

Mitigation of the Impact of the Covid 19 Pandemic on Poverty and Income Distribution: A Case Study in Wonogiri Regency

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Abstract

The Covid pandemic had a significant impact on the economy because almost all sectors are affected. Food and Agriculture Organization (FAO) warned countries to be alert to the potential food crisis due to the COVID-19 pandemic. The research objectives are to (1) identify the income of the people affected by Covid 19, (2) analyze the changes in income, (3) formulate a mitigation model. The research method used is a survey with 240 respondents from rural communities affected by Covid 19, especially farmers and Micro, Small and Medium Enterprises (MSMEs). The analytical method used is cost and income analysis, SWOT analysis, poverty analysis and income distribution with the Gini Index approach. Covid 19 has impacted decreasing income and increasing poverty by 48.44% and the GI value of 0.604. The income distribution is increasingly widening and low/poor. Based on the SWOT analysis, the people affected by Covid 19 are in quadrant II, the point of growth and development. Mitigation model to prevent poverty and increase equity level with intensive strategy and integrative strategy. The strategy is to maintain product quality and continuity and optimization and development of marketing by utilizing government support and institutional strengthening.

1. Introduction

The Covid-19 pandemic developed into wide economic shocks because, initially, it was the root cause. Still, the impact and spread of the virus had a wide impact and developed into a "widespread economic shock", which in turn in agriculture can shake Aggregate Demand and Aggregate Supply at the same time (Siregar, 2020). If the presence and spread of this virus take a long time, then the risk to the farming system will be higher. The direct impact of farmers and agricultural input & product MSMEs faces the risk of being exposed to Covid-19 if allowed to work as usual, without effective health protocols. Availability and distribution of agricultural inputs may be disrupted, making it difficult for farmers to cultivate crops. Food security at the national level may be maintained. Still, the challenges at the micro-level of farmer households and agricultural MSMEs are partly in areas that are vulnerable to food security. The biggest challenge is food security at the fragile household level and in groups affected by the corona.

On a macro level, the Early Warning Early Action: Report on Food Security and Agriculture released by FAO in April 2020 warns countries in the world to be alert to the potential food crisis that occurs due to the Covid 19 pandemic. Almost all countries in the world are experiencing the impact of Covid 19 no exception to the impact on the agricultural sector. BAPPENAS (2020) estimates that the community affected by Covid 19 is around 72.25 million people with various compositions of various income levels, namely the poor classification (income < IDR 425,250), the vulnerable classification (income IDR 424,250 – IDR 641,000), the aspiring middle class classification (income IDR 641,000 – IDR 1,450,000), middle Class classification (income IDR 1,450,000 – IDR 7,250,000) and Upper Class classification (income > IDR 7,250,000), the highest impact is in the Poor and Vulnerable classes where this class is widely spread in the rural region . In Indonesia, it is predicted that FAO (2020) will not be affected if it is seen from the performance of Food Security. Indonesia is ranked 62 out of 113 countries in the world. Statistics Indonesia records the level of farmer welfare decreased in almost all agricultural sub-sectors, with a

decrease in the value of FTT around 1.73% (Statistics Indonesia, 2020). The decline in production and welfare levels was due to a decrease in crop production in the agricultural sector. The poverty gap index (squared poverty gap) in the agricultural sector is two times higher than that in the non-agricultural sector. The concept of Gilis et al. (1987) discussing income inequality will appear at the beginning due to two things, first when the contribution of capital owners increases, it will increase the income gap between owners and workers. Secondly, the gap at the labor level also increases when a lot of labor enters the agricultural sector. Furthermore, Chambers (1983) revealed that poverty is related to social problems, access to water resources, housing, health and sanitation services, education, and transportation. Christiansen *et al.* (2011), a sector can contribute to poverty alleviation, depending on the extent to which the poor participate in the sector. Siregar (2020) stated that the risk factors for Indonesia's food security in the era of the Covid pandemic were the covid 19 factors that are the root cause. Another factor is extreme weather resulting from climate change which causes global and domestic food stocks to fall and causes fluctuations in food prices and food logistics systems. This condition decreases farmers' income and welfare (FER = Farmer's Exchange Rate) and results in poverty of farmer households. The problem of poverty and income inequality is still an important issue in economic development. The strategy to achieve growth and income distribution in Indonesia is closely related to agriculture. Research conducted by Jonaidi (2012), using panel data from 2005-2009, obtained economic growth and poverty results. Poverty has a significant effect on economic growth.

