally for its role as a hub for producing and exporting coconuts, arecanuts, salt, and other commodities. Salt, in particular, was a significant export due to its surplus production exceeding local demand. Goa boasted excellent salt manufacturing facilities, making it a thriving and profitable local industry. It was exported via land, river, and sea routes to various parts of the Indian subcontinent and even to distant countries both to the west and east of India.[52] In the fishing industry, locally produced salt played a vital role in preserving surplus fish. During the 16th century, Goa, which included Goa Island, Salsete, and Bardez, was known as a thriving commerce center. Despite this, agriculture was the main source of income for the majority of population, followed by horticulture, fishing, and salt manufacture.[53]

As the Portuguese maritime commerce declined in the 17th century, earnings from inland trade with mainland India, also known as "Rendas," became the dominant source of governmental income in Portuguese India. Salt remained an important export commodity in trade between Goa and India's interior areas, allowing for the exchange of important supplies for the Goan population as well as products for seaborne trade to Europe. Riverine waterways provided key supply channels for traders shipping salt, coconuts, and betel nuts. [54] Portuguese India traded salt and local commodities with the Canara region, but also

[52] Nagvekar, "*A Study of Goa's*," 84.
[53] Nagvekar , "*A Study of Goa's*, " 84.
[54] Teotonio, R. De Souza, *Goa to Me,* (New Delhi: Concept Publishing Company, 1994), 38.

imported horses, copper, quicksilver, vermillion, coral, and lead from Portugal and other nations. [55] Goa gradually paid for imports from Canara with locally produced items, mainly salt.

During the 17th century, Portuguese India suffered economic hardships as trade declined. To compensate, they used salt exports to pay for imports. Recognizing its value, the Portuguese government endeavored to expand the commerce of Goan salt. The Portuguese government sought to expand the trade of Goan salt into adjacent territories and distant locations. However, Shivaji's construction of a salt monopoly in his territory, particularly with salt depots in Manneri and Fatorpa near Portuguese Goa, posed a considerable challenge. This monopolistic control restricted the delivery of Goan salt, causing the Portuguese government to respond. [56]

In retaliation, the Portuguese government enforced measures directed at Maratha fisherfolk operating in the rivers of Chapora or Aldona. These fishermen were forced to acquire all of the salt they needed for salting their catch in Goa rather than at their own depots. This repressive measure intended to undercut Shivaji's monopoly while protecting Portuguese interests in the salt trade, demonstrating the complex dynamics of economic competition and geopolitical diplomacy during this time. This example shows how economic pressures and competitiveness in the region impacted trade dynamics during this time.[57]

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[55] Celsa pinto, *Trade and Finances in Portuguese India,* (New Delhi: Concept Publishing Company, 1994), 219-220.
[56] Tentonio R de Souza, *Medieval Goa: A Socio- Economic History, (*Saligao*:* Broadway Book Centre, 18.
[57] De Souza, *Medieval Goa,* 18.

As Goa's prominence as a commercial hub diminished, its economy deteriorated since farming was primitive and there were few factories aside from salt production. Besides salt, only coconuts, arecanuts, and a few other things were produced in sufficient quantities. Still, Goa continued to supply salt, coconuts, arecanuts, and other indigenous items to the mainland. This demonstrated that, despite Goa's struggling economy, it continued to play an essential role in delivering goods to other regions.[58]

During the 17th and 18th centuries, Goa's trade dynamics with mainland regions, particularly Kanara, were defined by the interchange of important commodities including salt, coconut, and arecanut. Despite facing economic hardships, salt evolved as an important export item for Portuguese India, boosting trade relations and greatly contributing to Goa's economic well-being. This trading relationship was best demonstrated by the rice-for-salt exchange, in which Portuguese India relied on annual rice supplies from Kanara in return for significant amounts of salt. Even during periods of economic depression, salt remained a cornerstone of Goa's foreign trade, demonstrating its long-term importance to the region's economic recovery and commercial viability. The salt produced in Goa was of higher quality than that of Kanara. Although Kanara produced salt, it relied on imports from Goa and Sind to meet its needs.[59]

Despite efforts to reduce economic crises, particularly in the 18th century, Goa's trading landscape maintained its dependence on salt as a critical export item. Despite the obstacles faced by the Goan economy, salt commerce remained critical to the continuation of commercial activity and the strengthening of external trade contacts. This ongoing

[58] Nagvekar, "*The Salt Industry*," 87.
[59] Nagvekar, "*The Salt Industry*," 98.

relevance of salt highlighted its vital role in Portuguese India's broader economic policies, acting as a source of consistency in the face of changeable economic situations and significantly contributing to Goa's financial stability during this time.

In 1836, a liberal government in Lisbon formally ended the slave trade. During this time, Goa developed strong trading ties with Bombay, Kanara, and Malabar. Ports in Malabar and other parts of Kerala exported copra, coconut oil, cashew, teak wood, and textiles to Goa, while Goa exported large amounts of salt to these areas, highlighting its status as a key salt provider in the region at the time.[60]

During the latter half of the 19th century, primary exports from Portuguese Goa comprised coconut, betel nut, mango, watermelon, jackfruit, and various other fruits, alongside cinnamon, pepper, salted fish, gum, coir products, firewood, poultry, and salt. Among these commodities, coir work, salt, and fish represented the three major industrial activities of the era. Additionally, spirits, salt, and tobacco were exported from Goa to Bombay during this period.[61]

Despite the Portuguese's preference for sea-borne trade, trade in rice, coconut, arecanut, betel, and salt remained unabated. Goa exported betel nuts to Aden, Ormuz, and Bombay, as well as rice and salt. During the summer months, caravans from Bardez went out to get these goods, exchanging them for salt that surpassed local consumption standards.[62]

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[60] N shyam Bhat, "Trade in Portuguese Goa: The 19th Century Scenario." Proceedings of the Indian History Congress, 61, (2000): 867.
[61] Bhat, Trade in Portuguese, 867.
[62] Nagvekar, "The Salt Industry," 77.

Goa's economy thrived thanks to its ability to produce and export a variety of goods, including salt. Salt was a major player in this economic landscape, being both exported and used locally to preserve fish. Despite facing ups and downs, Goa's economy remained resilient, with salt playing a crucial role in maintaining stability and facilitating trade with neighboring regions and far-off countries.

In Goa, when Britishers took over the salt industry, the amount of salt allocation for public consumption was limited to 14 lbs per person per year. This amount was insufficient, forcing many households to turn to alternative ways, such as collecting salt from seawater or silt discovered in inundated paddy fields. Given the need to meet their fundamental domestic salt requirements, households turned to these measures, as salt was consumed in plenty within households.[63]

Over the centuries, salt production and trade in Goa kept the economy going strong, even as other industries fluctuated. From the 16th to the 19th centuries, salt remained a reliable source of income and played a key role in sustaining Goa's commercial activities. Despite changes in trading partners and economic conditions, salt continued to be a vital part of Goa's economic story, showcasing the region's adaptability and enduring importance in the global marketplace.

2.5 Socio-Economic and Religious Important of Salt

Salt holds significance place in customs and ceremonies across cultures for various reasons. It represents purity, permanence, and preservation. In diverse cultures, salt is used in rituals related to loyalty, friendship, religious practices and soon but in custom and ceremonies it

[63] Marmugao Port Trust, History of Marmugao Port, 15.

plays very important role. Bread and salt are frequently associated as a blessing and a means of preservation. The custom of presenting salt and bread when entering a new home has its roots in the middle Ages within Jewish tradition.[64] In the Jews tradition there is also a custom wherein on every Friday night, Jews salt their Sabbath bread (Sabbath is a day of religious observance and abstinence from work, kept by Jewish people).[65] In Judaism, bread represents food, which is a gift from God, and dipping it in salt preserves it from bacteria.[66] In ancient Egyptians, Greeks, and Romans used salt in Sacrifices and offerings, and called upon gods with salt and water, which is regarded to be the source of Christian holy water.[67] In Christianity, salt is connected with life and stability, as well as truth and wisdom.

For years in Britain, the tradition of bringing bread was abandoned by the British but continued to carry salt when moving to a new residence.[68] Even now, various ceremonies in India emphasis the importance of salt. The Punjabis were opposed to throwing away salt and believe that if they toss it away or waste it by combining it with soil, they will have to raise it with their eyelashes in the afterlife.[69] To escape bad luck after spilling salt in Pennsylvania, it was tradition to not only toss a pinch over the left shoulder, but also crawl under the table and emerge on the other side.[70]

Salt has held immense economic importance throughout history. There was a time when humans valued salt as much as precious mineral and oils. Salt was frequently exchanged

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[64] Kurlanksky, *Salt A World,* 07.
[65] Kurlanksky, *Salt A World*, 08.
[66] MacGregor & Wardener, *Salt Diet & Health*, 10.
[67] Kurlanksky, *Salt A World,* 08.
[68] Kurlanksky, *Salt A World*, 09.
[69] Aggarwal, *The Salt Industry*, 02.
[70] MacGregor & Wardener, *Salt Diet & Health,* 11.

'Ounce for Ounce' for gold.[71] In ancient Greece, salt was used to purchase slaves.[72] It was considered a sacred commodity by the Greeks and was used as part of gifts to the gods.[73] In ancient and modern times, government often controlled the salt trade, making it a state enterprise. During the middle Ages, government had a monopoly on salt, considering it a reliable source of revenue due to its essential nature. In the 9th century A.D., certain eastern countries even established salt as a government monopoly, emphasizing its economic significance comparable to other commodities.[74] Thus, the social, cultural and religious ideas and attitudes of ancient civilization reveal the economic significance of salt.

Salt is also highly valuable in agriculture. It has long been used as agricultural manure. Because salt prevents deterioration, it shields against damage. Farmers in northern Europe learned through the early middle Ages to soak their grain harvest in salt brine to protect it against a terrible fungal disease known as ergot, which was poisonous to humans and livestock.[75] The Anglo-Saxon farmers included salt among the magical items placed in a hole in the plough as they invoked the name of the earth goddess and prayed for "bright crops, broad barley, white wheat, shining millet…."[76]

It was employed as chemical manure long before the Christian era, and its importance was known throughout Europe. Over 2,000 years ago, the ancient Hebrews used it as fertiliser in Palestine; The antique Romans also used it as "manure." Salt improves digestion, which

[71] Aggarwal, *The Salt Industry*, 02.
[72] Aggarwal, *The Salt Industry*, 02.
[73] Aggarwal, *The Salt Industry*, 02.
[74] Verrips, Jojada. "Religion under Water." *Etnofoor* 27, no. 1 (2015): 75–88.
[75] Kurlanksy, *Salt A World*, 08.
[76] Kurlanksy, *Salt A World*, 07.

increases nutritive in plant tissue and has a healthy stimulating effect on them, restoring their health.

