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### The Linkage of Salt Farmer's Financial Literacy with Salt's Productivity, Capital, Price and Market Access

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#### ABSTRACT

The study analyzes the relationship between financial literacy of salt farmers and people's salt production with land, volume, sources of capital, and market access. Financial literacy is; the ability of farmers to understand the types of financial products/services from the financial industry and the ability to use them. The production of the people's salt business (Kugar) has an important contribution to Indonesia's salt production. The quantities of people's salt have not been able to meet domestic demand, especially industrial salt. That's what drives the import of salt. The research object is 7 locations in Cirebon Regency, West Java. This area was chosen because it represents the highest salt product in West Java. Data were taken using descriptive, explanatory, and purposive sampling techniques as well as interviews with the Department of Marine Affairs and Fisheries, the Central Bureau of Statistics, Kugar, and the Ministry of Industry and Trade. The results showed that the financial literacy of farmers was very low, so productivity was also low. Production costs are loaned by collectors from Rp. 500,000 to Rp. 1,000,000 with a profit sharing system. The selling price of salt from farmers to collectors is below the market price between Rp. 250/kg, Rp. 300/kg, the highest is Rp. 500/kg. The price of salt from collectors to industry is Rp. 1,200/kg, Rp. 1,500/kg to Rp. 2,000/kg. Prices, market access and capital, salt farmers depend on collectors. The profit from salt is sufficient for the cost of living. Asset deposits are limited to jewelry, cows, motorcycles. 74% of workers do not have financial service products. Only know about cooperatives and loans to collectors.

**Keyword:** financial literacy, production, salt prices, capital, market access.

### Keterkaitan Literasi Keuangan Petambak Garam Rakyat Dengan Produktivitas Garam, Modal, Harga dan Akses Pasar

#### ABSTRAK

Penelitian menganalisa keterkaitan literasi keuangan petambak garam dengan produksi garam rakyat dengan lahan, volume, sumber modal, dan akses pasar. Literasi keuangan adalah; kemampuan petambak memahami jenis produk/jasa keuangan dari industri keuangan dan kemampuan menggunakannya. Produksi usaha garam rakyat (Kugar) berkontribusi penting terhadap produksi garam Indonesia. Kuantitas-kualitas garam rakyat belum mampu memenuhi permintaan dalam negeri, khususnya garam industri. Itu yang mendorong impor garam. Objek riset 7 lokasi di Kab.Cirebon-Jawa Barat. Wilayah ini dipilih sebab mewakili produk garam tertinggi di Jawa Barat. Data diambil menggunakan metode deskriptif, *explanatory*, dan teknik *puspositive sampling* serta wawancara dengan Dinas Kelautan dan Perikanan, Badan Pusat Statistik, Kugar, dan Kementerian Industri dan Perdagangan. Hasil penelitian menunjukkan literasi keuangan petambak sangat rendah, sehingga produktivitas

juga rendah. Biaya produksi dipinjam pengepul dari Rp500.000 hingga Rp1.000.000 dengan sistem bagi hasil. Harga jual garam dari petani ke pengepul di bawah harga pasar antara Rp250/kg, Rp300/kg tertinggi Rp500/kg. Harga garam dari pengepul ke industri Rp1.200/kg, Rp1.500/kg hingga Rp2.000/kg. Harga, akses pasar maupun modal, petani garam bergantung pada pengepul. Keuntungan dari garam cukup untuk biaya hidup. Simpanan aset terbatas pada perhiasan, sapi, motor. 74% buruh tidak memiliki produk jasa keuangan. Hanya mengetahui koperasi dan pinjaman ke pengepul.

**Kata kunci:** literasi keuangan, produksi, harga garam, modal, akses pasar.

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## INTRODUCTION

People's salt businesses have an important contribution to national salt production. Indonesia island country has a very large territorial waters; 17,508 islands, the length of the coastline is 81,290 kilometers with a sea area of 5,176,800 square kilometers. Indonesia's sea area is larger than its landmass. The abundant sea potential has not been able to be optimized, the proof is that salt is still imported (Setyaningrum et al., 2015) . National salt needs for consumption and industry amounted to 3.8 million tons, it consists of 1.7 tons for consumption and 2.1 million tons for industry. National salt production from salt farmers, private salt companies and PT Garam (BUMN) can only produce 2.1 million tons. The shortage of imports amounted to 1.7 million tons from other countries (Ihsannudin et al., 2018).

