Madura Salt Industry Amidst COVID-19 Pandemic

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Abstract. Salt is an essential part of our everyday lives. Aside from household consumptions, salt is also used in industrial sector e.g. for chemical mixture and food preservative compound. Historically, coastal areas of East Java region has been well-known for its high quality salt production. In the last few months, the world's economy has been disrupted heavily due to a pandemic known as COVID-19. Salt industry in Indonesia was no exception to this disruption, causing a dramatic decrease in salt demand from industrial sector due to massive and nationwide business interruptions. This research analyzed this problem with a qualitative approach to describe the effects of the ongoing COVID-19 pandemic thoroughly to salt industry in Madura, East Java region of Indonesia. Snowball sampling method was used due to the existence of key informations. COVID-19 pandemic was causing a severe consequences to the salt industry. It can be seen from the fact that there are a large amont of undistributed salt products due to public concern of possible coronavirus exposure in the products. The government's policy regarding social distancing and interregional travel restrictions has not made this problem any easier to solve.

Keyword : Madura Salt, Covid-19, Salt Industry

1 Introduction

COVID-19 pandemic is an ongoing pandemic currently disrupting nearly every country in the world including Indonesia. This pandemic was identified for the first time in the city of Wuhan, China in December 2019. Since then, the virus was spread across the world including Indonesia, and since March 2020 the Indonesia government officially announced that COVID-19 is a national crisis. Initially, this pandemic was only affecting the external side of Indonesian economics when China exports to Indonesia was increasing significantly.

The pandemic was causing a very serious disruption to the national economic stability with the lockdowns and interregional travel restrictions regulated by the government. This policy ultimately caused a dramatic slowdown to economic activities due to massive business interruptions nationwide. This also interrupted supply chain activities that caused undistributed products in warehouses. Salt industry was no exception. Aside from high household consumptions, salt is an essential compound used heavily in other industries.

Madura is the largest producer of salt in Indonesia, even dated back to 20th century. This also uniquely characterized by Salt farmers and laborers totaling at over 4000 people. Despite

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of this high production number, most of these people are still below the poverty line. (Ihsannudin, 2012b).

Salt production methods used in Madura are well-known and unique, which devised of total crystallization of sea water, and salt are extracted from the lowest to the top layers. Technologically speaking, this method is still “traditionally done” and always have been relying heavily on natural resources. In 2019, the production rate was satisfying, that many Salt farmers store their products in their warehouses, planning to sell them in next rain season with higher price. But amidst the ongoing pandemic, that plan is just hopeless. This is obviously a very interesting topic to be further studied, where there are three major salt producer region in Madura i.e. Sampang, Pamekasan, and Sumenep. Annually, Madura region alone contribute for around 75.93% of East Java salt production (around 768,136.22 tons) or around 26.35% of national salt production, with an estimate land use of 6,240.39 acres. (Data of the Ministry of Marine Affairs & Fisheries of the Republic of Indonesia in 2015).

Based on short review above, we aim to map the current condition of the salt industry amidst the pandemic. With this research we hope that we can give a clearer and data-based overview of the current condition which can be used as scientific ground for decision-making purposes.

2 Literature Review

2.1 Madura Salt Industry

National salt production until now has only been able to meet domestic salt needs in terms of consumption only, while for industrial salt needs are met from imports. The salt trade scheme involved too many parties including salt farmers, middle-order, salt processing plants, big traders, sales agents and an off-island factory, Manda Ayu. (2014). all of which are influential in the fulfillment of national salt needs.

a) Salt farmers

Salt farmers perform a yield sharing system with landowners also playing a role in marketing their produce such as looking for price information on traders or determining the purpose of selling salt.

b) Tengkulak

Tengkulak is an intermediary merchant who buys large quantities of salt to then sell to a salt processing plant. Salt payment system performed by the middle man on pangarengan salt map.