Salt is repulsive to evil spirits. To safeguard the actors from evil spirits, salt was thrown on the stage before each traditional Japanese theatre performance[77]. The putting of salt over entrances prevented bad spirits.[78] In Haiti, In the only method to break the curse and return a zombie back to life is to use salt. In regions of Africa and the Caribbean, it is believed that bad spirits disguise themselves as women who shed their skin at night and roam through the night like balls of fire. To kill these spirits, their skin must be discovered and salted so that they cannot return to it in the morning. In Afro-Caribbean culture, Salt's ability to break curses extends beyond evil spirits. Both Jews and Muslims believe that salt can protect against the evil eye. The Book of Ezekiel discusses rubbing newborn children with salt to protect.[79]

The usage of salt to prevent from the evil eye arose from the notion that the devil was afraid of salt. According to the tradition, the Devil's tail was once severely burned after being exposed to salt. He screamed in pain and chewed off his tail for relief, a he could not tolerate salt. Japanese Sumo Wrestlers continue to sprinkle a generous amount of salt on the ground where they compete in order to keep off evil spirits.[80]

2.6 Method of Salt Production

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[77] Kurlanlsky, *Salt A World, 07.*
[78] Conner, M.Shelly. "The Uses of Salt." *Obsidian* 41, no.1/2 (2015):177-90.
[79] Kurlanksky, *Salt A World*, 07.
[80] MacGregor & Wardener, *Salt Diet & Health,* 11

Salt production is an important aspect of India's resources management, with unique processes customized to different terrains. Different methods are employed depending on the weather, location and technological advancement. In places like the Western Hemisphere where long dry spells are rare, salt is obtained by mining salt deposits or evaporation artificial brine. In tropical areas with extended dry periods, salt is produced using solar evaporation of sea water or natural brine. Evaporation is a common technique in coastal places such as Goa, where sea water evaporates naturally to produce salt crystals. In contrast, inland regions engage in rock salt mining which includes removing salt from subsurface reserves and purifying it afterwards. Thus, Common salt can be generated using variety of processes including

a) Sun evaporation of sea water, natural brine from lakes or wells or brine derived by lixiviation of salt soil.
b) Artificial evaporation of brine in open pans using direct fire, steam or vacuum evaporators.
c) Mining rock salt either dry or as saturated brine by injecting water via tubes buried into salt formation.
d) Freezing sea brine to become saturated and separates the salt.

a) Solar evaporation – Historically, seawater evaporation was the primary source of salt used in commerce. It is the earliest method of salt manufacturing and requires warmer conditions. The inhabitants were aware of the process of entrapping seawater by blocking off flooded areas during high tides right before

the dry season[81]. Right from Vedic period, Indians were aware of this process. The seawater was carried through a series of evaporating ponds before being extracted into salt crystals[82]. In India solar evaporation is most extensively used method of extraction of salt. China is also producing salt using solar evaporation. Solar evaporation of sea water is used to extract salt in France, Italy, Portugal, Spain and the United States. Approximately 75% of India's total salt production comes from seawater evaporation.

b) Artificial Salt – Artificial heat is used to concentrate and evaporate brines in countries such as England, Germany, the United States, and other due to their inability of producing salt through solar heat. Artificial brines are produced by pumping water into wells drilled into beneath salt beds, resulting in an aqueous salt solution.

c) Mining Rock- The ancient people was well aware of the technology for obtaining salt from rock salt beds. Even before 300 B.C. people in northern India mined salt from salt deposits. Today, this method can be obtained by dissolving it in specially drilled wells and processing the resulting brine, similar to natural brine. Rock salt is mined in several nation, including the USA, France, and Pakistan. Pakistan's Punjab Salt Range is home to some of the world's most abundant rock salt reserves. Rock salt deposits are located in Mandi, Himachal Pradesh.

[81] Nagvekar, "A Study of Goa's," 18.
[82] Nagvekar, "*A Study of Goa's,"* 18.

d) Freezing sea brine – Result in saturated brine and salt separation, this method of production is followed the countries like North Europe with very cold climate.

Salt production is a diverse and important part of resource management that is adapted to the specific conditions of each place. To supply the demand for this essential mineral, many technologies are used around the world, including sun evaporation of seawater, artificial brine evaporation, rock salt mining, and sea brine freezing. Each method has historical roots and is designed for local climate and technology conditions, demonstrating human civilization's skill in harnessing natural resources.

CHAPTER 3: SALT PRODUCTION IN PERNEM TALUKA: A HISTORICAL OVERVIEW

3.1 Introduction to Pernem Taluka's Salt Industry

Pernem, situated as the northernmost district of Goa, was the last taluka to be annexed by the Portuguese. The acquisition of Pernem from the Bhosale of Sawantwadi occurred in 1788, following a protracted dispute that commenced in 1781 and concluded seven years later.[1] Known as "Pedne" in both Konkani and Marathi, Pernem was characterised by the Portuguese Governor Dom Federic Gui-lherm as a vital defensive barrier, shielding Bardez from Potential external threats.[2] Pernem covers an area of 249.17sq.km and is bordered by to Tiracol River or Arondem village to the north and to Chapora River or Colvale village to the South. It shares its eastern and northern boundaries with the Sawantwadi. To the west, the Arabian Sea serves as the natural boundary for Pernem, Signifying its role as the gateway to Goa from Maharashtra.

Pernem's salt pans were located on the banks of both the Chapora and Tiracol rivers. In 1960, the saltpan area in Pernem covered 18.0232 hectares, accounting for 4.5% of entire land area in Pernem Taluka.[2] The salt produced in the region became so well known that in 1687, the Goan authorities refused the Maratha subhedar's request to

[1] S.k.Mhamai, "Recalling Pernem Grandeur," *The Navhind Times*, 4 August, 1984, 01. [2] Mhamai, Recalling Pernem Grandeur, 01.

[2] Statistical Year Book 1969, Governnment of Goa, Daman and Diu, panjim, 79;Teotonio R de Souza, Goa Through The Ages Vol.II An Economic History, (New Delhi: Concept Publishing Company, 1990), 272; National Council Of Applied Economic Research, Techno Economic Survey Of Goa Daman & Diu, New Delhi, 1964.

transport it via the kaissua and Colvale rivers.[3] To deal with economic decline, Portuguese India imposed extra taxes including a commodities tax on variety of goods. Tax was levied on variety of commodities, including salt. The tax was levied on all four talukas, namely Tiswadi, Salcete, Bardez and Pernem. As a result Pernem made substantial contribution to Goa's economic development and growth during numerous years in the twentieth. In 1825, Pernem salt production accounted for 1.6% of Goa's entire output demonstrating its importance in the region's economy. [4]

Pernem emerged as the only concelho involved in salt production in the new conquest in 1824, yielding 124 kumbha, which dropped to 122 kumbha in 1825. During these years, the cost of salt per unit in pernem was 8 xerafins.[5] By 1876, Goa had seen a greater involvement in salt production, with 36 villages producing a total of 386 salt pans. Pernem contributed to 21 salt-producing salt pans accounting for 5.5% of total salt pans and 2.8% of Goa's entire salt production.[6]

Pernem's historical significance within Goa's economic framework is evident, particularly in its role as a strategic outpost and a pivotal link between Goa and Maharashtra. The acquisition of Pernem by the Portuguese in 1788 was a decisive move, solidifying its position as a vital defensive barrier and a gateway facilitating trade and connectivity. The salt pans along the Chapora and Tiracol rivers emerged as key economic assets, with salt production becoming a hallmark of Pernem's economic identity. Despite facing economic challenges, such as additional taxes imposed by

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[3] Teotonic D'Souza, Medieval Goa: A Socio- Economic History, New Delhi: Concept Publishing Company, 1979.
[4] Nagvekar, "*Salt and the Economy*,"112.
[5] Nagvekar, "*Salt and the Economy*," 147.
[6] Jose Nicolao de Fonsec, "*An Historical And Archeological Sketch of the City of Goa,"* New Delhi, Reprint by Asian Educational Services, 1986, 25.

Portuguese authorities, Pernem's salt industry persevered, making substantial contributions to both the local economy and the broader economic development of Goa.

Throughout its history, Pernem's involvement in salt production underwent significant evolution, transitioning from being the only concelho in the new conquest engaged in salt production in the early 19th century to becoming one of the contributors to Goa's salt production by the late 19th century. This growth trajectory underscores Pernem's enduring significance within Goa's salt industry and its broader economic landscape. Pernem's legacy as a center for salt production highlights the resilience and adaptability of its inhabitants, as well as their pivotal role in sustaining Goa's economy over the centuries.

3.1.1 Statistical Data of Salt Production in Pernem Taluka under the Treaty 1880-1891

Year of The Treaty	No. of Salt Worked	Production in Indian Mound
1880	15	114.430
1881	19	28.434
1882	19	26.572
1883	18	26.237
1884	12	23.638
1885	17	26.911
1886	17	20.844

1887	16	28.530
1888	17	20.631
1889	19	26.712
1890	17	22.955
1891	16	22.006

Source: Pinto Celsa, Goa Image and Perception, Panaji: Rajhauns Vitaran, 1996, 130.

3.2 Salt Makers of Pernem Taluka

Goa's salt manufacturers, known locally as "khazan" farmers, have a long history that is deeply rooted in the coastal region's culture. These artists use a unique form of salt manufacturing in which interconnected ponds and canals harness seawater during high tides, allowing it to evaporate naturally and leaving behind salt. This historic method, distinguished by its environmentally friendly approach and harmonious coexistence with coastal habitats, has survived for generations.

In the early history of Goa, the entire community depended on natural salt for sustenance. With the introduction of refined salt, its usage became widespread among individuals. The process of extracting naturally occurring salt was traditionally carried out by various social groups known as jatis in Goa. Presently, descendants of these old salt pan workers can be found in communities across different parts of Goa. Historically, there were five main communities engaged in salt production in Goa: the

Mithgavada, Gauddis, the Agris, Bhandari and Agers.[7] The individuals involved in salt production either own the salterns or work for one of these communities.

In Pernem, there exists a community known as Mithgaudas, who are engaged in the practice of salt making. Similarly, in Maharashtra, they are referred to as Mithgavada.[8] The ancestral group of the Mithaguda community, referred to as ' Shamans', were the pioneers of the salt making craft. Community known as Mithgaudas is a subgroup within the Gauda community craft. According to the Gauda community, the term Gauda refers to the villagers. It is from them the Mithaguda community learns the art of salt making. The term 'Mith' in the local vernacular denotes salt. Consequently, the nomenclature of the community suggests an occupation associated with salt production.[8]

The Mithgaudas are primarily self-employed, frequently owning their own salt pans and employing landless people from their community. Family members, including women and children, frequently assist in salt manufacture and agricultural activities. This community shows the generation-to-generation transfer of salt farming knowledge among its members.[9] The Mithaguda Community claims a higher social status, identifying as Kshatriyas. In Maharashtra, they inhabit regions such as Malvan, Vengurla, Deoghar Sawantwadi, and Kudal within the coastal Sindhudurg district. In Goa, their predominant settlement is in the Pernem, adjacent to Sindhudurg. They

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[7] Reyna Sequiera, *As Dear as Salt,* (Saligao: Golden Heart Emporium, 2013), 61.