The salt dilemma in Indonesia is not just that the volume of salt productivity is lower than consumption. The quantity of salt availability (supply) is lower than the public demand for salt (demand). But also in terms of quality. Salt production that has not met the standards of industrial needs, both the food-beverage, pharmaceutical and pharmaceutical industries. Domestic salt consumption needs alone have not been met. This is what causes the import of salt from other countries. National salt production in 2015 reached 2.84 million tons but has not been fully able to meet the domestic salt needs of 3.75 million tons in the same year (Atmojo et al., 2020).

Strategies and policies to increase salt productivity in Indonesia need to be made to benefit Indonesian producers and consumers. Support from all sides needs to be well synergized. Between salt farmers, farmers' communities, ministries of marine affairs, industry and trade services, college academics. Field practitioners, investors, and governments that have authority such as land availability, production technology, capital access. Financial literacy is the ability to understand and use various types of financial products from the financial industry such as non-bank banking. Financial inclusion shows as a user of financial products from the financial industry (OJK, 2020).

Salt farmers should have understood and used financial services. Financial plan, financial objectives to strengthen productivity. Productivity ability to produce a number of units, kilos, salt in tons. Access to capital is the ability to penetrate or obtain capital sources, especially from financial institutions. The price level is the actual price caused by the interrelationship between demand and supply. Market access is the ability to obtain market information or a certain amount of demand from consumers. End consumer or industry. Salt production is highly dependent on climate and weather and still uses traditional technology (Ihsannudin et al., 2018).

The technical aspects of the traditional salt industry still use very simple equipment, with the process of making salt traditionally (Marzuki et al., 2014) . Capacity; the ability to increase the increase in salt production in one harvest per hectare. Productivity is more to what the quantity of salt production one kilogram. Salt; NaCl crystalline compound products that

are chloride and sodium, can dissolve in water, and salty taste resulting from the process of evaporation of seawater (Chandra & Sao, 2020). Production; The ability of farmers to produce salt one kilogram per harvest per hectare from each season. There are several factors that need to be considered in producing salt; raw materials, labor, capital, and managing ability. Marine water raw materials, farmers' labor/salt farmers, capital used how much is needed. From where the capital is obtained, from banks, cooperatives, steaming/juragan, or the capital of the money itself. Pricing is the determination of the value of salt that is corrupted by money or the determination of the amount of rupiah that must be paid for salt products at a certain time in a particular market. The existence of the Pugar program in 2011 had a positive impact, among others, increasing the price level and quality of production. Comparison data as an example of two sub-districts of salt price data in 2010 before Pugar, and in 2015 after the Pugar program. The quality of the price of rupiah per price (Rp/Kg) experienced a significant increase in Kapetakan and Pangenan districts. The average production quality of three (KP3) from the selling price of Rp120/kg to the production quality of two (KP2) the selling price becomes Rp357/kg (Hidayah & Ernaningsih, 2017).

Another study analyzed the financial performance and insecurity of salt pond production in Pangarengan district. Another study analyzed the financial performance and insecurity of salt pond production in Pangarengan Village. Scale of salt pond business groups; Private land and rental land show profitable and worth running. Financial performance of private land salt business; income of Rp35,210,000, GPM (53%), R/C ratio (1.86), PP (9 months), and NPV for the next 5 years amounted to Rp198,139,803. While the financial performance of the land lease salt business; income of Rp32,355,000, GPM (53%), R/C ratio (1.74), PP (10 months), and NPV for the next 5 years amounted to Rp195,075,632. Overall, the benefits received by salt farmer include both because it can cover operational costs incurred and gain profits (Jason et al., 2017).

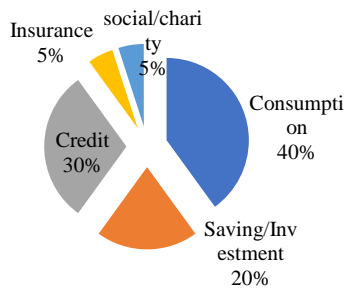
This study shows with actual data ; how the condition of financial literacy of salt farmers; What is the volatility of people's salt production per year ; in the form of the area of production land and potential land owned; how many members of the people's salt business group (kugar) ; what is the difference in the price of people's salt per region/location and what factors affect the demand and supply of people's salt ; the quality of people's salt that is expected by industry as a raw material for helpers; What assets salt farmers have from salt production.