Wonogiri Regency, as one of the regencies in Central Java Province, is also affected by climate change conditions with high rainfall, plus the Covid pandemic conditions are increasingly impacting income. On the one hand, poverty in Wonogiri Regency is already relatively high, so it becomes an interesting study to discuss the impact of Covid 19 on poverty and income distribution in Wonogiri Regency. The research objectives are to (1) identify the income of the people affected by Covid 19, (2) analyze the changes in income affected by Covid 19 on poverty and income distribution, (3) formulate a mitigation model for the impact of Covid 19 on poverty and income distribution.

2. Research Methodology

The research method used is a survey method in the Bengawan Solo watershed area, Wonogiri Regency. Rahayu, ES (2003), watershed is an area with the main phenomenon of poverty. The Bengawan Solo Watershed (DAS) in Wonogiri Regency is one area that falls into this category. Singarimbun and Sofyan (1995), the survey method is limited to the notion of a sample survey, in which information is collected from a portion of the population (sample) to represent the entire population. Location samples spread across three sub-districts (in the east) taken by Girimarto sub-district, in the south it is in Tirtomoyo sub-district and the west it is in Eramoko sub-district). A total of 240 respondents (Farmers and agricultural MSMEs) were taken by proportional random sampling. Collection can be done by interviewing, referring to structured questionnaire guidelines and focus group discussions (FGD). Analytical methods using cost and income analysis, SWOT analysis, poverty analysis and income distribution using the Gini Index approach and poverty analysis referring to Statistics Indonesia (2020). The calculation formula used is as follows:

$$P_{\alpha} = \frac{1}{n} \sum_{i=1}^q \left[\frac{z - y_i}{z} \right]^{\alpha}$$

Where,

α : 1

z: Poverty Line (IDR 341,643)

y_i : Average income per capita per month of respondents who are below poverty line ($i= 1,2,3,4,\dots,q$) $Y_i < z$

q: The number of people living below the poverty line

n: Number of respondents

The formula for calculating the depth of poverty index used is as follows:

$$P_{\alpha} = \frac{1}{n} \sum_{i=1}^q \left[\frac{z - y_i}{z} \right]^{\alpha}$$

Where,

α : 2

z: Poverty Line (IDR 341,643,-)

y_i : Average income per capita per month of respondents who are below poverty line ($i= 1,2,3,4,\dots,q$) $Y_i < z$

q: The number of people living below the poverty line

n: Number of respondents

3. Results And Discussion

3.1 Analysis of the Impact of Covid on Poverty in the Bengawan Solo Watershed, Wonogiri Regency

During the Covid pandemic, the average income of the people in the Bengawan Solo Watershed, Wonogiri Regency, contracted quite significantly, namely a decrease in community income in the Bengawan Solo Watershed, Wonogiri Regency by 48.44%. The largest affected income is from MSMEs, followed by agricultural businesses at the farmer household level. Brihandhono and Susanto (2020), the consumption pattern is reduced due to reduced income because Covid-19. By referring to the 2020 Wonogiri Regency poverty line of IDR 341,643/capita/month (Indonesia Central Bureau of Statistic, 2020). The results show that the community affected by Covid 19 in the Bengawan Solo Watershed, Wonogiri Regency, which is

included in the criteria below the poverty line, is 24.17%, meaning that there was an increase in the poor affected by Covid 19 by 24.17%. This value is categorized as high enough. Thus, the impact of Covid 19 on poverty in the Bengawan Solo watershed, Wonogiri Regency, is quite significant because the poverty line is the impact of the ongoing Covid-19 pandemic. The Covid pandemic's existence has resulted in a decrease in the purchase of farmer and MSME products, so the income received by farmer households and MSME actors has decreased.

People feel the impact of the Covid-19 pandemic, which is quite affecting the income they receive. Furthermore, to see the level of inequality in the research area, the poverty depth index in the study area can be calculated. What is meant by the poverty depth index is a measure of the average expenditure gap of each poor population towards the poverty line. The higher the index value, the farther the average population expenditure is from the poverty line. The value compared is the income per capita per month of each respondent. Analysis of the depth of poverty in rural communities obtained the poverty depth index in Wonogiri Regency of 0.26. The average income gap of each poor in the Bengawan Solo Watershed, Wonogiri Regency is 0.26.

Furthermore, the poverty severity index can be seen, which is a condition that provides an overview of the distribution of expenditure among the poor. The higher the index value, the higher the disparity in spending among the poor in the Bengawan Solo watershed area, Wonogiri Regency. In this study, the value compared is the monthly income per capita of each respondent. The poverty severity index calculation results obtained a value of 0.75 (high enough), which means that the income inequality of each poor is relatively high.