[8] Sequiera, *As Dear as,* 2013, 61.

[8] Harischandra Tucaram Nagvekar, "*Salt and the Goan Economy (A Study of Goa's Salt Industry and Salt Trade in the 19th and 20th Centuries During the Portuguese Rule),*" (Ph.D diss.,Goa University, 1999), 52.

[9] K.S.Singh, *People of India: Goa vol XXI* (Bombay: Anthropological Survey of India, 1993), 164.

believed to have migrated from the Konkan belt in Maharashtra; they maintain connections with their roots. The Mithaguda community communicates primarily in Konkani and Marathi and writes in the Devanagri script, serving as their mother tongue.[10] In the past, the people in these communities relied solely on salt production as their primary source of income. As profits rose and the Portuguese emphasized the significance of salt production, more individuals with access to coastal lands began engaging in salt production. Additionally, salt pans created job opportunities for migrant workers from neighboring states. As a result, after Goa's liberation, the majority of skilled laborers came from outside Goa to conduct all of the work linked to salt making and thereby seeking jobs in salt production.

According to K.S. Singh, the Mithaguda community in Maharashtra identifies itself as part of the Maratha community and emphasizes its distinction from the Gauddas of Goa. In his work, there is a notable absence of mention regarding the involvement of the Gauddis, Bhandari, Agri, and Ager castes in the salt pans along the coast of Goa. Instead, Singh primarily focuses on the participation of the Mithaguda community in this occupation.[11] Presently Mithgavada were situated in the Aggarwado, korgao, and in Arambol.

Thus, Mithgavada holds significance due to its historical and cultural contributions, particularly in the realm of salt production. The community's ancestral knowledge and practices, such as those pioneered by the Shamans, have played a crucial role in shaping local economies and providing livelihoods. Additionally, Mithgavada's role in salt

[10] Sequiera, *As Dear as,* 63.
[11] K.S. Singh, *People of India, Goa* vol. XXI, (Bombay: Popular Prakashan, 1993), 162.

production has likely influenced regional trade dynamics and cultural exchanges, making it an integral part of the historical and socio-economic fabric of the area.

The Mithgavada community's role in Goa's salt producing business is inexorably linked to the region's cultural heritage. They have maintained a harmonious interaction with the coastal environment by using unique salt making processes passed down through centuries. Historically, the Mithgavada community, along with other social groups, played a vital role in salt production, with their ancestral expertise promoting the industry's growth. This group, which is mostly self-employed and owns salt pans, has not only preserved traditional customs but also created livelihood options for landless people in the community.

Furthermore, the Mithgavada community's presence extends beyond Goa, with significant settlements in Maharashtra's coastal regions. Their cultural identity, based on Konkani and Marathi traditions, symbolizes their historical migration and ongoing connections to their roots. Despite changes in economic dynamics and the arrival of migrant laborers, the Mithgavada community remains integral to Goa's salt production scene, embodying a rich combination of historical, cultural, and socio-economic contributions to the region.

Salt Pans in Pernem Taluka

Agarvado

Corgao

Palivem

Arambol

Mandrem

Fig 3.3 Source: Google Map

3.3 Salt producing villages of Pernem Taluka

The salt extraction industry has long been a significant aspect of Pernem's economic landscape, with its roots extending deep into the region's history. In particular, five villages within Pernem Aggarwado, Korgao, Arambol, Palyem, and Mandrem have played pivotal roles in salt production, serving as hubs for this traditional craft. While Arambol, Palyem, and Mandrem are no longer active in salt extraction, Aggarwado and Korgao continue to uphold this centuries-old tradition. This essay explores the historical significance of these villages in Pernem's salt extraction industry, shedding light on their contributions to the region's economy and cultural heritage.

3.3.1 Aggarwado village

Agarwada, located near the Arabian Sea on the north bank of the Chapora river. It covers 22.1 hectares in Pernem taluka in North Goa and is located a short distance from the Arabian Sea. It holds historical significance as one of the ancient salt production centers.[12] Its name is derived from "mithagar" or "mithache agor," the local term for the salt pan.[13] Mandrem, Parcem, and Morjim are the surrounding villages of Aggarwado. The village is divided into eight wards known as "Vaddos," namely Bagglivaddo, Rautvadda, Naikvadda, Damajivadda, Maharvaddo, Madhlavaddo, Pokhrevaddo and Bethkolvaddo. Salt producers sell their salt at the nearest weekly markets, which are held in Siolim on Wednestday and in Pernem town on Thursday. [14]

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[12] Nagvekar, "Salt and the," 45.
[13] Bhakti Salgaonkar, Judith M. Braganca, B. B., Das, K. Mani, "Community solar salt Production in Goa, India*", Research Gate*, 3 April, 2014.
[14] Sequiera, *As Dear as,* 79.

The village of Agarwado comprises three distinct geographical sections: the dongor (hill), characterized by cashew plantations; the Madhlo baag (plain area), predominantly inhabited by the Mithguda community; and the khailo baag (lower lying areas), which are home to a small number of Christian families.[15] During Portuguese rule, Agarwada's salt was a significant export, and even today, it is renowned for being the purest, with minimal silt and sand. The village's riverine estuaries, convenient access to seawater, and favorable climate make it an attractive location for salt production, especially during the summer.[16]

In Agarwado, families like Raut, Bagli, Naik, Nagvekar and Korgaonkar historically engaged in salt extraction. Before the arrival of the Portuguese, salt production thrived in Goa across various regions including Goa Island, Bardez, Salsete, and Pernem. These areas continued to serve as key centers for salt production in the following centuries. While the trade network was extensive during the Portuguese rule, today, only local trade occurs. Over time, only 5 out of 16 salt pans remain operational, with 3 taken over by hotels. Challenges such as low income, high labor costs, unskilled labor, neglect of traditional methods, negative perceptions of local salt, and unpredictable weather contribute to the decline of salt pans in Agarwado.

3.3.2 Korgao village

Korgao is situated in the northern part of Pernem taluka, along the banks of the

[15] Sequiera, *As Dear as,* 80.
[16] Keshav Naik, "Salt of the Hearth," *Times of India,* May, 2013.

Terekhol river. It covers an area of 2208.55 square kilometers and is bordered by Arombol, Palyem, Parcem, Pernem village, and the Terekhol river. Korgao hosts its weekly market every Saturday and comprises eight Vaddos (wards). Geographically, it can be divided into three sections: the hill, the plain areas known as Madhlo baag, and the lower lying areas called khailo baag where mithaguda resides. Mithaguda settlers in Korgao historically engaged in salt production, and today these salt pans is considered as one of the oldest surviving salt pans in Pernem taluka. [17]

These salt pans, established around 50 years ago, and today it cover approximately 1500 square kilometers and are sustained by water from the Terekhol river. Currently, there are 26 bunds within these salt pans, previously managed by 14 salt producers through a system of bhatkar and munkar.[18] The produced salt was distributed both within Korgao and to distant areas outside the village.

3.3.3 Arombol village

Arombol village, situated along the Arabian Sea coast, spans an area of 966.00 sq. km and is neighbored by Koragao, Mandrem, and Palyem villages. It hosts a weekly market on Wednesdays and comprises 6 wards. Historically, salt production relied on water from both the mountains and the Arabian Sea, with salt pans situated in lowlying areas. The Gawade community was primarily involved in salt production. Despite once being a significant commercial and distribution hub, Arombol village stop producing salt after 2002. This shift marks a transition from its historical role in commerce and distribution, as evidenced by government initiatives dating back to 1880. In 1880, during the third

[17] Lobo, Alberto, "Development of Goa, The Salt Industry," *Goa Today*, May-June, 1967.
[18] Nagvekar, "*Salt and the*," 66.

year of a treaty, the government established two additional ‘Estancos,’ which served as public distribution centers acting as warehouses. These centers were established in Betim (Bardez) and Arambol (Pernem), reflecting governmental initiatives to facilitate distribution and storage of goods.[19] The switch from salt production represents a transformation in the economic and social landscape of these villages, with negative consequences.

The villages of Agarwado, Korgao, and Arombol in Pernem Taluka have played important roles in the history and practice of salt manufacturing in Goa. These settlements, with their advantageous geographical placement near rivers and the Arabian Sea, have traditionally been sites of salt extraction, sustaining populations and contributing to Goa’s economy. However, obstacles such as deteriorating infrastructure, changing market dynamics, and environmental issues have resulted in a decrease in salt production in these settlements over time. Despite this loss, the cultural and historical significance of salt manufacturing in these settlements is noticeable, representing a rich tradition deeply rooted in the coastal region’s history.

3.4 Tools used in Salt Extraction

3.4.1 Petnem

Bund construction marks the initial step in salt extraction. Following water evaporation from the saltern, a tool called “petnem” is employed, measuring 1 meter in length with a flat front side, typically crafted from wood. Its purpose is to smooth the salt bed, known as “mero.” This smoothing process helps to evenly distribute the salt and create

[19] Nagvekar, “*Salt and the,*” 53.

a uniform surface, facilitating the subsequent steps in salt harvesting and processing. The flat front side of the petnem allows for efficient leveling of the mero, ensuring optimal salt extraction.

3.4.2 Sallan

This tool, known as ‘Sallan’, is used in the preparation of salt pan beds after draining the water. The process involves ploughing and leveling the beds by stamping or using the ‘saalon’ device. The ‘saalon’ consists of a long bamboo stick, about 4 meters in length, attached to a circular wooden base. Additionally, excess clay is gathered and placed onto the bunds, while borders for different pans are constructed using clay during this procedure. The tool known as ‘Sallan’ is employed for the daily layering of salt crystals. It features a long, flat structure and is utilized each morning for raking the salt. This process facilitates the extraction of a specific quantity of salt from the pans.

3.4.3 Daanto (tool with teeth)

The tool known as ‘daanto’ is utilized during the preparatory phase of salt production. The act of stirring the salt pans combines the marshy soil, known as “chikol,” with the seawater to facilitate the production of salt. Over a period of approximately 20-25 days, seawater in the evaporator and crystallizer pan is stirred repeatedly using this teeth-shaped tool. The ‘daanto’ comprises a long stick, around 4 meters in length, attached to a tool with teeth-like projections.[20] This stirring process aids in the evaporation of the water until complete, after which the pans are replenished with water. The purpose of

[20] Salgaonkar, Braganca, Das, Mani, “*Community solar salt,”* 03.

this procedure is to eliminate excess clay, which is then gathered and distributed onto the pan walls to further establish the salt pan beds.