## **RESEARCH METHOD**

This study uses descriptive methods. Puspositive sampling with the object selected by the researcher (Fatihudin,2020). Interview with a salt farmer. Secondary data obtained from agencies/ institutions, salt farming community salt productivity in Cirebon. Ministry of Marine Affairs and Fisheries (KKP), Central Bureau of Statistics (BPS), People's Salt Business Group (Kugar), Empowerment of People's Salt Business (Pugar), as well as Ministry of Industry and Trade. Excel-processed data, classified, tabulated according to analytical needs. The area of observation in this study is specifically salt farmers in Cirebon in 7 (seven) sub-districts; Kapetakan, Suranenggala, Gunungjati, Mundu, Losari, Pangenan and Gebang. The region selected 35 (7x5) five salt farmers per location. Because this region is able to represent the highest salt products in West Java.

## RESULTS AND DISCUSSION

Financial literacy, financial goals, financial inclusion of Cirebon salt farmers are still low. Most 90 percent don't understand financial services products. Not yet using financial services such as deposits, mutual funds, stocks, bonds, pension funds. Just know the savings, join the cooperative, buy gold jewelry, buy cows and borrow capital to the collector. Even if there are advantages of routine shopping. The benefits of salt production can only be able to pay debts only. The allocation of salt farmers' income should be in the followings;

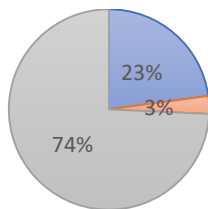


**Figure 1. Allocation of income**

**Table 1. Average income per harvest (6 months)**

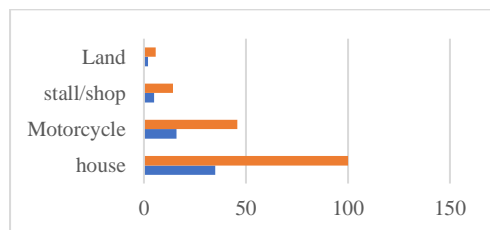
Production	2-5 ton	2-20ton	20-40ton	50-60ton
Income	Rp3-9million	Rp4-12million	Rp12-18million	Rp20-30million

Source: Data Processed (2021)



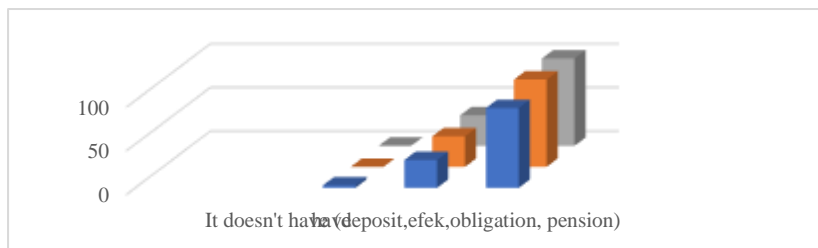
**Figure 2. The status of ownership of people's salt land (2020) The status of ownership of people's salt land; Owner 3%, tenant 23%, laborer 74%.**

Source: Data Processed (2021)



**Figure 3. Salt farmers' assets (2020)**

Source: Data Processed (2021)



**Figure 4. Ownership of financial products (2020)**

Source: Data Processed (2021)

Anyone with good financial goals should be able to allocate income ratios of 4.30.15-20.5.5 percent, including people's salt farmers (Gani & Gitayuda, 2020). The smallest income of salt farmers is 9 million, the highest is 30 million.  $9/6=1.5$  million per month.  $30/6=5$  million per month. The average income of salt farmers is 2.5 million. Salt farmers are the majority of workers. 74 percent of workers have no financial services products, only cooperatives, loans from collectors (Nugroho et al., 2020).

