AGRICULTURE MSMEs SUSTAINABILITY: FARMERS' EXCHANGE RATES IN INDONESIA DURING THE COVID-19 PANDEMIC AND FARMER EMPOWERMENT SOLUTIONS

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Abstract

In "Rencana Pembangunan Jangka Menengah Nasional 2015-2019," regarded as a vital monetary sector, one of Indonesia's national development goals is the agricultural sector. One indicator of the success of agricultural development is the degree of farmer welfare, typically determined by the Farmer Exchange Rates (NTP). By comparing the quantity of NTP in each subsector and the implementation of the farming engagement activities, this article compares the level of farmer welfare in two farming sub-sectors, specifically estate crops and horticultural crops. The secondary data from Central Statistics Agency (BPS) from 2015 to 2021 were divided into two periods before and during the pandemic Covid-19 (2015–2019 and 2020–2021), and the descriptive data on the farmer involvement activities with the sample point at Belitung Island. The data were analyzed with SPSS version 25 through Eta correlation analysis. The investigation revealed that horticultural crops and the NTP estate changed, with the NTP of horticultural plants being the most stable. Meanwhile, the horticulture and NTP estate crops tended to decrease and become less stable during the pandemic Covid-19. We concluded that the agriculture industry was sustainable, particularly MSMEs' horticultural and estate crops. For a sustainable farming option, we advise employing marginal land for short crops using organic compost and reusing agriculture waste for bioorganic fertilizer.

Keywords: Farmer Exchange Rates, Farmers' Welfare, Estate Crops, MSMEs Sustainability

INTRODUCTION

Coronavirus Disease 19 (Covid-19) rapidly became a global pandemic and has spread to hundreds of countries across continents. The pandemic affected the world economy, including Indonesia. In two consecutive quarters, national economic growth has increased by 5.32% (Iba *et al.*, 2020).

Several previous studies have discussed how the epidemic has affected the economy. The Covid-19 pandemic affects the Saudi Arabian and Indonesian economies, the capital market in Indonesia, the West Nusa Tenggara region's economy, Indonesia, international financial markets, the world's economy, and macroeconomics (Wulandari & Hidayat, 2020).

Economic growth is essential for reducing poverty and generating the resources necessary for human development and environmental preservation (Surya *et al.*, 2021). From the 1970s through the new order era and up until the present, poverty has been a significant obstacle to Indonesia's economic development (Ravallion, 2020), so topics relating to poverty are still in demand for discussion. The government has consistently prioritized reduction efforts to not significantly affect the stability of national and state life (Nugroho, Amir, Maududy, & Marlina, 2021). According to Rahmah, Wonoadi, & Zulfikar (2019), this measure should be done because the failure of poverty reduction will cause various social, economic, and political problems poverty reduction is ranked first among the Sustainable Development Goals (SDGs) for 2015 to 2030, highlighting the significance of a worldwide commitment to eradicate it in all forms. Rassanjani (2018) explained that poverty is a multidimensional problem closely related to various aspects of human life, including economic, political, socio-cultural, psychological, technological and other aspects. As a result, poverty reduction efforts require time, strategy, innovation and resources, as well as synergies between different actors.

The economy grows if there is positive growth. On the contrary, the economy shrinks if growth is negative (Hidayatullah, Darmawan, & Kallidumban, 2020). Economic expansion by itself, however, does not ensure human advancement. In addition to the pace of economic growth reflected in the statistics of GDP (Gross Domestic Product) and per capita income, security guarantees and access to education and health services are also a concern. In addition to GDP, several concepts have emerged, such as the Human

Development Index (HDI), the People's Happiness Index (Pledge) and the Economic Health Index (Aritenang, 2021).

According to Petković, Kuzman, & Barjaktarević (2020), global Gross Domestic Product (GDP) growth is influenced by a variety of factors, including capital accumulation, the productivity of natural resources, human resources, political institutions, entrepreneurship and new product development, changes in economic structure, environmental factors (diseases, natural disasters, climate change due to global warming), and the scarcity of resources and energy.

In this economic growth momentum, the agricultural sector is the main contributor to the strengthening of the Indonesian economy (Zaika & Gridin, 2020). The agricultural sector plays a vital role in the development of the Gross Domestic Product (GDP) of the Region. Farmers' welfare must be considered in addition to the agricultural industry since a good farming community will result in a thriving agricultural sector. *Nilai Tukar Petani/* Farmer Exchange Rates (NTP) is a method used to assess farmers' welfare (Amanullah *et al.*, 2020). The increase in the exchange rate of farmers will affect the sustainability of farmers in carrying out agricultural activities to produce agricultural products (Mazwan & Masyhuri, 2019).