3.4.4.Nivaddo (wooden khore to collect salt)

This tool, known as nivddo, is used in a process where brine with a salinity of 23–25 ºBé is transferred from the evaporator pan to the crystallizer pan every morning. In the crystallizer pan, the NaCl (salt) crystallizes out at around 27ºBé and is collected in the evening on a daily basis. Salt crystals are harvested using a wooden rake called a "foyem," which is a long stick (approximately 4 meters in length) attached to a wooden rectangular block (50–70 × 15–20 cm). The harvested salt crystals are piled into small heaps at the intersection of the pans for further processing.[21]

3.4.5 'Pattlo'

Once salt has accumulated, it is gathered using a wooden basket known as a "Pattlo." This basket is utilized to transport salt from the salt pans to storage sheds. Made of bamboo, the Pattlo features a circular shape, broader at the front, facilitating efficient salt collection and transportation.

Thus this tools and techniques used for salt extraction are critical to the process's efficiency and success. Bund construction is the first step, laying the groundwork for following activity. Petnem and Sallan are vital tools for leveling the salt bed and preparing the salt pan beds, resulting in an ideal environment for salt crystallization. The daanto is used to stir the salt pans, assisting in evaporation and the removal of unnecessary clay. Furthermore, instruments such as the nivddo and foyem make it

[21] Salgaonkar, Braganca, Das, Mani, "Community solar salt," 03.

easier to collect and harvest salt crystals, while the Pattlo basket speeds up the transporting of harvested salt to storage sheds.

These devices not only increase productivity, but they also demonstrate the creativity and resourcefulness of the salt extraction process. These devices not only increase productivity, but they also demonstrate the creativity and resourcefulness of the salt extraction process. Their application highlights the complex knowledge and skills passed down through generations, which shape the traditional salt producing processes in coastal locations. As salt extraction techniques evolve, these tools remain critical to the preservation of cultural heritage and the sustainability of salt production methods.

3.5 Different type of salt

The process of salt extraction is labor-intensive and relies on the hard work of individuals to produce different types of salt, including black, brown, white, and white-pink salt. Black salt extraction marks the beginning of actual salt production. Locally, this period is referred to as "*atta khai tari mith padpak survat jale,"* signaling the start of salt production. During this initial phase, which typically lasts from December to January for about ten days, crude salt mixed with impurities from the water and soil is obtained. While this type of salt is not suitable for consumption, it serves as an ideal agricultural resource.

Historically, in 1876, Pernem produced 8,440 khandis of salt, with 955 khandis being utilized as manure in agriculture.[22] Black salt, particularly beneficial for cashew, mango, and coconut plantations, was commonly employed as manure in agriculture,

[22] Jose Nicolao de Fonsec, “An Historical and Archeological Sketch of the City of Goa,” (New Delhi, Reprint by Asian Educational Services, 1986), 25.

especially during the cultivation of rabi and kharif crops. Brown soil is considered the second type of salt, typically obtained in the Agarwado region of Pernem. Its distinctive brown-white coloration results from the presence of water. The brown coloration occurs as a result of the convergence of brown water from the mountains with saline water in the saltern, where it accumulates and influences the soil's coloration. This type of salt is obtained subsequent to black soil production. Similar to black salt, brown soil salt is also well-suited for use as manure in agriculture. It is important to note that environmental factors play a significant role in determining the coloration of salt, underscoring the influence of natural processes on salt production.

After producing black and brown salt, the purest form of salt is obtained: white salt. This high-purity salt is manufactured under extreme sun heat conditions. Unlike black and brown salt, which are mostly used in agriculture, white salt is intended for human consumption. Its purity and clarity make it ideal for a variety of culinary and home uses. As a result, this salt is considered to be of the highest grade. The sequential method of salt manufacture, beginning with black and brown salt and ending with white salt, emphasizes the refinement and purification of the salt as it moves through the various stages of production.

3.4 Process of salt Making

The salt making in Goa go through three main phases: the monsoon phase, the preparatory phase, and the harvesting phase. During the monsoon phase, which starts with the onset of the rainy season, rainwater fills the salt pans, keeping them water logged from June to September. Because Goa receives heavy rainfall and is near the sea or in estuaries, the salt pans become suitable for breeding fish, shrimp, and prawns.

After the monsoon, the salt pans are drained using motor pumps to prepare them for salt harvesting.

During the preparation phase, which occurs from December to January, the construction of salt pans begins. Initially, the fields submerged during the rainy season are drained of water using "*bhom"* (motor pump). Workers then proceed to construct the pans by inserting a large pipe where water enters from external reservoirs to internal reservoirs and then to the salt beds due to gravity. The salt pans are built with a gentle slope to allow water to flow naturally from an external reservoir into the salt beds due to gravity. Then, bunds (embankments around the salt pans) are built around the pans using a tool called "*fhor*" (tool used to form the bunds) in the local language. These bunds help to keep the water inside the pans, aiding in the salt extraction process.[23]

The next step in pan construction involves building bunds, called as "*mero*" (ridge, or a boundary for making the rectangular plot). This task is done using a wooden tool called the "*petnem*" (a tool used to flatten the ridges). Two people prepare the bunds with a tool called a *fhor* which is called as *fhor marta* (building a bunds). A third person smoothens the bunds into a particular shape; call *poshevop* (shaping the bunds into a specific form).The quality and quantity of salt produced are dependent on the transparency and cleanliness of the flooring.[24]

To prepare the salt bed, excess mud is removed with a *fhor,* and the bed is hardened through repeated puddling with feet, known as *guddavap,* (precessing and compacting the bed to ensure it is level and firm)lasting 10 to 15 days based on the consistency of the *chikol* (mud). During leveling of the pans, extra clay like soil is removed using the

[23] Sequiera, As Dear as, 64; Nagvekar, Salt and the, 1999, 55; Salgaonkar, Braganca, Mani, Das ,Community Solar Salt, 2012, 03.
[24] Sequiera, As Dear as, 66.

fhor. This process is known as "*daanto martai*". The *chikol* is referred to as *"Kunwanwo*", which are mud balls extracted from the bottom of salt pans. These mud balls are used as fertilizer for coconut trees. The soil extracted is compressed and leveled while getting the land ready for salt farming, ensuring a smooth and uniform surface. Due to its clay like nature, the soil retains water well. A tool called *"nivddo*,"which is a plank with slightly smaller teeth, is employed to level the salt pans effectively. [25]

Salt farming begins by dividing low-lying lands near estuaries, which are subject to tidal cycles, into sections bordered by carefully built bunds. The parts are then filled with water from the estuary. After the beds are leveled and compressed, saline water is allowed to flow in. Solar evaporation of this water is crucial for salt manufacture, which necessitates a continuous supply of saline water from tidal backwater. The amount of salt in water, known as brine, is critical to the process. Water is moved from one segment to another, with the third section serving as vast reservoir known a "*tapovanim*".[26]

The more extensive the surface area of the tapovanim used for heating water, the higher the amount of salt produced. Typically, the ratio of *tapovanim* area to salt pan area is 70:30. The initial bed where water is introduced is also known as *caaw, caal, maatho or taat* (the first bed water is let into) where water is up left to get heat. The saltwater is heated by the sun and begins to evaporate. Once sufficiently heated in the first bed, it flows into the next bed through a narrow inlet called *dau* (narrow inlet), and then into the third bed known as antni (third bed). From there, the heated water is channeled through a narrow passage called *paall* or *pau* into the *pikeche agor*.[27]

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[25] Sequiera, As Dear as, 66.
[26] Nagvekar, Salt and the, 56
[27] Pantaleao, Fernandes. Goa Remember. (Pune: The Word Publication, 2015), 15.

It typically requires approximately 22 days of regular stirring and leveling of sandy clay or loam, along with the natural process of evaporation. During this process, a tool called *daanto*, equipped with wooden teeth, is used to mix the clay like soil, resulting in a frothy layer known as *Saai*, which contain a thin layer of salt crystals. Following this, a smaller tool called *nivddo* is employed to smooth and level the salt pan.[28]

Salt from the previous year's harvest, stored in the *mangor* or *khop* (hut for storage), is scattered onto the layer of *saai* that forms on top of the saturated brine. Sometimes, it's required to sprinkle salt two or even three times to ensure proper seasoning. Everyday water from the first bed is directed into the second bed, then into the third bed, and finally into the *Pikache agor* (salt producing salt pans). As the sun's heat varies, the water evaporates by evening, leaving behind white salt crystals for harvesting. These crystals are formed by gently pulling a rectangular wooden plank, approximately 80x20 cm in size, attached to a five meter long bamboo stick.[29]

Following the salt harvesting process, the area is dried, known as *agor bhattiek sukhounk dovortai,* and water is let in for 4 to 8 days to allow the salt to harden. Then, it undergoes a process called *bhauri,* where it is rapidly and swiftly whirling or rotated with a *fhoem.* Salt crystals are gathered using a shovel and washed with brine water. The collected salt is temporarily held at the intersections of the four bunds in some villages, or in the center of the bunds in Agarwado.

Newly form salt crystals are left overnight to dry and then into large heaps using bamboo baskets called *"Pattlo*" or *"Pahllo"* near the salt pans, in an area called the *"fhoear".* This process is repeated daily, taking about five hours for the salt to form.

[28] Salgaonkar, Braganca, Mani, Das, Community Solar Salt, 2012, 03.
[29] Fernandes. Goa Remember, 2015, 15.

The salt is then purified by washing it with concentrated brine to remove impurities. The crude salt obtained is then placed in bamboo basket called *"uttorni" kaddop"* and dumped into heaps on the bund. Afterwards, the salt is transferred to the *"Khop"* a storage facility made of palm leaves exclusively for storing salt pans or in the market. In Agarwado, this storage facility is known as *"Mangor"*.

Salt extracted during the initial days of the season contains impurities such as sand and muds particles, making it unsuitable for food consumption. Instead, it is utilized as manure for coconut trees, for preserving dry fish, or as an input in chemical factories located in industrial estates.

3.7 Life of Salt Pan Producers

The life of a salt pan manufacturer can be difficult and often involves hazardous working conditions. Salt producers, notably those from the Mithgauda community, work tirelessly to extract salt, frequently beyond their physical limits. This dedication is visible in the massive salt heaps found in salt pans found along the salt pans in Pernem taluka.

Salt workers in Agarwada often start work following the monsoon season. Additional workers are hired during the initial step of salt preparation. These hired workers are from neighboring areas. Workers conduct jobs autonomously throughout the rest of the salt extraction process. Work usually begins between 7 a.m. to 12 p.m. and 2 p.m. to 6 p.m. This schedule was depicts the distinctive working hours and customs of salt workers in Agarwada, stressing the evolving dynamics.