c) Salt Processing Plant

In madura salt processing plant is PT Salt, PT Jaya Makmur Utama. In the people's salt channel in Pangarengan Village there is a PT (Limited Liability Company) called Jaya Makmur Utama which also serves to accommodate the salt produced by the salt map of Pangarengan Village. PT Jaya Makmur Utama produces salt in the form of coarse salt sacks and also salt packaging that has been processed and iodine ready for consumption.

d) Big Traders

Large traders are entities or people who conduct delicate salt product distribution activities that are already iodine and ready for consumption to sales agents. Big traders in purchasing salt products by going directly to the factory are PT. Jaya Makmur Utama to make purchases as well as transport salt. In this mechanism, large traders only carry out storage and transportation activities. Salt products sold are not done to increase treatment or innovation to increase added value. They sell salt in the same form as the salt produced by the factory.

e) Sales Agent

The sales agent is the one who serves as the supplier of salt products from the big merchants to the retailer. In this marketing channel the sales agent only conducts storage and transportation activities as well as large traders.

f) Outdoor Factory

The island's outdoor factories are the ultimate destination for the sale of madura salt. These salt mills only want to buy large amounts of salt that are thousands of tons.

2.2 The Impact of Covid 19 on Salt Demand

Long before Covid-19 emerged and became a pandemic, Indonesians were already overssupply not to say salt flooding. Salt is not only easy to get, but also easy to have because it is very cheap. The price of people's salt currently plummets to around Rp200 - 300 per kilogram, less than the cost of production. The festive bargain, which is equivalent to one-tenth of the fare paid to the roadside car park, makes this flavoring food almost worthless as a strategic food commodity. As a result, the people's salt sweated hundreds of thousands of farmers piled up in warehouses, in various salt production centers. It is easy to guess the fate of about 750 thousand salt farmers spread from the eastern tip of Madura Island namely Sumenep, Pamekasan, Sampang, to Cirebon, Indramayu, and some areas in South Sulawesi and East Nusa Tenggara.

3 Methods

3.1 Locations and Respondents

This research was conducted using qualitative approach to accurately describe real conditions in the field. We observed and analyzed impacts caused by the ongoing COVID-19 pandemic to the salt industry in Madura. The data population in this research is Salt farmers and several parties directly included in the business processes including merchants, vendors, and companies as trading institution. This research was conducted in major producer regions in Madura i.e. Pinggirpapas and Karanganyar in Sumenep, Lembung and Pademawu in Pamekasan, and Pangarengan in Sampang. Snowball sampling method (Sugiyono, 2013), was used in this research with sample size of 106 respondents.

3.2 Data analysis

Data analysis was carried out in three different stages, namely:

a. Secondary data analysis. In this stage we analysed existing data and results from previous studies.
b. In situ data analysis. At this stage, we used Miles-Huberman model to analyze data interactively and continuously.
c. Postsampling analysis. Data gathered from previous stages then further analyzed and visualized. Prior to conclusion drawing, we administered data credibility test with triangulation method and analysis.

4 Result and Discussion

4.1 Primary Data

Respondents studied in this research are Salt farmers (salt producers) and several parties directly involved in the salt industry business process. These are consisted of 90 Salt farmers, 9 merchants, 3 salt processing owners and a business group (koperasi) consisted of 4 Salt farmers. The respondents' distribution table is given in Table 1.

Table 1. Spread of Respondents each District

No	Region	Average Annual Production (tons)	Respondents	Sample Size
1	Sampang	399.000	Salt farmers	30
			Merchants	3
			Business groups	1
			Salt processing business	1
2	Pamekasan	152.540	Salt farmers	30
			Merchants	3
			Business groups	2
			Salt processing business	1
3	Sumenep	236.000	Salt farmers	30
			Merchants	3
			Business groups	1
			Salt processing business	1
	Total			106

Pangarengan region in Sampang is the second largest salt producer in Indonesia, Pinggir Papas and Karanganyar region in Sumenep is the fifth largest. Galis and Pademawu region in Pamekasan however, ranked in top ten of the largest salt producer in Indonesia.