Agriculture's objective and goal are to improve farmer welfare. However, Indonesia is currently falling behind other Asian nations in this area. Due to the numerous obstacles that prevent the development of agriculture, technology and the availability of supporting infrastructure are still inadequate. Agricultural development is a major component of rural development (Girik Allo, Satiawan, & Arsyad, 2019).

The level of farmers' welfare shows that there are farmer households classified as poor (incapable), but using economic and social indicators, (Rifa'i & Samir, 2019) shows the same results for all farmer households, including those who are considered capable. Therefore, income improvement policies are required in several aspects to assist the growth of the agricultural and non-agricultural sectors in order to increase the welfare of farmers (Sebayang, Sinaga, Harianto, & Kariyasa, 2019).

It is necessary to make the following improvements to farmer NTP in order to maximize crop farming performance: (1) improvement of upstream agriculture, in this case, related to the supply of high-quality seed grain, fertilizers and medicines, (2) The provision

of essential services, such as marketing, irrigation, transportation, development research, and consultation, as well as improvement of associated supporting subsectors for production activities (Maulini, Febrian, & Sutisna, 2019).

NTP is one of the indicators that may be used to gauge the welfare of farmers because it assesses how well their product (goods) compares to what they require for their production process (business) and households. As of January 2008, the accepted price index (IT), the price paid by the farmer index (IB), and NTP used the 2007 base year with a coverage of 32 provinces and presented data for each subsector, preceded by the price index that farmers received and those paid by farmers. The base year 1993's 23 provinces coverage is used for index price and NTP.

Horticultural crops are rated first in the average NTP order from largest to smallest, with an annual average of 101.91; food crops are second with an average of 101.37; and plantation crops are third with an average of 97.29 The study will concentrate on the NTP analysis of horticultural crops and food crops, which will be analyzed on data distribution in the last five years prior to the Covid-19 pandemic (2015-2019) and during the Covid-19 pandemic (2020-2021) from all provinces in Indonesia. It aims to see how the Covid-19 pandemic affects the value of NTP, which reflects the resilience of the agricultural sector even in a difficult economic situation The agricultural MSMEs, especially food crops and horticultural MSMEs, are included in the sustainable MSMEs category (Luminto & Harlili, 2017).

Regarding this study, farmers and MSMEs in agriculture in the food crops and horticulture sub-sector, the researcher refers to the application of the fundamental ideas of the sustainable development theory, which is later developed in the idea of sustainable agricultural development (Wang, Wang, Zhang, & Wang, 2021). A development idea known as Sustainable Development Theory tries to balance the requirements of the present with those of the future to ensure that life may continue sustainably (Kusumastuti, 2021). Agriculture plays a vital role in sustainable development and poverty alleviation (Rivai & Anugrah, 2020). The challenge for agriculture in achieving sustainable development is figuring out how to create a materially adequate, socially just, and eco-friendly society that is not obsessed with growth alone but is driven by human needs and equality in the distribution of resources used. Using the farm exchange rate analysis method outlined in

this paper, sustainable agriculture must address economic, social, and ecological challenges, particularly during the Covid-19 pandemic (Sari & Kassim, 2021).

As an agricultural country, Indonesia's population depends on the agricultural sector. Indonesia prioritizes the agricultural sector as the primary sector in development. This sector's development aims to improve farmers' welfare through increasing production and income in farming. Following the *Kabinet Indonesia Bersatu II*'s development priorities, the 2010–2014 National Research Agenda in the area of food security states that the development of food security is focused on enhancing food security and sustaining agricultural revitalization in order to achieve food independence, boost the competitiveness of agricultural products, raise farmers' incomes, and protect the environment and natural resources (Nugraha, Alamsyah, & Sahuri, 2018). From 2010 to 2014, the agriculture sector's GDP was planned to grow by 3.7% and the farmer exchange rate index also increased from 115 to 120 in 2014 annually.

Strong and quick economic growth is needed because the agriculture sector is Indonesia's population's primary source of support (Rozaki, 2020). This sector is also one of the main components of the government's programs and strategies to alleviate poverty. In the past, Indonesia's agriculture has produced positive outcomes and contributed significantly to the country's economic growth, particularly by generating jobs and significantly reducing poverty under the triple-track development objectives outlined in the Millennium Development Goals (MDGs) (Drean & Lestari Widarni, 2021). This can be accomplished by concentrating on staples like rice, corn, sugar, and soybeans, as well as agricultural intensification and extensification. Since long ago, traditional community groups worldwide and in Indonesia have had local/traditional knowledge about natural resource management. This knowledge, commonly called traditional ecological knowledge, is obtained from accumulated observations over a long period of time and passed down from generation to generation (Ludwig & Macnaghten, 2020).