3.2 Income Distribution Analysis

The income of the community (farmers and MSMEs) in the Bengawan Solo watershed, Wonogiri Regency, is an average of IDR 8,102,110.05 per year, consisting of 60.16% of income derived from farming (rice fields, fields and yards, 15.59% from livestock products, 0.43% of income from MSME business activities such as trading in food, grocery, production processed food, income from other sources, 16.29% was obtained from pensioners, relatives' transfers and side jobs (construction, woodworking, etc.). The level of equity can be analyzed by calculating the Gini Index in Tabel 1.

The Gini index value of farming and non-farming income is in the very high inequality category because the value exceeds 0.7. However, if the two sources of income are combined into total income, the Gini index value becomes 0.604, which is still in the category of moderate inequality. The cause of the high Gini index number is influenced by the ability of each farmer household to earn income outside of farming. This is because not all farmer households can seek work outside of agriculture. In accelerating the achievement of an even level of income, it is necessary to change the attitudes and behaviour of workers in the agricultural sector and MSMEs. The attitude theory developed by Fishbein and Azjen (1975) states that a person's perspective is strongly influenced by the stimuli received, then these stimuli affect behavior. Nakajima (1986) discusses household behaviour shown in economic activities by allocating resources in production and consumption to maximize satisfaction or income. The level of the

inequality above can be described by the Lorenz Curve of each source of income. It can be seen that the non-farming income curve is very far from the perfect equality line, which means that there is a very high inequality.

3.3 SWOT analysis on Communities Affected by Covid 19

SWOT analysis can be used to identify favorable and unfavorable factors and conditions, solve current problems, recognize the challenges and obstacles faced, and formulate strategic plans to mitigate the impact of Covid-19 (Wang and Wang 2020). The actual condition of the people affected by Covid 19 has become the attention of many experts, the government and other stakeholders. This condition is widely studied and observed because it is a big problem in decision making in the context of the spread of Covid 19. There are various policies to prevent the spread of Covid 19 in social distancing, washing hands and staying at home, which has developed into (Large-Scale Social Restrictions) and other policies. Covid has caused some people to have different internal and external factors in their lives. In this study, internal factors and external factors were used to analyze the actual position of the condition.

1. Internal factors

Internal factors describe the strengths and weaknesses of business actors (agriculture and MSMEs), natural, economic, institutional and socio-cultural conditions in the Bengawan Solo watershed, Wonogiri Regency. The strengths and weaknesses that are owned to overcome the impact of Covid-19 for the farmer and MSME businesses in the Bengawan Solo watershed, Wonogiri Regency, are presented in Table 2.

2. External Factors

External factors describe the opportunities (opportunities) and threats (threats) faced by farmers, MSMEs, and stakeholders to overcome the impact of Covid-19. The following are the opportunities and threats.

3. IFE and EFE Matrix Analysis

The analysis of the IFE (Internal Factors Evaluation) matrix and the EFE (External Factors Evaluation) matrix are analyzed used to determine the critical factors from the internal and external environment to overcome the impact of Covid-19 for farmers and MSMEs in the Bengawan Solo watershed, Wonogiri Regency. IFE matrix analysis is obtained from the formulation factors of strength and weakness analysis of the internal environment. while the EFE matrix analysis is obtained from the formulation of the opportunities and threats factors from the study of the external environment. Based on the IFE and EFE analysis that has been carried out above, the value of the X coordinate is equal to 3.037, and the value of the Y coordinate is 2.512. The value of the X coordinate is said to be high. This follows the theory expressed by David (2013) that a score between 3.00-4 is considered high. The Y coordinate value is said to be moderate because it has a score between 2.00-2.99. If described in the IE matrix, the development position in the Bengawan Solo watershed, Wonogiri Regency presented in Figure 2.

The score obtained in the IFE matrix is 3,037, while the score obtained in the EFE matrix is 2,512. The IE Matrix image shows that the position of farmers and MSMEs is in quadrant IV (growing and developing). Based on this position, two strategies can be used, namely intensive strategy and integrative strategy. Intensive strategies include market penetration strategies, market development and product development. Integrative strategies include backward integration strategies, forward integration and horizontal integration (David, 2013).

The SWOT matrix analysis is used to formulate alternative strategies that are considered suitable to overcome the impact of Covid-19 for farmers and MSMEs in the Bengawan Solo watershed, Wonogiri Regency. Several alternative strategies that can be developed through the SWOT matrix are the SO (Strength-Opportunities) strategy, the WO (Weakness-Opportunities) strategy, the ST (Strength-Threat) strategy, and the WT (Weakness-Threat) strategy.