From December to March, salt producers devote their entire life to this work, with no other career options. Men are largely responsible for preparing the salt beds, but

women's assist their husbands with their tasks. Mithaguada men are responsible for tasks such as digging and leveling the ground by breaking up the soil with hired laborers. Women typically engage in simpler tasks such as filling the salt and collecting broken shell fragments "*shimpi"* from the saltpans. They also perform tasks like removing impurities such as "*shello kadap*" and "*shipio ani gunne kadap"*. Additionally, women often carry the salt on their heads to transport it.[30]

3.7.1 Distribution of wages

In the pre-Portuguese and Portuguese eras, workers working in salt pans received wages commensurate with their work, and salt pan owner had to save their income for the following season. However, today, the income earned by salt makers barely covers their families' basic needs. Salt producers in the Pernem taluka engaged in salt production for only five months from January till late March, annually due to its seasonal nature, leaving them unemployed for the remaining seven months. Sometimes, one family member may produce salt while another works in cashew plantations, while other engaged in agriculture activity. During the monsoon season members of this community engaged in rice cultivation as their main source of income.

Additionally, the emergence of alternative source of income, such as tourism-related business activities, contributed to the economic growth of these communities. Many members of the Mithguda community, situated along roadsides, have started their own shops and offer their homes for rent to tourists, boosting their economic activity.

3.7.2 Occupation preference among the new Generation

[30] Sequiera, *As Dear as*, 118.

The tradition of salt making is passes down through generations. However, many young people today prefer cooperative jobs instead of, working in hot weather. Some Mithguda community members want their children to become doctors or engineers, but, others want them to continue the family tradition of salt making, which has been passes down for generation.

3.7.3 Dress and Cultural tradition of the Mithgauda Community

Member of this community do not have specific attire for identification. Typically, men wear dhoti and shirts, while women wear sarees and blouses. Women often cover their head sand forehead with their sarees in the presence of men. They adorn themselves with bangles of different colour and wear silver finger and toe rings. Widows choose not to wear green bangles and toe rings as part of their cultural customs or tradition.[31]

Today Mithgauda choose to wear clothes according to the nature of their work, emphasizing functionality and comfort. Men normally wear shirt or t-shirt with knee-length shorts to ensure they can move freely and comfortably while working. Additionally both men and women use foot gloves to prioritize safety at work, protecting themselves from potential dangers from "*Karap*" or "*Gune*". Women choose to wear full length maxi or the saree below the knees.

The Mithgauda, women follow particular clothing customs that combine traditional customs that combine traditional elements with practical considerations. They often wear full-length maxi dresses or sarees that extend below the knee, striking a harmonious balance between cultural beauty standards and the essential needs for comfort and ease of movement.

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[31] Singh*, People of India*, 162.

3.7.4 Living condition of Mithguda

The people living in this area reside in coastal regions, which are ideal for salt extraction. The land benefits from the South West monsoons, leading to high humidity curry and ample rainfall, creating conditions suitable for rice cultivation, making rice their main food source. They consume rice twice daily with curry dishes and have a non- vegetarian diet, incorporating various pulses like moong, masur, chana, tur and locally available vegetables into their meals. Additionally, tea is a commonly consumed beverage among them.

The presence of salt pan manufacturers, notably In the Mithgauda community, combines tradition and modern concerns. Despite their dedication and hard labor, their jobs are sometimes uncertain, with low wages and seasonal employment. The younger generation's migration to alternate vocations represents a shifting landscape, as families balance maintaining historical practices with seeking financial stability in new channels based such as tourism. However, cultural traditions continue to exist, as seen by clothing choices and eating habits, linking the Mithgauda community to their coastal past in the face of changing socioeconomic conditions.

CHAPTER 4: SOCIO-ECONOMIC AND CULTURAL BACKGROUND OF THE SALT PRODUCERS IN MANSHEWADA KORGAO

4.1 Background

Korgao encompasses an area of approximately 2,298.55 square kilometers and is divided into eight wards: Mansiwada, Deusu, Konadi, Deulwada, Bhatwadi/Gwadewada, Bhaitwada, Pethechawada, and Gadekarwada. Mansiwada, located on the northern bank of the Terekhol River, is the northernmost ward, with a population of 815 people. The Hindu community is divided into Shirodkar, Malvankar, Parab and Gawade subgroups, while the Christian minority follows the Trindath denomination. In Korgao, the Gawade and Shirodkar families have historically been engaged in salt production. However, presently, only one salt pan remains operational, managed by the Shirodkar family.

4.1 Linguistic Legacy of Salt Producers

The salt producers in korgao primarily communicate in Konkani and Marathi, with English also being familiar to them. The Konkani dialect in Korgao has been influenced by Marathi due to its close geographical proximity to Maharashtra. Marathi is the medium of instruction and is taught right from elementary education at Manshewada's government elementary school, and it is also used in official documents. Howerver, Konkani and its dialects remain prevalent in spoken communication in Manshewada Korgao. This linguistic dynamic shows the cultural and geographical interactions that influence the region's language.

4.3 Educational Qualification

The local population has access to educational possibilities through two government primary schools in Korgao Bhatwadi and Manshewada Korgao, as well as two Kamleshwar High Schools in Deulwada and Pethechawada. Additionally, Kamleshwar Higher Secondary School, established in June 1994, offers specialized faculties in arts and commerce, catering to the academic goals of students beyond the secondary level. St. Francis Xavier School in Maina complements this network and contributes to the diverse educational landscape. The educational Qualification pursued by the salt producers was typically up to the tenth grade between the ranges from 60-70, with few pursuing courses beyond the SSC level. However, the existing population aged 40-50 is primarily gone beyond SSC level.

Children aged 5 and up in Manshewada normally attend the local government primary school, while their secondary education options varies between St. Xavier School in Mainan Korgao and Kamleshwar High School in Deulwada. Furthermore, religious beliefs influence these choices, with Christians selecting St. Xavier and Hindu families preferring Kamleshwar School. Students who attend college frequently choose educational institutions in Mapusa, Arambol, or Korgao. When it comes to higher education, a large proportion of Manshewada's population chooses colleges in Mapusa, indicating a regional preference for Mapusa's educational landscape.

4.4 Religious Background

In Korgao Manshiwada, there is a sole Hindu family engaged in salt production. Despite the presence of a Christian community in the area, the majority of residents in this wado are Hindu, with Christianity consisting a minority religion. Among the Christian community, Trindath has established a presence in the area. At the same time, this wado is home to hindu families such as Gawade, Parab, Malvankar, and Shirodkar. Residents

honor Local God Bandeswar as their family god. Annual *vaad divas* (celebration) take place in the month of April. This cultural event is significant for the community since it builds community unity while displaying traditional tradition.

They worship Kamleshwar and Bhumika as their family god and goddess. In addition to this Korgao had many temples in the village religious structure. These include the Bhumika temple, Mahamaya temple, Maha Lakshmi temple, Prayag Madhav Temple, Shree Kashikalyan temple, Saleshwar temple, Ragunshet temple, Dadeshwar temple, Narayan temple, Ravalnath temple, Dwarpal temple, Kulkar temple and so on.

4.5 Feasts and Festivals

Feasts and festivals are unique gatherings held by communities to mark significant events, religious observance, or cultural traditions. They include numerous ceremonies and serve an important role in bringing people together. In Goa, the mithgauda group, like many others, actively participates in such events, adding to the region's unique culture.

4.5.1 Naagpanchami: In Manshewada Korgao, Mithgauda celebrates Nagpanchami (the festival dedicated to the worship of snakes), in the Hindu month of Shravan, typically in July or August. During Nag Panchami, Mithgauda community in korgao observe rituals to honour and appease the serpent gods. They honors a cobra idol, known as the "*naag*" in their culture. However in Agarwada on Naagpanchami day, devotees venerate a picture of the *naag* painted on the wall. This ritual is based on a mythology among salt manufacturers who think their ancestors killed cobra but did not bury it, prohibiting them from worshipping a clay *naag.*

4.5.2 Ganesh chaturthi: The Ganesh festival, which begins on the fourth day of the Hindu lunisolar calendar month Bhadrapada, lasts nine days and is a major celebration in this community. Every day is filled with tremendous joy as families get together to celebrate Lord Ganesha via rituals, bhajans, and kirtans. It's a time when every member of the family comes together, breaking down age and gender barriers as men, women, and children joyfully engage in the celebrations. .Gauri Puja, observed on the inaugural day of the Ganesh festival, pays homage to Lord Ganesha's mother, symbolizing reverence and strengthening familial bonds. This tradition fosters a deep sense of togetherness and spiritual unity among all participants, enriching the community with its profound significance and shared devotion.

4.5.3 Navratri: It holds a special significance, reflecting the cultural heritage and religious traditions of the region. During this nine-night festival, which typically occurs in the autumn season, In preparation for Navratri, the Mithgavada community in Korgao performs the rujwan ceremony, in which grains are allowed to sprout. This ritual represents fertility, growth, and rejuvenation, which represents the themes of prosperity and wealth connected with Navratri.

During Navratri, festivities in Korgao center around the mainana, a temporary stage or pandal where an idol of Goddess Durga is installed. Each day of Navratri is marked by different rituals and functions dedicated to honoring the divine feminine energy. Members of the Mithgavada community actively participate in these rituals, offering prayers and seeking blessings from Goddess Durga for prosperity and protection.

Navratri in Korgao is also a unifying occasion, bringing together people from many cultures to pay tribute to Goddess Durga. Bhajan and kirtan sessions, as well as devotional songs and chants, are an important component of the celebrations, and all

Korgao inhabitants participate actively. These musical offerings foster a sense of communal peace and spiritual fervor, enhancing the celebratory atmosphere of Navratri in the surrounding area.

4.5.4 Dussehra**:** is highly significant in local calendars, particularly among salt producers. It is seen to be an auspicious a period to lay the foundations for new constructions or establish commercial enterprises. Furthermore, buying a home or consumer durables on this day is considered auspicious. Furthermore, equipment and instruments used in salt production or agriculture, technology, household items, and even children's books are ceremonially honored as symbols of productivity, prosperity, and growth. The practice emphasizes the community's respect for their livelihood and the significance of auspicious beginnings.

4.5.5 Shigmo: The Shigmo festival is a significant part of the cultural heritage of its individuals, beginning with Holi Purnima and lasting seven days of vivid festivities. This annual festival is deeply valued by the peoples, reflecting their rich cultural background and traditions. Shigmo is celebrated with a variety of colorful rituals, performances, and activities that demonstrate the community’s unity and dedication. Shigmo encompasses the essence of joy, friendship, and reverence, instilling a sense of connection and pride in its participants through traditional dances and music, as well as spectacular processions and feasts.