RESEARCH METHOD

Stage 1

This study uses a desk-review method concerning the definition according to Froese & Bader (2019), which is to collect secondary data previously collected without conducting

a field survey. In addition, Froese & Bader (2019) explained that the publication of statistical data is one of the important data sources for research using the desk-review method. The type of data collected in this study is in the form of the release of statistical data from the Central Statistics Agency (BPS) for the 2015-2021 period in Farmer Exchange Rates (NTP). The data taken are very relevant to the agricultural sector of the food crops and horticulture subsector. Secondary data from statistical publications during 2015-2021 were analyzed in steps as explained Martono (2011), as follows: a) Data processing uses Microsoft Excel in Windows 10.0 and SPSS 2 5.0; b) Data presentation in the form of line charts and bar charts; c) Interpretation of the results of processing and presentation of data descriptively.

The data were analyzed using Pearson bivariate correlation statistics with the Eta correlation test. The Eta test is a correlation test between two variables that is used if the data scale of the two variables is not the same, where the first variable is a nominal data scale while the second variable is an interval data scale.

Table 1
The Strength of Correlation Relationship

Correlation Coefficient	The Strength of the Relationship
0.00	No correlation
0.01 – 0.09	Correlations are less meaningful
0.10 – 0.29	Weak correlation
0.30 – 0.49	Moderate correlation
0.50 – 0.69	Strong correlation
0.70 – 0.89	Very strong correlation
>0.90	Correlations are close to perfect

Source: Martono (2011)

Data on the development of the Farmer Exchange Rate (NTP) is sourced from the Central Statistics Agency (BPS), namely; a) The price index paid by farmers (IB) is compiled based on data from a monthly consumer price statistics survey in rural market; b) The price index received by farmers (IT) is sourced from the results of price surveys at the producer level (farm gate), carried out every month; c) The IT and IB are calculated using the developed Laspeyres formula.

NTP is the ratio between IT and IB, which is expressed in percentage terms:

$$NTP = \frac{IT}{IB} x\,100\ \%$$

Definition of the Farmer Exchange Rate Concept

The Farmer Exchange Rate (NTP) is the ratio between the price index received by farmers (IT) and the price index paid by farmers (IB) expressed in percentage (BPS, 2020). Conceptually, the Farmer Exchange Rate (NTP) is the exchangeability of agricultural goods (products) produced by farmers with goods or services needed for household consumption and agricultural production. The Farmer Exchange Rate (NTP) is one proxy indicator to see the farmer welfare level. This result index can also be used to show the trade of agricultural products with goods and services consumed and for production costs. Thus, there are indications that the higher the NTP, the relatively more prosperous the farmers' life level. In general, there are 3 NTP criteria according to Pradana et al. (2020), namely: a) NTP > 100 means NTP at a certain period is better than NTP in the base year; b) NTP = 100 means that the NTP at a given period equals the NTP in the base year; c) NTP < 100 means that the NTP at a certain period decrease compared to the NTP in the base year.

The constituent elements of the farmer's exchange rate are the price index that farmers receive (IT) and the price index paid by farmers (IB). The farmer's price index (IT) compares the price that the farmer received in the year in force and that price in the base year. The price index received by farmers includes two groups, namely: a) Foodstuff Plant Group (TBM): Rice group index, Palawija group index, Vegetable groups index, Index of fruit clusters; b) People's Trade Plant Group (TPR): Index of the crop group of smallholder plantations.

Meanwhile, comparing the price paid by farmers in the applicable year and the price paid by farmers in the base year is an index of the price paid by farmers (IB). The price index paid by farmers includes two major groups, namely: a) Household Consumption (KRT): Food group index, Housing group index, Clothing group index, Group index of miscellaneous goods and services; b) Production Cost Group & Addition of Capital Goods (BPPBM): Non-production factors group index, Wage group index, Other groups index, The group of additions of capital goods index.

The KRT group includes food, housing, clothing and various goods and services. The BPPBM group includes production costs, non-production factors and the addition of capital goods. NTP is determined by the interaction between four separate price elements, including agricultural output prices, agricultural input prices, urban industrial sector output prices and non-agricultural sector input prices. NTP is one of the indicators that are useful for measuring the level of welfare of farmers because it measures the ability of products (commodities) produced/sold by farmers compared to the products needed by farmers both for the production process (business) and for the consumption of farmer households.

Since January 2008, IT, IB and NTP used the base year 2007 with coverage of 32 provinces and the presentation of data for each sub-sector, previously the price index received by farmers and the price index paid by farmers and NTP used the base year 1993 with local coverage of 23 provinces.

The formulation of the NTP concept uses the concept of BPS, namely the price index received and the price index purchased by farmers are calculated according to the Laspeyres method. Thus, the amount exchange rate published by BPS is formulated as follows:

$$NT = ITIB \times 100, \text{ where;}$$

$$It = PtPt - 1 \times Pt - 1Q0P0Q0 \times 100$$

It is the index, and *Pt* is the price of the-*t; Pt-1Qo* is the *t-1* month consumption value, and PoQo is the base year consumption value.