Our result shows that amidst the pandemic, Salt farmers were hoping that products from last year (2019) could be sold with a relatively higher price this year but due to nationwide business interruptions, the price plummeted instead, leaving undistributed products at warehouses. Our survey result is given in Figure 1.

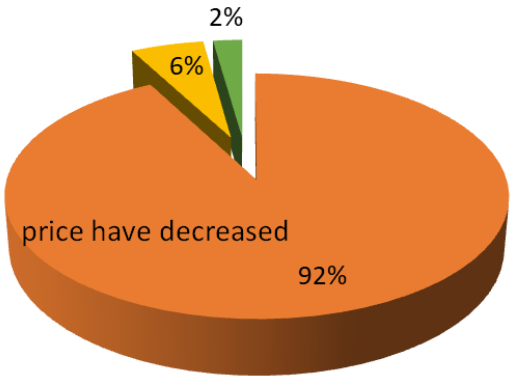

Fig. 1. Salt Price Amidst COVID-19 Pandemic

Around 92% of respondents said that salt price decreased due to the pandemic situation. The other 19% said that the price was level despite the ongoing pandemic, where the other 2% claimed that the price fluctuated. When the rain season starts each year, salt price is usually higher than in the dry season. Typically, producers stores a portion of their products in their warehouses to sell them in the next rain season to maximize their profit. Producers claimed that even before the pandemic, the salt price was already low, and even plummeted further with this ongoing pandemic. The price on August 2020 was Rp.300/kg or Rp.300,000/ton and in early October 2020 the price decreased to Rp.250/kg or Rp.250,000/ton.

This price reference is the price of PT Garam's quality products of Premium Quality (P), aside from the lower quality product of *Putih Super* (PS) quality. Salt produced in the selected region of study is categorized by their quality into three categories i.e. Quality 1 (Q1), Quality 2 (Q2) and Quality 3 (Q3). Q1 salts are typically identified by their distinct visual features, such as a clear and bright white color of large-sized and crystallized salt grains. Q2 salts are identified by their color, which is not as white nor as clear as Q1 salts and the grains size that is less than 4mm. Q3 salts are not the best, which usually has this dull color and mixed with dirts residue, with crystal size less than 3mm.

Table 2. Salt Pricelist in Madura

No	Information	Price (Rp/Kg) 2019	Price (Rp/Kg) 2020
1	Salt Q 1	500,-	250
2	Salt Q 2	350,-	200
3	Salt Q 3	300,-	170

4.2 Salt Farmers and Business Groups' Performance During the COVID-19 Pandemic

Our respondents in this research is consisted of several class of businesses ranging from small, medium to large and even business groups. As we have stated in previous section that based on our survey, most of out respondents agreed that the pandemic is disrupting their businesses. Small households-scale business was nearly unaffected, but large scale business and distribution to factories are heavily impacted due to restrictions regulated by the government. Salt farmers had this objection that interregional distribution requires additional costs such as rapid tests for their crews. Most of the owners claimed that their business was fading and demand from industries plummeted.

Since business interruptions happened, salt's delivery to factories was limited to only three trucks every day. This is contrast to the normal conditions, where Salt farmers usually deliver up to 25 tons of products everyday. This is indeed causing a severe disturbance to the economy, where factories would not pay for undelivered products, and the following repercussion is that Salt farmers could not pay their business debts. The virus spread was not made things easier for most parties, since it caused major price decrease over the course of the pandemic.