4.5.6 The Vaddivas of God Bandeswar, an annual festival occurring in April, holds immense significance for the entire community. It is a one-day celebration where devotees not only from nearby regions but also from neighboring states and villages gather to pay homage to the deity and participate in the festivities. The morning rituals commence with a Pooja led by the priest, during which each head of a community

family is given the opportunity to perform the ritual, a privilege that occurs once every four years. Following the Pooja, women engage in the traditional fugdi dance, adding vibrancy to the celebration.

As the day progresses, the evening brings forth the main highlight of the festival: the singing of Bhajans, wherein families such as Gawade, Shirodkar, and Malvankar actively participate. Even women who are married outside the village make it a point to attend this cultural event. Additionally, men from the Manshewada community perform a natak, a theatrical performance that is unique to this wada and only takes place once a year during the Vaddivas festival.

Prior to the commencement of the Vaddivas festivities, the samai is worshipped before God Bandeswar, symbolizing reverence and devotion. Throughout the festival, a lamp is continuously lit for 24 hours, signifying unwavering dedication. Furthermore, devotees offer oil to the temple, believing it to bring blessings such as enlightenment, educational success, and safety for children, or prosperity in business endeavors.

4.6 Rituals and Belief Associated with Salt Production

The salt-producing community in Korgao practices a variety of beliefs and rituals aimed at appeasing sacred deities in order to ensure the preservation and prosperity of their salt production activities. One such ritual takes place during the Mirg, in early June which marks the start of the monsoon in Goa. During this time, salt manufacturers offered a rooster locally referred to as “Komo” to the gods by placing it beside a Jamun or Zamball tree near the salt pan area. Additionally, offerings such as nal (coconut

shell), sakar (sugar), and soro (rice) are made to local spirits or deities, notably the Deuchaar, who are believed to live nearby and protect the village. [1]

This belief originated from the traditional Goan practice of pleasing the Zageiavaoilo (spirit of the place) or the Deuchar (spirit or guardian), in which older people strongly believe. The salt makers recall their forefathers' ongoing confidence in these rites, expressing emotions like "Zanttiacho visvas baslelo asa" (our ancestors had such firm faith).

Furthermore, salt producers hold ceremonies that include lighting agarbattis (incense sticks), holding pujas, and laying offerings of salt, coconut, and sugar in the salt pans. Local belief also includes the existence of a deity known as the bandhanacho dev (god of the bund), which this salt producers worships by preparing chicken and sharing it with their friends. This rite represents the necessity of providing 'Maan' (respect).[2]

The first batch of freshly harvested salt offers to the deity Bandeswar. It is believed that by making this offering, the community requests Lord Baneshwar's protection and blessings on their salt pans. Following the offering, the salt is used in culinary preparations, symbolizing its restoration through ritual and connecting it with spiritual meaning. Subsequently, the salt makers begin selling, indicating the continuation of their livelihood under the deity's protection. This practice emphasizes the community's deep spiritual connection to their occupation, as well as their dependence on supernatural assistance for prosperity and success.

This practice emphasizes the significance of paying 'Maan' (respect) to the devchar (local spirit or deity) before consuming the salt created. It is thought that by performing

[1] Sequiera, As Dear as, 58.
[2] Sequiera, As Dear as, 98.

these ceremonies, the local spirits are summoned to defend the salt pans, ensuring a prosperous production season. This led to connection of spiritual beliefs and salt production processes emphasizes the community's rich cultural traditions and symbiotic ties with its environment.

4.7 Folklore dance and drama

In the cultural context of Manshewada, Korgao, various forms of folklore including folk songs, drama, folk tales, and are prevalent, all of which hold socio-religious significance. The dramatic performances, known as "natak," take place on a simple stage typically located within the temple premises, with the performers being local artists from the village. These dramas predominantly revolve around religious themes, drawing inspiration from Puranic and historical narratives.

The majority of the natak performances are conducted in the Marathi language. Notably, within this community, village artists take charge of directing their own dramas, with only one such performance occurring annually, usually during the vaddivas (anniversary) celebration of the deity Bandeswar. Additionally, during this occasion, women partake in the traditional dance form known as fugdi, which is also observed by women from neighboring villages.

4.8 Economic Profile of Salt Making Families

The income that is provided by salt production has been insufficient to support the livelihoods of salt manufacturers and their families. With only one season for salt manufacturing, their economic opportunities are further limited, making it difficult for them to survive and make things live. However, salt production is not the only source of income for this locale. In addition to salt production, they engage in agriculture,

which includes vegetable cultivation and sales, as well as cashew farming. These diverse economic activities give additional sources of revenue, helping to meet the financial challenges associated with relying primarily on salt manufacturing.

Despite the limitations of salt production as a primary source of revenue, the community has demonstrated adaptability by engaging in a variety of other economic activities. By enhancing their profits with agricultural methods including cashew planting, they increase their financial reliability and adaptability to the seasonal limits of salt production. This comprehensive approach to livelihood sustaining demonstrates their adaptability and resourcefulness in handling economic obstacles in their community.

CHAPTER 5: SALT PAN EVOLUTION AND ITS COMMUNITY IN TRANSITION

5.1.1 Evolution of Salt pans: In recent years, state like Goa, which was historically rich in salt manufacturing, particularly Pernem, have seen substantial changes. These changes could be attributable to urbanization, tourism development, and changing environmental circumstances. Shifts in land use patterns and economic priorities may also help to modify the region's salt pans. Understanding these changes is critical for analyzing their impact on local populations, the environment, and the general socioeconomic landscape of the region. Numerous changes have occurred both within the salt pans themselves and within the salt-producing community. In the past, smaller *ponoiees,* (pipe, used in the past made out of coconut tree) traditionally made from materials like cotton tree or coconut tree, served as conduits to channel water from rivulets into salt pans during the salt-making season. However, contemporary practices have shifted towards replacing these traditional *ponoiees* with ready-made alternatives such as cement, plastic, or metallic pipes. This modern approach to water management is now more prevalent in salt production.[1]

Similarly, in the past, water from nearby rivers was directed into large salt production reservoirs called *tapovanim*. Today, this process often involves using cut plastic bottles to control the flow of water into the reservoirs, reflecting a modern adaptation in salt production methods. There's a significant shift in the land usage for salt production in Pernem. Previously, about 4.5% of the area was utilized for this purpose, but now only a few square kilometers are allocated for salt production.[2] In Korgao, salt production now occupies an area of 1500 square kilometers. Similarly, in Agarwado, there were originally

[1] Reyna Sequiera, *As Dear As*, (Saligao: Golden Heart Emporium, 2013), 64.
[2] Nagvekar, "*A Study of,"* 55.

16 salt pans, but this number has dwindled to only five.[3] In the Portuguese period, Pernem was one of the primary regions in the area to offer employment opportunities to migrant workers, according to Harischandra Tucaram Nagvekar's account. However, today, there are fewer employment opportunities available for migrant workers in the region. Many salt pan workers now only hire laborers (which is from nearby village or with in village) during the preparatory phase, reducing opportunities and, thus limiting chance for this group.

5.1.2 Transition and shifting preference among Community**:** Salt production was limited primarily to household consumption and local trade within regions. In places like Agarwado and Korgao, salt was sold mainly to nearby villages. In Agarwado, villages like Morjim, Mandrem, and Siolim were the main purchasers, while in Korgao, villages like Arambol, Mandrem, and Palyem were the primary buyers. The majority of the salt was used for drying fish and as agricultural fertilizer. Today, the majority of people in Pernem prefer iodized salt over non-iodized salt. This change in preference has resulted in a decline in the salt industry.In contemporary society, family division often caused from disputes among siblings, leading to the fragmentation of familial bonds. This division is formalized through a process known as "*versal,"* wherein land or resources, such as cashew harvesting rights, are allocated among brothers based on the division amongst the brothers. Typically, the family patriarch oversees this division. Further, Long-term changes are influenced by climate fluctuations. Factors like abrupt weather shifts, unexpected rainfall, and inadequate water sources contribute to sustained declines in agricultural productivity and overall family well-being.

[3] Keshav Naik, “Salt of the hearth,” *Times of India*, May 21, 2013.

Salt production occurs for only five months each year, during which salt producers are busy with their work. For the remaining months, they must rely on alternative activities such as agriculture and pisciculture. Due to the demanding nature of working in salt pans under scorching heat, many individuals opt to transition to white-collar jobs, which are more appealing and offer better working conditions. As a result, many salt producers' transition to white-collar jobs, which are more desirable in this region due to the harsh conditions of working in salt pans. Consequently, there is a declining interest among the youth in pursuing salt production as a career.

The residents of Mithgauda select clothing that is appropriate for their occupations, prioritizing functionality and comfort. Men typically wear shirs or ti-shirts with knee-length shorts to ensure ease of movement and comfort during work activities. The wearing of Gumboots by both men and women during the preparatory phase demonstrates a dedication to occupational safety, protecting against potential risks such as *karap* and *gune.* Women in mithgauda follow strict dress codes that combine traditional and practicality. Women have preferred costumes comprises full-length maxi dresses or sarees worn below the knees, which show a balance between traditional aesthetics and the necessity for mobility and comfort.

Tourism has led to significant transformations, such as converting salt pan areas into fish farming zones for additional income. Some roadside salt pans have been closed to make way for hotel construction. In Arambol and in Palyem salt pans have been converted for fish farming, whereas in Agarwada, hotels have acquired three out of sixteen salt pans. Therefore, these transformations may result in evolutionary shifts within the salt pan environments.

5.2 Suggestion and Reflection: Preserving the Salt Industry

The salt industry in Goa, once a cornerstone of traditional livelihoods, has seen a decline in recent years. Following liberation, many in the region ceased salt production, leading to a shift towards white-collar professions. However, it's essential to recognize the historical and cultural significance of the salt industry and educate the community about its importance. Reviving this industry could not only preserve cultural heritage but also provide sustainable economic opportunities for the region. An educational initiative is essential for informing people about the historic salt industry and its various applications. According to Nandakumar Kamat, organic salt has numerous applications, underlining the importance of understanding its benefits and potential. By expressing this information in simple academic terms, we may foster a better awareness of the importance of traditional salt and advocate for its use in a variety of contexts.

One of the primary challenges faced by salt producers in Agarwada is the lack of water pumps for extracting water from salt pans. Providing water pumps to salt producers at subsidized rates would help reduce or lessen the problem they face in Agarwada relating to water extraction. The salt pans in Agarwado and Korgao are not easily accessible from the main road, which increases the marketing costs for the salt extractors. Previously, they had to transport large quantities of salt on bicycles. Therefore, it is essential for the salt extractors to establish a connection with the salt path.