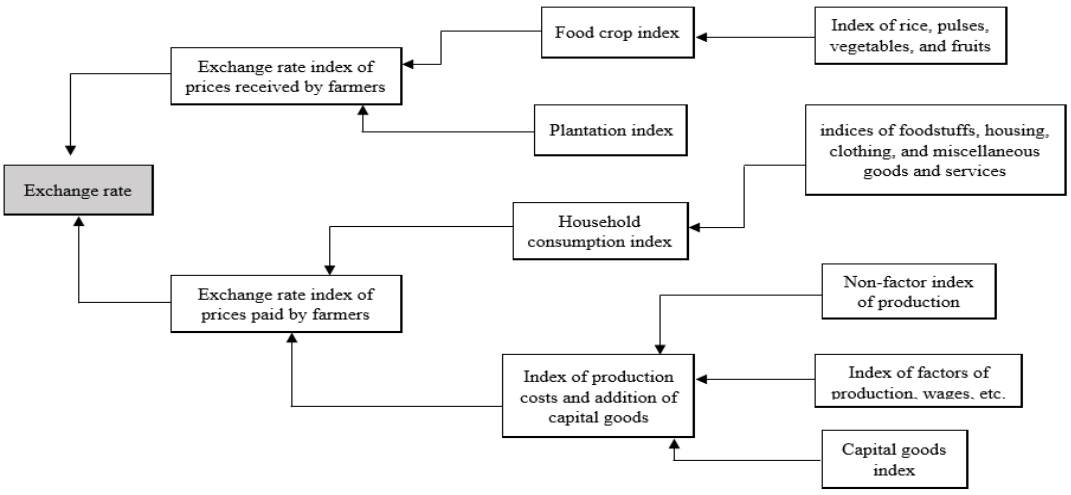


Figure 1
Elements that Make Up the Farmer's Exchange Rate
Source: Chukurna et al. (2019)

Stage 2

The implementation of the activity program is in the form of training on composting and its application to marginal soils using the Edamame soybean plant, which is analyzed in a descriptive qualitative.

RESULTS AND DISCUSSION

Data Analysis Desk Review NTP Agriculture

According to Hague et al. (2013), desk-review research refers to the definition of collecting secondary data or data collected previously without conducting field surveys. In addition, Hague et al. (2013) explained that the publication of statistical data is one of the essential data sources for research using the desk-review method. The type of data collected in this study is in the form of the release of statistical data from the Central Statistics Agency (BPS) for the 2015-2021 period of farmer exchange rates (NTP). The data taken are very relevant to the agricultural sector of the food crops and horticulture subsector. Based on data taken from BPS, NTP data were obtained every month from 2015-2021 from 34 provinces. Based on this data, the average NTP per year is analyzed, which are divided into 2 periods, the period before Covid 19 (2015-2019) and the period during Covid-19 (2020-2021).

The results of the analysis of NTP data for each province are quite varied, with the average NTP value of food crops before Covid 19 was 100.04 and during Covid 19 was 98.75, while the NTP of horticultural crops successively before and during Covid 19 it was 101.40 and 102.54. The NTP data of each province of the agricultural sector of food crops and horticulture during the period 2015-2020 is presented in Figures 1 and 2. The average NTP value of the agricultural sector of food crops and horticulture presented in Table 2.