**Table.3. Production Volume, Price, Number of Farmers, Groups (Kugar), Land Area and People's Salt Production Site in Kab.Cirebon (West Java)**

No	District	Village/ Location	Production Area (Ha)	Land Potential (Ha)	Number of Groups (Kugar)	Number of Members (Persons)	Salt Production (tons) 2019	Salt Productio n (tons) 2020	Salt Price (Rp/Kg)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
1	Kapetakan	Bungko	208,00	300,00	11	112			
		Bungko Lor	80,00	100,00	5	49			
		Total	288,00	400,00	16	161	9.916,00	65,00	350,-
2	Suranenggala	Suro Lor	30,00	34,00	5	51			
		Muara	90,00	250,00	1	11			
		Total	120,00	284,00	6	62	1.664,00	206,00	300,-
3	Gunung Jati	Jatimerta	0,80	50,00	3	32			
		Total	0,80	50,00	3	32	207,10	104,00	450,-
4	Mundu	Citemu	7,35	62,00					
		Waruduwur	33,95		4	41			
		Total	41,30	62,00	4	41	2.298,39	165,00	300,-
5	Astanajapura	Kanci	27,00		5	52			
		Kanci Kulon	35,00						
		Total	62,00	80,00	5	52	3.122,00	752,00	250,-
6	Losari	Ambulu	27,85		3	30			
		Kalisari	68,40		6	61			
		Tawangsari	9,55		2	22			
		Kalirahayu	3,85		1	10			
		Total	109,65	250,00	12	123	11.020,60	313,00	300,-
7	Pangenan	Ender	50,00						
		Pangenan	150,00		4	42			
		Bendungan	150,00		16	160			
		Rawaurip	250,00		20	201			
		Pengarengan	200,00		17	171			
		Astanamukti			2	20			
Total		800,00	1.628,00	59	594	92.282,32	155,00	500,-	
8	Gebang	GebangMekar	25,00		1	10			
		Melakasari	20,00						
		Pelayangan	15,00						
		Gebang Ilir	20,00						
		GebangKulon	26,00		3	32			
		Kalipasung	30,00		5	51			
Total		136,00	420,00	9	93	16.185,00	910,00	300,-	
Total			1.557,75	3.174,00	111	1149	136.695,41	2.670,78	

Source: KKP Kab.Cirebon Processed (2021)

The cost of producing people's salt is mostly from steamers. People's salt from farmers to steamers is valued at only Rp300 to Rp400/kg. While the steamer to the factory Rp1,200 to Rp1,500/kg. The amount of people's salt production of 7 sub-district locations in Cirebon from 2015 to 2019 has increased. Except in 2019 decreased to 136,695.41 tons from 2018 amounting to 424,615.78 tons due to the Covid-19 pandemic restrictions on community activities. Moreover, in 2020 only 2,670.78 tons. Salt production was highest in 2017, 2018, 2019, due to long dry weather. Also the spirit of farmers because there are regulations limiting salt imports (Wulandari et al., 2021).

The area of production land and the potential of people's salt land (Pugar) can continue to be increased in Cirebon most widely in Kapetakan sub-district (Bungko, Bungko Lor). Production land area of 288 hectares, potential land area of 400 hectares. This means that the productivity of people's salt in Cirebon can continue to be improved. Followed by Suraneggala subdistrict, the new production area is used covering an area of 120 hectares. Potential land of 284 hectares that have not been developed. The lowest is in the area of GunungJati area of 0.8 hectares only. Potential land area of 50 hectares that has not been raised. The number of farmers and people's salt business groups (pugar) is the most in the Kapetakan subdistrict area of 161 people and Pugar there are a number of 16 groups.

In 2019 the production of people's salt in Cirebon when viewed from the largest total production volume of 92,282.32 tons is in the Pangenan subdistrict. The smallest production volume of 207.10 tons is in the Gunungjati subdistrict. In 2021 the average volume of people's salt production will decrease due to the PPKM pandemic covid19. The largest production of gebang region is 910.00ton, the smallest amount of 65ton is in the Kapetakan area. While the highest selling price of people's salt is Rp500/kg is in the Pangenan region. The lowest price is Rp250/kg there is the Astanajapura subdistrict. Total people's salt production land is 1,557.75 hectares. Potential land 3,174.00. 111 Business group (kugar) with 1,149 members. Total production in 2019 was 136,695.41 tons. 2020 production decreased by only 2,670.78 tons.