Areas that were previously salt production centers and are now used for pisiculture should be banned. They should be assigned only to salt producing areas. There are different types of salt produced in Pernem taluka. They should receive all necessary assistance in producing various salt grades. Black soil is great for agriculture, thus it should be valued

and used accordingly. Salt producers and workers are subjected to difficult working condition, including possible sun radiation. As a result, it is critical for the government to provide them with necessary protection equipment such as sunglasses, gumboots and gloves. Furthermore, ensuring access to healthcare benefits for salt pan workers is critical to protecting their health and well-being in the event of any work-related health difficulties.

The government should support salt pan producers by providing them with opportunities and recognition. For example, in Pernem, no salt pan has received recognition from the government, leading to a lack of support for these producers. In addition, it's important to have an association of salt producers to advocate for their interests. In Pernem, there is reportedly no such association, as mentioned by Pravin Bagli. However, records indicate the existence of an association called "Mith Utpadak Sang."

The government should set official prices for salt and offer storage options to salt producers, in regions like Agarwada and Korgao where storage facilities are lacking. Limited storage forces producers to leave salt exposed, leading to quality deterioration and lower prices. Additionally, consumers prefer freshly produced salt, leaving last year's salt mainly for agricultural and other purposes. Therefore, proper storage facilities are essential for salt producers to meet market demands effectively. Government assistance in marketing could greatly benefit local production by reducing reliance on middlemen. This would make things easier for everyone involved. A Deputy Salt Commissioner should be appointed for Goa, rather than the state's operations being handled from the Mumbai headquarters.

It is essential to connect Goa's isolated salt industries to the national support system. This collaboration will offer critical research, organizational skills, information, and financial

support to local efforts, giving them a much needed boost. Furthermore, tis connection will encourage collaboration and knowledge exchange, resulting in increased productivity and sustainability in the salt business. The current methods of salt manufacturing have remained unchanged for many generations and are proving to be inefficient. It is essential to explore and learn from modern strategies used in states such as Gujarat and Maharashtra. Training officers should be assigned to educate producers on these improved production methods. [4]

Financial support and subsidies are necessary for salt manufacturers to adopt these advancements. Hence subsidies support should be provide. Special plans designed to help Goa's salt industries should be established and implemented. Proposing a government led cooperative organisation presents a practical solution. This organisation would unite all salt producers under a single umbrella, allowing for improved collaboration and resource management. By working together producers can address common issues more efficiently, improving the industry's overall stability and sustainability.

Salt is produced by both poor farmers and landowners. Before the production seasons begin, it is critical to provide them with additional loans. This gives them enough money to produce salt. Giving them loans allows everyone, no matter if they're rich or poor, to be part of producing salt. It is good way to ensure that everyone can participate in the salt-making process. The government should help salt manufacturers whose saltpans have been submerge of embankment breaches. This includes draining out water and renovating the embankments to restore the saltpans to their original positions. There is an urgent need for

[4] Sequiera, *As Dear as*, 228.

Goa to prioritize reclaiming non-functional salt pans and protecting existing ones. Revitalizing abandoned salt pans can provide economic benefits while preserving traditional livelihoods. Furthermore, protecting existing salt pans is critical to maintaining biological equilibrium and sustaining coastal ecosystems. By emphasizing these efforts, Goa will be able to restore its salt business while simultaneously protecting its natural ecosystem for future generations.

It's important to repair and maintain sluice gates regularly and conduct periodic checks to prevent additional damage to the salt pan. This proactive strategy guarantees that the infrastructure required for salt production runs smoothly. Neglecting maintenance can cause degradation, reducing salt production and potentially hurting the ecosystem. As a result, prioritizing the maintenance of sluice gates is critical for preserving the salt pan ecology and protecting the livelihoods of salt producers.

Encourage vocational or short term training to promote salt making skills and knowledge. These courses give hands on training and education, preparing learner to work efficiently in the salt production business. By funding such projects, we can provide prospective salt manufacturers with necessary tools and skills to succeed in this industry. Furthermore, investing in vocational education helps to preserve ancient practices and guarantees that the salt production profession is sustainable for future generation.

The government should address sea pollution, which negatively impacts salt production and quality, through preventive and harsh penalties. To revive and promote the salt industry, the state government must play a positive role. This may be achieved by shedding its indifferences towards the industry. In 1967, Alberto da V. Lobo, a major expert on the Goan salt Industry, proposed a comprehensive strategy to boost the growth of the salt

industry and chemical campanies that use seawater resources. His idea consisted of three major stages: constructing modern salt works and plants to manufacture chemical such as caustic soda, sodium carbonate, chlorine gas, and hydrochloric acid. He proposed establishing salt and chemical enterprises from extraction to sale, emphasizing the need for government intervention in this regard.[5]

5.3 Already approach Government Scheme in Pernem

In agarwada, there's been minimal development support for the community. There are no specific schemes or loan facilities available. They have diesel pump to remove water from the salt pans. This diesel pump was provided by former Mandrem MLA Dayanand Sopte through the WRD department. Although a road connection has been established, it doesn't extend to the salt pan areas properly, and is only partially developed. The sluice gate has been restored, however there are still issues. Overall, more extensive development projects and infrastructure improvements are required to properly meet the community's demands.

The previously mentioned activities conducted on a small scale, with the resulting issues not raised to higher authorities or getting assistance from the relevant salt authority. It is important that the pernem authorities solve this issue immediately. Taking rapid and decisive efforts with positive attitudes can effectively address the issues faced by pernem salt sector.

[5] Albert da Lobo, "The salt industry," *Goa Today*, May-June, 1967, 22.

CHAPTER 6: CONCLUSION

The historical journey of salt production in Pernem reveals its profound impact on the region's cultural and economic landscape. The Mithgavada community's strong dedication to this skill reflects a rich legacy passed down through generations, demonstrating perseverance in the face of changing socioeconomic conditions. Despite hurdles such as economic changes and shifting societal goals, the community's dedication to salt production is persistent. From its colonial origins to the present day, the story of salt manufacturing in Pernem demonstrates the challenging harmony between tradition and adaptation that shapes local livelihoods and communal identity.

Furthermore, the narrative of salt manufacturing in Pernem demonstrates the complex interplay between tradition, livelihood, and change. The villages of Agarwado, Korgao and Arombol have played important roles in Goa's Salt production, utilizing their geographical advantages and traditional practices to support livelihood and contributes to local economies. Through centuries-old rituals, the Mithgavada group has maintained a cultural history profoundly rooted in coastal. The tools and procedures used in salt extraction demonstrated the wealth of knowledge and skill passed down through generations. These methods not only boost efficiency but also serve as a testament to the region's rich cultural heritage and commitment to sustainable practice.

The socio-economic and cultural context of salt producers in Manshewada Korgao highlights the intricate interplay between tradition, livelihood, and community identity. The linguistic diversity, educational opportunities, and religion shape daily life,

influencing everything from language usage to educational choices and religious practices. Festivals and rituals serve as significant markers of cultural heritage, fostering community cohesion and spiritual unity. Moreover, rituals associated with salt productions reflect a deep-seated belief in divine protection and prosperity, underscoring the community's reliance on supernatural assistance for livelihood sustainability. The salt industry in places like Pernem, Goa, has undergone significant changes over time, influenced by factors like urbanization, tourism, and environmental shifts. Traditional methods, such as using coconut tree ponoiees and tapovanim, have evolved into modern practices with cement or plastic pipes and cut plastic bottles. Land use for salt production has decreased, leading to economic shifts and fewer job opportunities for migrant workers.

The industry has transitioned from traditional to contemporary processes, with less land used for salt production. Transitioning preferences, including a shift towards iodized salt, have impacted the industry’s demand. Climate fluctuations and family disputes have further affected production and livelihoods. Additionally, the white-collar job has led to a decline in interest among youth in pursuing salt production careers. Preserving the salt industry requires recognizing its historical and cultural significance while educating the community about its importance. Initiatives like providing water pumps, improving infrastructure, and offering financial support can help sustain and revitalize the industry. Government intervention, collaboration with national support systems, and modernizing production methods are also essential for long-term sustainability and economic growth. By addressing these challenges and implementing supportive

measures, the salt industry in Goa can thrive once again, benefiting both the local economy and cultural heritage.

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Appendix

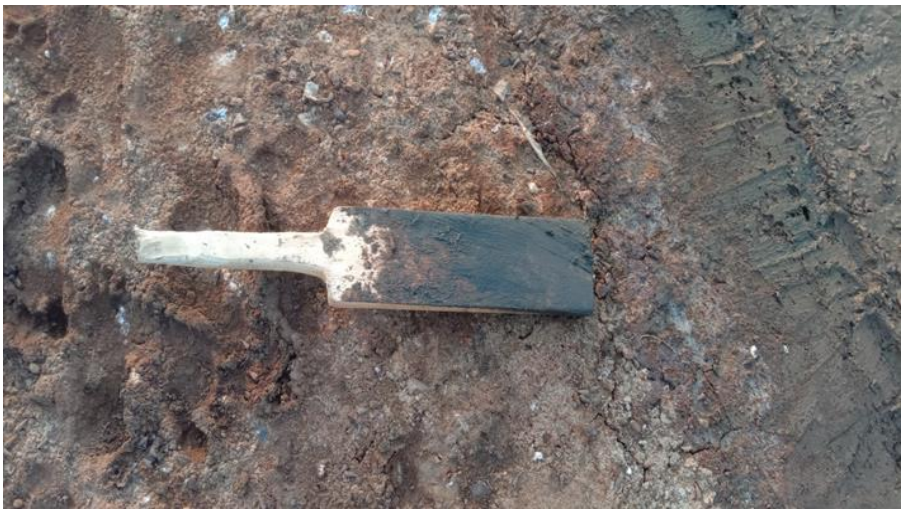

Fig: 3.1 Petnem (Pic Credit: Bhushana Thakur)

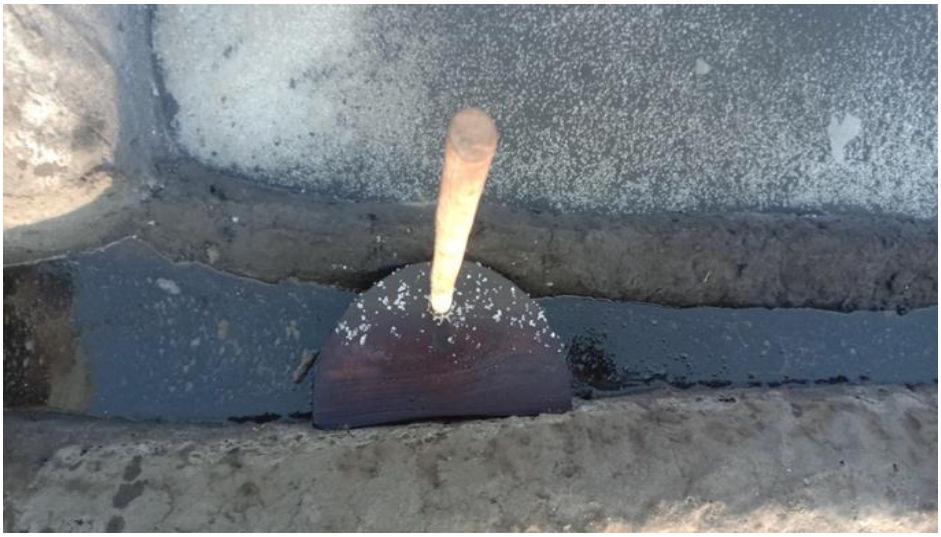

Fig: 3.2. Nivaddo (Pic Credit: Bhushana Thakur)