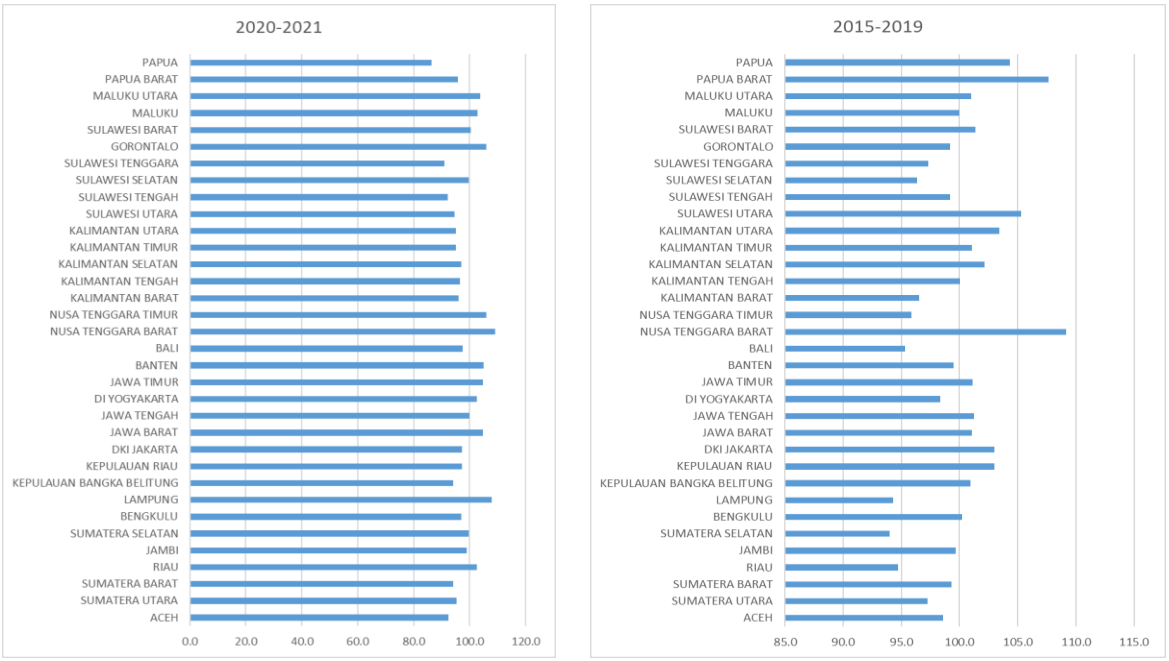


Figure 1
Average NTP per Year of the Agricultural Sector of Food Crops for the Period 2015-2021.

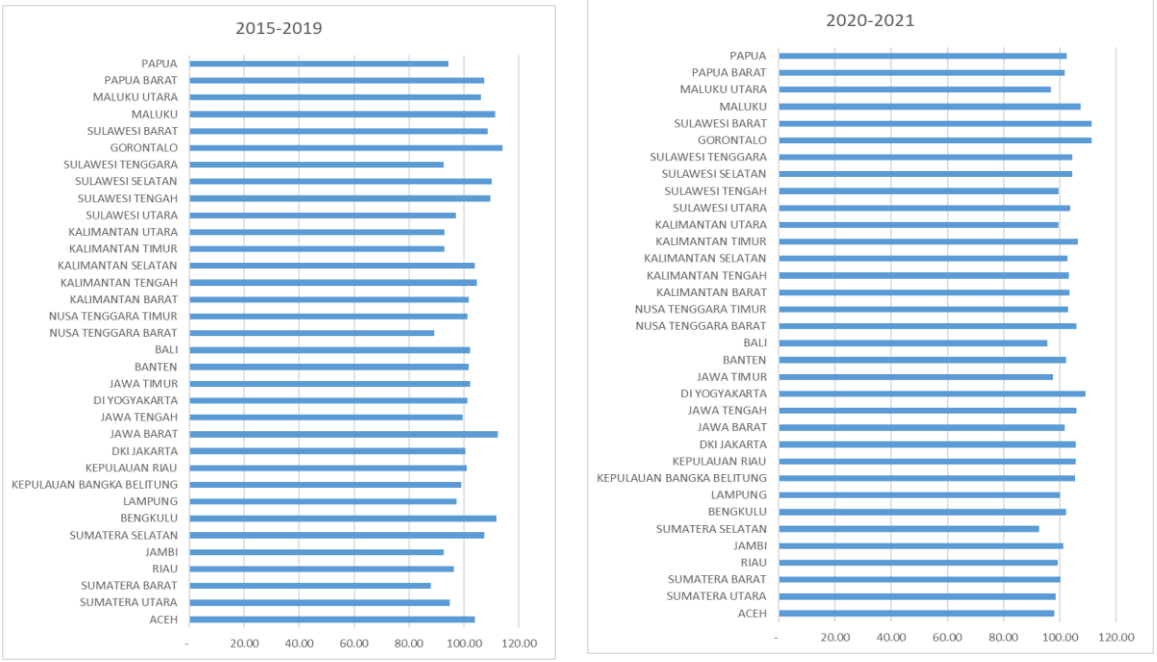


Figure 2
Average NTP Per Year of Horticultural Crop Farming Sector for The Period 2015-2021.

Source: Central Statistics Agency (BPS) processed by the researchers

Table 2
The Average Agricultural NTP of 34 Provinces in Indonesia for the Period 2015-2021

	NTP 2015-2019	NTP 2020-2021
Food		
Min	93.99	86.33
Max	109.14	109.00
Average	100.04	98.75
Horticulture		
Min	87.85	92.54
Max	114.06	111.37
Average	101.40	102.54

Economic Structure in Indonesia

The performance of the agricultural sector in 2020 was highly appreciated. Because, at a time when almost all industries are paralyzed due to the Covid-19 pandemic, the agricultural industry exists. Agricultural industries/MSMEs are expected to be the savior of the economy from a deeper recession, the engine of economic growth, and absorb an overflow of labor from other sectors affected by the pandemic.