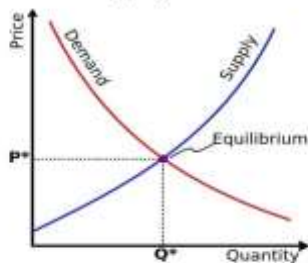
The production of people's salt is made individually and in groups (Kugar). The land is self-owned, leased or joint venture for revenue between the owner of capital and the farmer of processing workers. Salt processing is done traditionally. The raw material of sea water by using solar thermal energy during the dry season. Folk salt can be an industrial raw material called salt krosok (raw-salt). Salt making with sea water evaporation technology. In addition to household consumption, fish preservation, this salt is also needed as a helper by industry. The food-beverage, drug and pharmaceutical industries provided that iodized ones have the Sodium Chloride (NaCl) component required by SNI 01-4435-2000. The stages of making salt krosok raw materials, including: (a) the entry of seawater into sea water reservoirs, (b) evaporation of seawater in the evaporation area (c) hardening of the crystallization table, (d) the process of salt crystallization and maintenance of salt crystals (e) salt levies, (f) salt hoarding/storage, (g) wading and transportation (Najib, M., Yn.,2007). Indication of quality salt; Clear sea water, long dry climate at least 4 consecutive dry months without rain, watertight soil conditions, labor number of farmers and expertise is quite labor-intensive, land design technology ranging from sea water reservoirs, evaporation land, crystallization land and floodgate channels. The age of salt crystallization should not be less than seven days.

Equipment needs and capital of the production of people's salt business; (1) Ferris wheel 20 units Rp10,000,000; (2) Pump engine 10 Units Rp25,000,000; (3) Support Equipment 10 units Rp2,500,000; (4) Compaction of the land Rp5,000,000; (5) Channel Improvement Rp2,500,000; (6) Scales 5 units Rp2,500,000; (7) Sacks 300 units Rp2,500,000 ; Total Rp50,000,000. Resource; Kugar (2020). Salt quality; As a food that contains mineral elements

needed by humans, Sodium and Chlorine (NaCl). The quality of people's salt for salt consumption is expected to have levels of NaCl-94%, NaCl-60% dietary salt. As for the industry must have NaCl levels; chemical industry NaCl-96%, food miscellaneous industry NaCl-97%, pharmaceutical industry NaCl-99.8%, Petroleum industry NaCl-95%, tanning skin NaCl-85% (Gatra,2015). The maximum limit of heavy metal content such as calcium and magnesium is 200 ppm-400 ppm and has a low water content (Atmojo et al., 2020).

Salt Price; In microeconomic theory, the legal mechanisms of supply and demand are known. The supply curve will intersect with the demand curve. Price and amount will affect each other. If the price goes up, then the quantity of purchases will decrease. If the price drops, the quantity of purchases will increase. Note 'ceteris paribus', variables remain constant. Salt is also rated imperior goods, given. Based on data from the Central Statistics Agency, salt production volumes in Indonesia have not been able to meet consumer demand, especially industrial consumers. That's what prompted importers to import salt from other countries. Even the price of imported salt is lower than the price of local salt. The law of demand does not apply, if the ceteris paribusnya is eliminated. The 'price' variable is not the only one that affects the demand for salt, but the 'price' of one of them. Other variables derived from consumers such as; taste, taste, lifestyle, expectations, promotions, advertising, earnings, brands, shapes, wraps, colors, as well as price. Other variables come from the manufacturer; technology, model, price, volume, weather, climate, profit, standardization, halal, regulation, bureaucracy, distribution, interest rates, taxes, and many others. The price of people's salt can be attractive. If there is added value in the salt for example so table salt is ready to be consumed. It can also be priced better if it is able to meet the needs of consumers. Volume, capacity, quantity, quality of salt influences the supply side of salt farmers.

Equilibrium between Demand & Supply Price



**Figure 5. Equilibrium demand-supply**

Source: Equilibrium demand-supply from Samuelson, (1995:46)