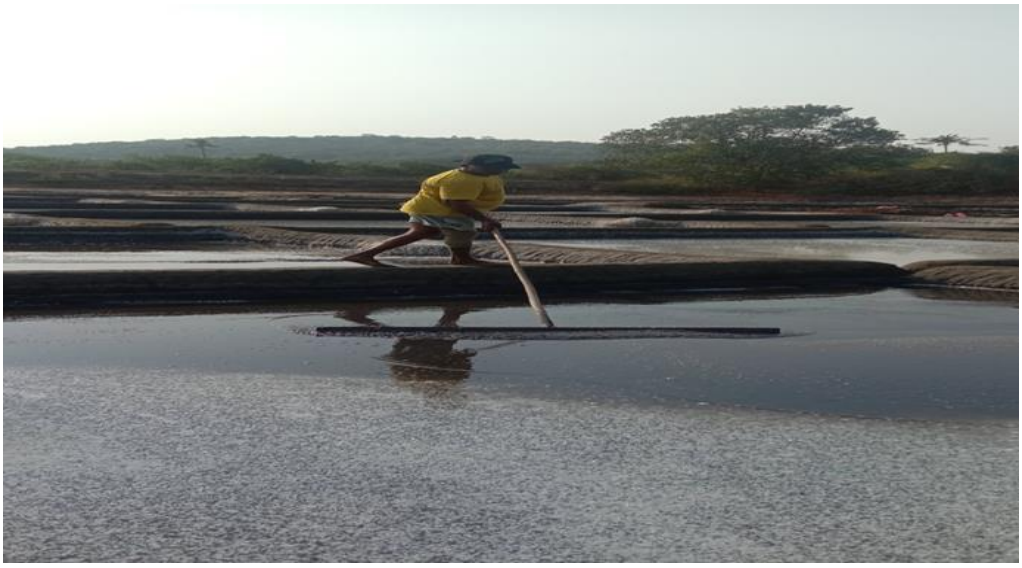

Fig: 3.3 Sallane (Pic credit : Bhushana Thakur)

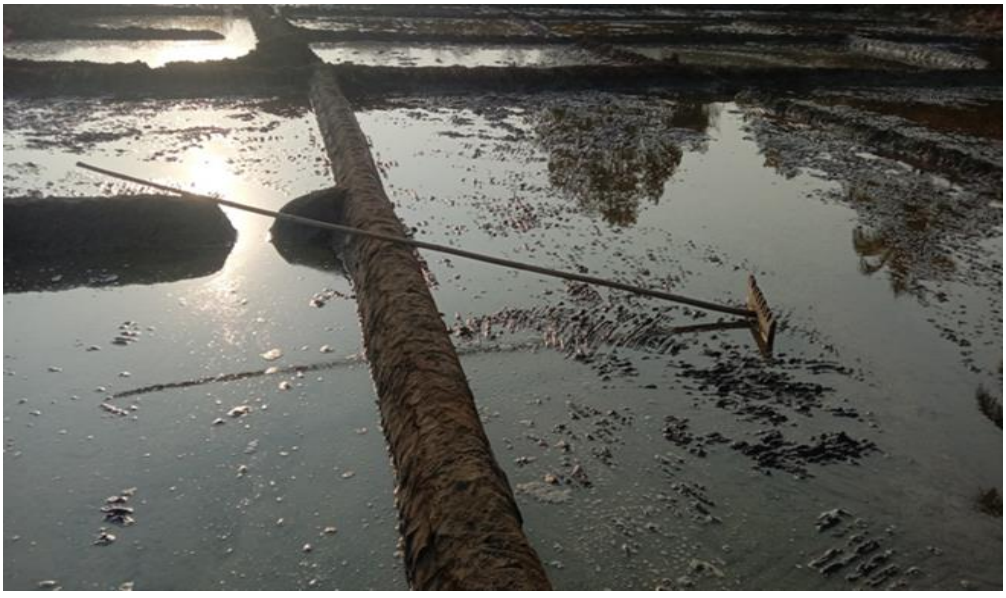

Fig 3.4 Daanto (Pic credit; Bhushana Thakur)

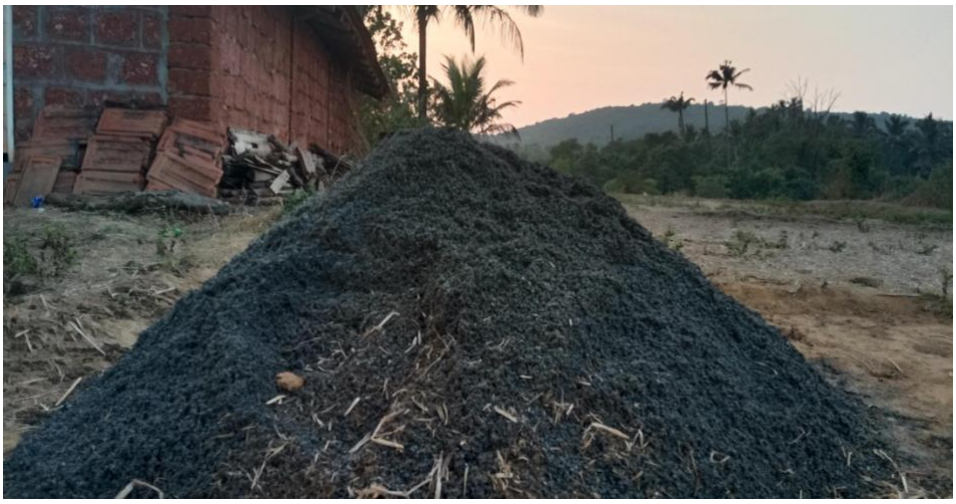

Fig: 3.5 Black Salt (Pic Credit: Bhushana Thakur)

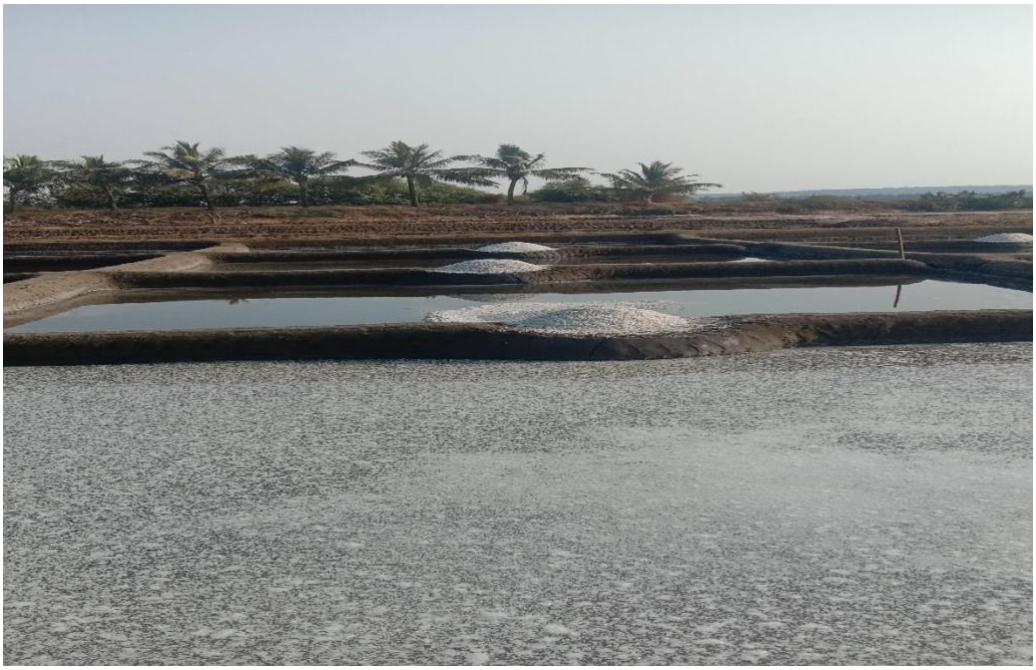

Fig: 3.6 Forming of crystal (Pic Credit : Bhushana Thakur)

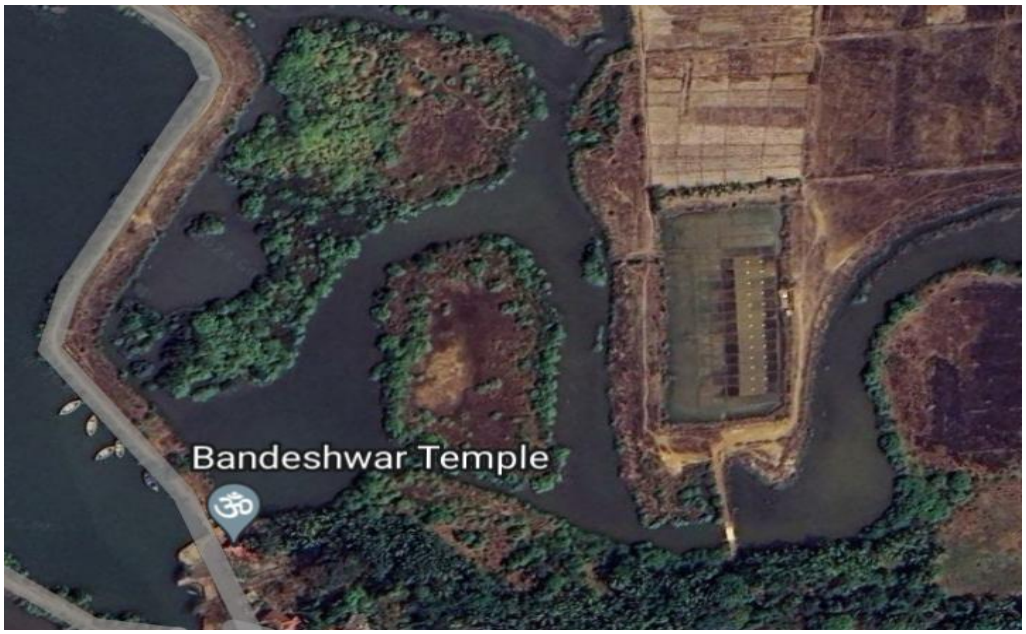

Fig: 3.3 Salt Pan at Korgao (Pic Credit: Bhushana Thakur)

Fig: 3.3. Salt pans at Agarwada (Pic Credit : Bhushana Thakur)