According to data from the Central Statistics Agency (BPS, 2020), the growth rate of Gross Domestic Product (GDP) of the agricultural sector (excluding forestry and fisheries) in the third quarter of 2020 compared to the third quarter of 2019 reached 3.6%, where food crops experienced the highest increase of 1%, followed by horticultural crops of 5.60%. These export goods contributed 2.51% to the country's total export turnover in the same period amounting to 1 6.78 billion USD. Export growth was the highest, where the oil and gas sector only reached 31.59%, and mining as well as other industries also increased by 22.99%. The Farmer Exchange Rate (NTP) reflecting the level of farmer welfare also increased from a total of 103.6.

Based on the analysis of sector trend data for 2015-2019, it can be seen that it is generally dominated by the manufacturing and service sectors in both the PMDN and FDI industries. The food crop sector is at a relatively stagnant index value. However, when further analyzed during the Covid-19 pandemic period through the NTP index value, there was a significant change compared to other sectors that experienced decline, especially in the service and manufacturing industries such as hospitality, transportation, and other services that are not directly related to the basic needs of the community. It is in line with

the theory of sustainable development developed in the concept of sustainable agricultural development, where the development of the field of food security is directed to improve food security and continue agricultural revitalization in order to realize food independence, increase the competitiveness of agricultural products, increase in farmers' incomes, as well as environmental and natural resource sustainability.

Bivariate (Correlation) NTP Horticulture *Occurrences of Covid

Bivariate analysis is an analysis that is carried out to find out the relationship between two variables. In this analysis, two measurements are made for each observation. In a bivariate analysis, the samples used can be paired or each independent with its treatment. In general, in a bivariate analysis, the variables used can be interconnected or independent of each other. Connecting means that the same sample received two different measurements. While independent means that measurements are carried out on two different groups of samples.

Data Normality Test

The results of the normality test using the Kolmogorov Test show that the value of t calculated on each variable is 0.053 and 0.058 with the P value of the Kolmogorov test is both 0.200 > 0. 05, then the residual is normally distributed.

Table 3
Normality Test Results

		Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	Time	Statistic	df	Sig.	Statistic	df	Sig.
NTP	Before Covid	.053	146	.200*	.990	146	.395
	During Covid	.058	68	.200*	.985	68	.570

*. This is a lower bound of the true significance.

a. Lilliefors Significance Correction

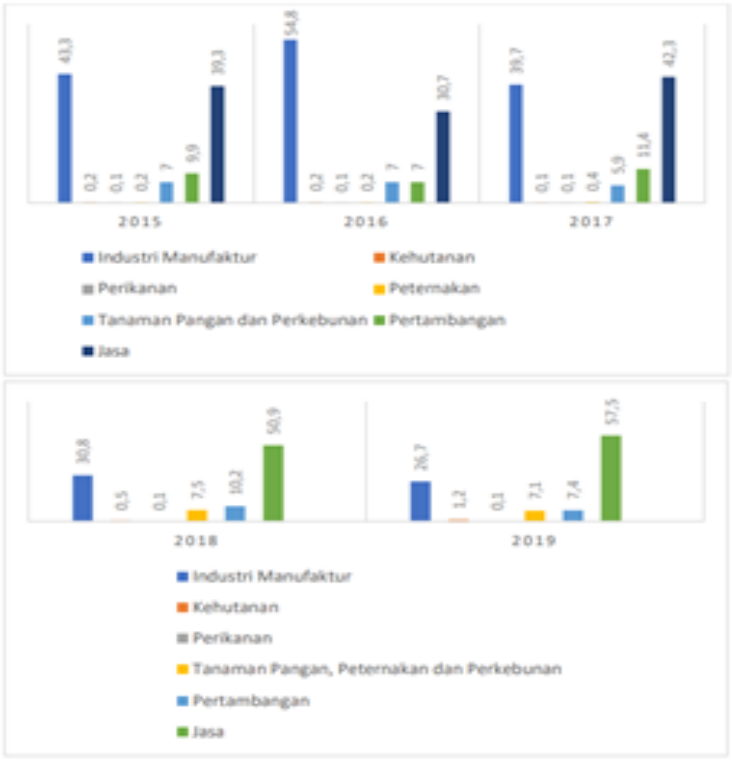


Figure 3
Trends in Sector of PMDN (Top) and PMA (Bottom) in 2015-2019 (in Percent)
Source: BKPM, 2020

Correlation of Eta NTP *Occurrences

From the table is known the value of sig. NTP * Occurrences is 0.199 > 0.05, F counts 1.661, then Ho is accepted, which means there is no significant correlation between the NTP variable and the Covid-19 Event. Value 0.088 exposes a weak relationship between NTP * Occurrences. Square of eta $(0.088)^2$=0. 008 indicates that 0.8% of NTP's relationship to Covid incidence, but is not meaningful because the test results are not significant.

Table 4
Anova Test and Correlation of Eta NTP and Occurrences

		Sum of Squares	df	Mean Square	F	Sig.
NTP * Occurrence	Between Groups	81.4	1	81.4	1.661	.199
	Within Groups	10391.9	212	49.0		
	Total	10473.3	213			

a. With fewer than three groups, linearity measures for NTP * Occurrence cannot be computed.