Table 3. Salt Processing Businesses

No	Name	Operating Years	Location	Activity
1	CV Media	19	Kec. Pangarengan Kab. Sampang	Producing iodized salts
2	Lembaga Usaha Pangan Masyarakat POKTAN SRI WEDARI	1,5	Dsn. Kretek, Ds. Pademawu Barat, Kec. Pademawu, Kab. Pamekasan	Producing both iodized and noniodized salts, where noniodized salts are usually used in livestock industries
3	UD. Arul Mulia	10	Ds. Karang anyar, Kec. Kalianget Kab. Sumenep	Producing noniodized salts for livestock industries

In this research we studied three businesses that process raw salts to table salts and livestock salts. Their operating years are ranging from 1.5 up to 19 years. Their main business process is relatively simple i.e. buying raw salt stocks from producer, and then process them to be sellable goods. Their detailed business process is described as follows:

a. Raw salts are contained within perforated baskets and placed on top of drums. These drums then fully filled with water until the salt dissolves, and then separate the dirts from the basket.
b. This clean salt water is ready to be filtered up to 12 hours long to make small and soft dirts to settle on the bottom of the drum. This filtered clean salt water then could be placed into molds to be burned to get fine salts.
c. The resulting salts then placed onto spinners to separate salts from water remains.
d. Wait until these processed salts cools down, and ready to pack as uniodized salts for livestock industries. For iodized table salts however, the processed salt has to be iodized. Resulting iodized salts then are ready to pack into small packaging. Typical price for small package iodized salt is Rp.1000/pc, and Rp.1,500,000/ton for uniodized salts.

Modern processing approach for this type of business could proven to be more effective, since owners could directly load raw salts onto the machine and wait for it to be processed. This method however, is believed to works only on geomembrane raw salts, since it is already clean and ready to process. Ground raw salts in the other hand, has to be cleaned thoroughly first from possible dirt remains. This modern approach could provide a single solution to all stages of the business process i.e. from raw materials to packaged goods.

Our study shows that most of these businesses are still operating even during the pandemic situation. They claimed that the current situation is proven to be more profitable for them due to decreasing raw material costs. Their final products prices were not affected by the pandemic despite the dramatic decrease to their raw material price. While their price was mostly unaffected, they were still facing problem of distribution process caused by the pandemic. Demands were steadily decreased since the start of the pandemic, and even reached the lowest

point of zero demand in mid-March to July 2020. In other words, while the pandemic was not affecting their raw material price, the disturbance in their delivery routines were severe and caused undistributed products piling up in their warehouses. This phenomenon obviously also increasing storage costs. Most of the iodized products are usually sold in Madura, where the uniodized products are popular in Malang and Sidoarjo regions.

Business groups were founded in some of the main producer regions, to exclusively handle and control salt business. These groups is given in the following Table 4.

Table 4. Salt Business Groups

No	Group Name	Location	Members	Activity
1	Koperasi Maju Bersama	Kec. Pangarengan, Kab. Sampang	5 employees and 40 members	Savings and loans
2	KUD Karya Sakti	Kec. Larangan, Kab. Pamekasan	60 members, 3 employees, 3 supervisors, 3 administrators	Salt storage services, with a price rate of Rp.10/kg of salts
3	Koperasi Madusegoro	Kec. Pademawu, Kab. Pamekasan	62 members where 32 of them came from LMDH Sumber Barokah	Consumer goods store and sacks for salt industries
4	Koperasi Sumber Hasil	Kec. Kalianget, Kab. Sumenep	4 employees and 700 members	Savings, loans, salt trade, and factory. This group has registered to BPOM with trademark of Bunda, Reformasi, and Nusantara

These groups were also affected by te pandemic. Maju Bersama group claimed that their internal financial condition was not stable recently. Most of its members could not pay their dues and requested credits/debts to provide for their families during this pandemic. This obviously caused by previously stated problem of plummeting salt price.

The COVID-19 virus spread caused a disruption in the business groups' activity since demands from industries were decreased even to point zero demand. A very strange and contrast practice happened: deliveries often does not operate at all, where usually delivery routines happen everyday in normal condition. This of course lead to a further decrease to the already-low salt price.

Business groups were initially founded to cooperate their members in maximizing their throughput and revenue. These groups were also capable of giving some financial support for its members though business loans. According to Erlina dan Kurniawa (2015), one of the major problem faced by business groups is the incapability in controlling and stabilizing salt price in the market. This pandemic is giving more problem by decreasing sales, thus criplling business groups ability to support its members financially especially in hard times like dry seasons.