In empirical reality it turns out that this salt attracts many people. There is a popular salt price term among salt farmers. Salt if a little taste 'salty'. But if the salt is a lot and the price is good the taste of salt becomes 'sweet'. If the price of salt drops, the taste of salt becomes 'bitter'. The price of salt among salt farmers is very low can not afford to compare the purchase price that has been determined by middlemen (collectors). The farmer's position is in a weak position. Because salt farmers are only as managing workers. Salt-making land is mostly leased to the collector's land. The profit-sharing ratio is 1:1, some is 2:3, some is 1:3, depending on the agreement between the processing farmer and the low bargaining price. Before the salt harvest, farmers have borrowed various loans for daily necessities by collectors from starting to buy rice, side dishes, cigarettes, capital costs. Although the ratio is still not greater. At least it's the same no. Causes of school grades, vehicle installments, production operating costs. The

harvest cannot be sold to anyone else, other than to the steamer. Farmers are afraid of collectors, if they look for loans from other parties such as banks, cooperatives or others. There is the potential to be exiled, removed and not borrowed anymore. It could be that the land is handed over to another party. Market information tends to be controlled by a group of entrepreneurs / large traders. There may be similarities with merchant-fishermen, motivation to be weak independent and do not dare to take out credit loans, fear of the risk of default (Fatihudin & Mauliddah, 2019).

The price of salt sold to the collector ranges; Rp250/kg, Rp350/kg. The highest is Rp500/kg. Except in 2017-2018 the price reaches 1,200 to 1,500 rupiah. At that time the drought was long and regulations on imported salt restrictions were in place. Prices from farmers to collectors range from 400-500 rupiah. The price of salt from steamers to industry is between 1,000 to 1,500 rupiah. 150 percent of the profits earned by middlemen. Salt commodities produced by farmers have been sent to the collector to pay debts at the beginning of production. Indeed, capital, land, ferris wheel, geomembrane plastic, all come from the collector. Pure farmers are only managing workers. The challenge for all, how to develop from salt farmers can turn into entrepreneur/salt owners. Able to increase the capacity of salt production, income and welfare of people's salt farmers in Kab.Cirebon. Like the success of Haji Sanim residents in Rawaurip Village Pangenan Kab.Cirebon district is able to convert krosok salt into gandu salt (beam), producing 200 tons of salt and 170 tons of fertilizer every month. Dare to borrow money 100 million to 500 million from banking (<https://www.republika.co.id.,25/10/2021>). Also the success of Septi Ariyani former program companion Pugar Kab.Cirebon residents in Grogol Kec.Gunungjati Kab.Cirebon was able to turn people's salt into beauty products Spa Women (foot salt, face scrub, body scrub) managed to lift the price of people's salt from Rp300/kg to a price of Rp120 thousand/kg (<http://www.finance.detik.com.,5/8/2019>).

Salt farmers have an important income. But it is more perfect if salt farmers have financial goals. Including arranging income allocation, in order to be able to prepare for a better future when it is no longer working.

## **LIMITATIONS OF RESEARCH**

This research is limited to examining income allocation, salt production and the distribution path. If it is more comprehensive, there should be added value for salt farmers, for example, production technology is cheap but increases its capacity and production volume. Also how to fill other jobs as an alternative to salt production that has stalled due to the rainy season in addition to income.

## **CONCLUSIONS**

The financial literacy of salt farmers in Cirebon has not had an impact on people's salt productivity, access to capital, prices, and market information. But it is influenced by the extent of production land, weather, the amount of capital from the collector. Salt production once harvested in 2019 was highest at 136,695ton, down 2020 to only 2,670.78ton from 1,557.75 hectares of iced land. Potential land of 3,174.00 hectares. Production costs borrow 500,000-1 million rupiah to financiers with a revenue sharing system of 1:1, 1:3, 2:3. If 10 sacks, 3 sacks of farmers, 7 sacks of collectors. The selling price of salt from farmers to financiers is below the market price between Rp250/kg, Rp300/kg is the highest Rp500/kg. The price of salt from steamers to industry is Rp1,200/kg, 1,500/kg to Rp2,000/kg. Price level, market access and capital, from year to year salt farmers depend on the collector, do not dare to borrow to other parties banks, cooperatives, potential exiles, removed, not given loans anymore. Salt farm



products are used for living expenses. if there is an excess of limited asset deposits buying gold, open stalls, motorcycles. Salt farm products are used for living expenses. if there is an excess of limited asset deposits buying gold, open stalls, motorcycles.

Efforts to increase production, potential land can be developed through land regulation by the Cirebon regional government. Efforts to increase prices, access to capital, markets through cooperatives, ease of banking bureaucracy and sales assistance. Limitations of financial literacy can be done with assistance about income allocation and financial goals. The next research should be able to bring experts in the field of making salt production technology precisely and efficiently. Included in the productivity of pond fish cultivation.

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