Measures of Association		
	Eta	Eta Squared
NTP * Occurrence	.088	.008

Univariate (Descriptive) NTP Food Crops*Covid Occurrence

Data Normality Test

The result of the normality test using the Kolmogorov test is the calculated t value on each variable is 0.072 and 0.072 with P-value the Kolmogorov test is both 0.077 and 0.200 > 0.05, then the residual distribution is normal.

Table 5
Data Normality Test Results

		Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	Time	Statistic	df	Sig.	Statistic	df	Sig.
NTP	Before Covid	.072	136	.077	.984	136	.125
	During Covid	.072	102	.200*	.970	102	.020

*. This is a lower bound of the true significance.

a. Lilliefors Significance Correction

Bivariate (Correlation) NTP Food Crops * Occurrences of Covid

From the table is known the value of sig. NTP * Occurrence is 0.274 > 0.05, F counts 1.203, then Ho is accepted, which means there is no significant correlation between the NTP variable and Occurrence. 0.071 shows a weak relationship between NTP *Occurence. Square of ETA $(0.071)^2 = 0.005$ indicates that 0.5% of NTP's relationship to Covid incidence, but is not meaningful because the test results are not significant.

Table 6
Anova Test and Correlation of Eta NTP and Occurrence of K Covid 19

		Sum of Squares	df	Mean Square	F	Sig.
NTP Occurrence	*Between Groups	34.9	1	34.9	1.203	.274
	Within Groups	6848.9	236	29.0		
	Total	6883.8	237			

a. With fewer than three groups, linearity measures for NTP
* Occurrence cannot be computed.

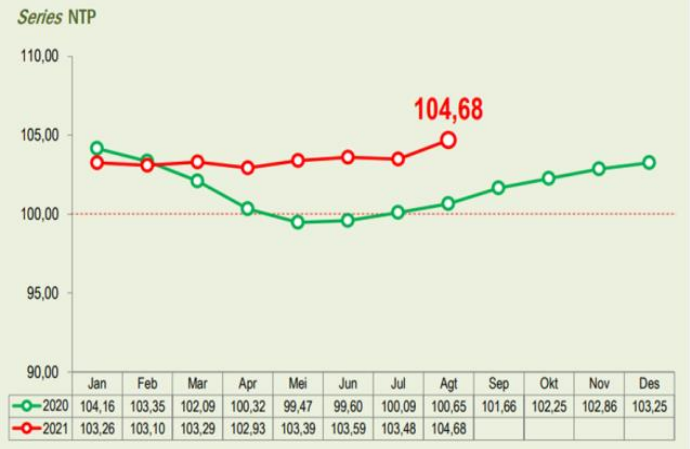
Measures of Association

		Eta	Eta Squared
NTP	* Occurrence	.071	.005

Based on the results analyzed, it is seen that community empowerment is increased through using waste into compost and Eco-Enzyme, as well as land use, can increase farmers' exchange rates.

Farmers' Exchange Rate Developments During the Covid-19 Pandemic

In the following analysis, NTP, a relative indicator of farmer welfare during the Covid-19 pandemic, experienced a development trend (Figure 2). It correlates with a general analysis of all relatively resilient sectors during the Covid-19 pandemic, namely the agricultural sector or farmer of MSMEs.



	Jan	Feb	Mar	Apr	Mei	Jun	Jul	Agt	Sep	Okt	Nov	Des
2020	104,16	103,35	102,09	100,32	99,47	99,60	100,09	100,65	101,66	102,25	102,86	103,25
2021	103,26	103,10	103,29	102,93	103,39	103,59	103,48	104,68				

Figure 4
Trends in the Development of NTP during the Covid-19 Pandemic Period

In contrast to the research results of Qodri, Wulandari, & Sumarsono (2020) in Bangka Belitung Province, the average farmer exchange rate from 2013-2020 is 93.98 percent. It is still below the index value of 100, which means that food crop farmers in the province of the area are still less prosperous. It may be due to the relatively isolated Bangka-Belitung Islands area with narrow agricultural land conditions and marginal soil types (sand soil), predominantly tin mining areas. The productivity of agricultural products

is still far from these expectations. One contributing factor is the quality of human resources, which is still low in managing agricultural land, where most farmers in Indonesia use manual systems in managing agricultural land, including in the Bangka Belitung Islands.

On the other hand, the cause of the low NTP is that product prices are increasingly high, and selling prices are low (Wibowo, Chrismanto, Santoso, & Delima, 2020). For example, the welfare of soybean farmers is still in the low category, with an NTP value of 61.18 and an NTPRP value of 0.62. It is because the income they receive is not sufficient for the household needs of soybean farmers. The farmer welfare indicator shows that the welfare of farmers is only in the range of 104.68, but in general, this figure is still above the value of 100, despite entering the Covid-19 pandemic (Vigors & Lawrence, 2019).