4.3 Salt Industries Condition during COVID-19 Pandemic

In salt market chain, salt producers and the underlying price rely heavily on industrial demands. The ongoing pandemic caused a dramatic decrease to this industrial demands, thus made the price even lower.

According to the Ministry of Industrial Affair of Indonesia, manufacturing industries only absorb as much as 980,000 tons of salts through early July 2020. This proves to be lower than

the initial contract of 1.1 tons of salts. It is very likely to be caused by pandemic-related regulations and restrictions by the government to contain the virus spread. These regulations were disrupting many businesses, thus decreasing raw material demands. A complete salt business process in Indonesia is given in the following Figure 2.

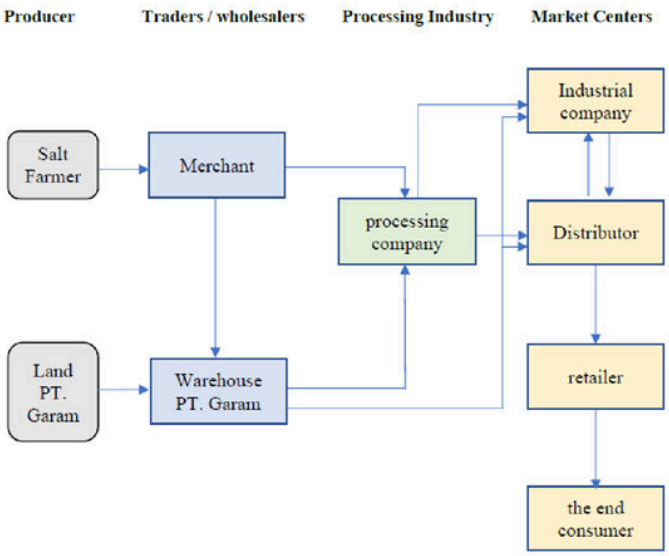

Fig. 2. Salt Market Chain in Madura

5 Conclusions

COVID-19 pandemic is still ongoing and spread to every corner of Indonesia. The pandemic is causing a severe disturbance to many industrial sectors including salt industries in Madura. The current salt price decreased to Rp.200 to Rp.300/kg. Regulations and restrictions by government to contain the virus spread was also not helping helping the economy to heal, for the sake of people safety.

Suggestions

In these hard times, PT Garam management and board is expected to come with innovative and creative solutions, especially in production and marketing process. We would like to give a suggestions of presenting a health-oriented product variants to the market e.g. low sodium salts, mouth rinse, spa salts, and other variants needs to be developed to response accordingly to this particular situation where health concern is prioritized.

References

[1] Kuntowijoyo. 2002. *Social Change in Agrarian Society:* Madura 1850-1940. Yogyakarta: Eyes of the Nation.
[2] Reid, Anthony. *Southeast Asia In The Commercial Period 1450-1680* Volume I: Land

Under the Wind. Terj. Mochtar Pabotinggi. Jakarta: Yayasan Obor Indonesia,1992.
[3] Reid, Anthony. *Southeast Asia In The Commercial Period 1450-1680* Volume I: Land Under the Wind. Terj. Mochtar Pabotinggi. Jakarta: Yayasan Obor Indonesia,1992
[4] Sugiyono. 2013. *Business Research Methods. Bandung*: ALFABETA
[5] Ihsannudin, (2012b). *Empowerment of Salt Growers Through Land-Based Policies*. Journal. Activita 2 (1), 13-22
[6] Pangarengan Sampang Regency [Thesis] Agribusiness Study Program faculty of agriculture Jember University.
[7] Manda Ayu.2014. Marketing of People's Salt In Pangarengan Village Pangarengan District Sampang District [Thesis] Agribusiness Study Program Faculty of Agriculture Jember University.