Intensification of the agricultural sector using organic fertilizers can increase the value of NTP (Ramirez-Contreras *et al.*, 2022). The difference in the base year influences the direction of the trend of the farmer's exchange rate, and in the rainy season, the farmer's exchange rate tends to be lower. Increases in farmer output do not necessarily result in a gain in NTP, but rather in a fall in NTP because NTP is only measured using the price ratio.

The government's role is to increase farmers' income through subsidizing production facilities, providing the infrastructure. Also, policies that control household consumption expenditures (such as the provision of Raskin, education subsidies, health subsidies, and others) are considered very relevant to improve the welfare of farmer households.

The government should pay greater attention to farmer welfare to enhance productivity (Faridah & Syechalad, 2016). Referring to the government's efforts to maintain the agricultural UMKM sector to survive and develop even though it enters the economic situation due to the Covid-19 pandemic, it is by proposing the 5CB (Five Ways of Action) concept, namely increasing production capacity, diversifying local food, strengthening reserves and food logistics systems, developing modern agriculture, and the triple movement of export.

Farmer Empowerment Solution

The object of farmers is the community and farmer groups in the Jangkang Village, Dendang District, East Belitung Regency, Bangka-Belitung Province. The essential ingredients of compost are agricultural waste in the form of rice waste, empty fruit bunches, and vegetable and fruit waste. Previously, the trash was discarded and disposed away at a rubbish disposal location. After receiving an explanation about the importance of organic waste, the current high price of chemical fertilizers, and its impact on the environment, farmers are enthusiastic about using the waste to make organic compost and Eco-Enzyme fertilizers. Composting to maturity takes about 30 – 45 days, with the addition of Decomposer EM-4 or Trichoderma.

One farmer group can produce 1000 kg of organic compost and 50 liters of Eco-Enzyme. The farmer group then packs the composted organic fertilizer in 10 kg packages, part of which is sold through farm shops and partly for use on their farms. The selling price of organic fertilizer is Rp. 5000 per kg, with a production cost of Rp. 2000 per kg, farmers get a gross profit of Rp. 3000. This has the potential to increase farmers' income inputs. In addition, Eco-Enzyme is an organic pesticide, with one package per liter sold for Rp. 20000, with a production cost of Rp. 5000, of course, this is enough to provide a margin of Rp. 15000 for other additional income for farmers.

Figure 5
Composting and Eco-Enzyme Training Activities in Jangkang Village, Dendang District, East Belitung Regency

In the use of marginal land and home yards, farmers use materials around, such as used mineral glasses as a planting medium with added compost that has been made as much

as 100 grams per baby bag. Spraying plants to avoid pests and diseases only uses Eco-Enzyme with a concentration of 1 ml per liter of water.

Figure 6
Land Use by Growing Vegetables and other Short-Crops

East Belitung Regency has a rather high vegetable price level, with 1 kg of vegetables selling for Rp. 30000-45000, with a production cost of Rp.10000. Farmers get a reasonably high addition from the sale of vegetables with a margin of > 70%. Vegetable sources in East Belitung Regency are generally obtained from outside the region, such as Jakarta, South Sumatra and West Sumatra. Therefore, the price level of vegetables is high. An opportunity for farmers to increase the farmer's exchange rate through empowerment programs and utilization of waste and marginal land and house yards.

CONCLUSION

During the period before the Covid-19 pandemic and the Covid-19 pandemic, the dominance of the agricultural MSMEs sector, especially food crops and horticulture, was relatively consistent and even experienced a development trend. The Eta correlation test value shows that the Covid-19 incident has no significant effect on the Farmer's Exchange Rate, with a range of figures for the last August 2021 of 104.68. The sector is considered strategic to support the economy and is sustainable.

The 5CB (Five Ways of Action) concept proposed by the government is increasing production capacity, diversifying local food, strengthening food reserves and logistics systems, developing modern agriculture, and the triple export movement, if it can be investigated further on its correlation and contribution to economic growth or Agricultural MSMEs.

Based on the results of this research, this research has contributed to the literature how to maintain the NTP of agriculture MSMEs sectors. Therefore, given the evidence of

the sustainability of the agricultural sector during the Covid-19 pandemic, it is suggested for the sector to become a development priority in the coming years, significantly to help overcome the national economic recovery from the impact of the Covid-19 pandemic. Making it a priority means providing more support in the field, one of which is through the budget, primarily by increasing the capacity of human resources. This research is limited to determine the NTP before and after covid-19 pandemic, it is necessary to carry out further comprehensive research based on fundamental research and social innovations related to farmer empowerment concerning Farmers' Exchange Rates that are related to different era.

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