The formulation of alternative strategies to overcome the impact of Covid-19 for farmers and MSMEs in the Bengawan Solo watershed, Wonogiri Regency is carried out by considering environmental aspects and conditions during the current pandemic. An alternative strategy formulation to overcome the impact of Covid-19 for farmers and MSMEs in Wonogiri Regency using the SWOT matrix is presented in Table 4

3.4 Mitigation Models Affected by the Covid 19 Pandemic on Poverty and Income Distribution

The Covid-19 pandemic has a health impact on the community and has various social and economic effects. One of the fundamental impacts of the Covid-19 pandemic is the high level of community poverty, including farmers and MSMEs in the Bengawan Solo watershed area, Wonogiri Regency. During the pandemic, there was a decline in consumer purchasing power, falling harvest prices and disruption of marketing activities. These things cause the income of rural communities (farmers and MSMEs) to be smaller and experience poverty and income inequality. Based on the facts, there needs to be a mechanism strategy that they can do to survive during the Covid-19 pandemic. Strategies that coping mechanisms can use are methods used by individuals to solve problems, overcome changes that occur, and threaten situations both cognitively and behaviorally (Nasir and Muhith, 2011). Some strategies that can be carried out by rural communities (farmers and MSMEs) to overcome the impact of the Covid-19 pandemic based on local socio-economic conditions and natural resources in the Wonogiri watershed area, Wonogiri Regency, are described as follows:

Coping mechanisms that can be carried out for farmers need support from various parties, the most important of which is the willingness of farmers to be independent and increase their income. The attitude of farmers to want to change themselves to be more independent is essential. Research on behaviour has been widely carried out, among others by Lin and Lee (2005), that a positive attitude produces positive behaviour. Budiono's (2006) research on farmer behaviour tends to have economic and socio-cultural motives. Research by Fidelia (2009) that income affects changes in farmer behavior. Kiernan et al. (2012) social support can provide healthy behaviour change. Farmers also need intensive counselling to provide understanding and solutions to farmers' problems related to their farming. Sarwono's research (2005) that changing or educating the community requires the influence of

community figures or leaders. Sharing knowledge will define and enhance individual learning and learning in organizations (Yeo, RK. & Marquardt, 2013) such as farmer groups. Research Beebe and Masterson (1989) state that the group plays an important role in personality and behavior. Local wisdom becomes a farming management work ethic and knowledge system based on local knowledge, values, and norms. This factor refers to Michell et al. (2006) research, which states that the local knowledge system is very powerful and has had an enormous role throughout human life history to maintain the balance of the environment. Government support is also required, both physically through capital assistance and infrastructure or various policies. Nurhasim et al. (2014) said that, the policy is part of efforts to protect the poor from various political and economic dynamics. Macgregor and Warren (2006), many of the farmers are dependent on Common Agricultural Policy (CAP) subsidy support. Pricing-related policies can also be implemented to help farmers face the impact of the pandemic, both the price of production facilities and the selling price of the product. Price support policies have been used to reduce fluctuations in agricultural productivity and prices which are the main drivers of agricultural growth (Shikur, 2020).

MSME actors can carry out several strategies to overcome the impact of the COVID-19 pandemic based on local socio-economic conditions and natural resources that currently exist in the Wonogiri watershed area:

Online marketing is very much needed in a pandemic situation because there are physical restrictions. The main finding in Sultan and Sultan (2020) shows that the corona crisis is detrimental to the performance of many women MSMEs in terms of production, profit turnover. Women MSMEs were more likely to benefit from social media and promotion than other methods to reduce the sales they lost during the crisis. Social media for marketing has a positive influence on the performance of SMEs. Syaifullah *et al.* (2021), the use of social media can increase sales, productivity, customer relations, and creativity. Maintaining economic and business resilience is carried out by improving product quality and continuity while maintaining health protocols. MSMEs must consider adopting a plan to decide which products to sell or not to prevent the major losses. In addition, like any other major crisis, the enterprises can learn from the experience of the crisis itself and use that experience to plan and prepare for the future (Shafi *et al.* 2020). Efforts to increase the independence of farmers and MSMEs. Optimization strategy and marketing development through the use of government support and institutional strengthening. From the strategy *Coping Mechanism*, it is hoped that rural communities will be able to survive in their household economic resilience and food security during the Covid-19 pandemic.

4. Conclusions

The conclusion of this study is that (1) the Covid 19 pandemic has had the impact of decreasing the income of rural communities (farmers and MSMEs) and increasing poverty by 48.44% with a poverty depth index of 0.26 and a poverty depth index of 0.75, meaning that conditions This shows that the average income gap as a result of Covid 19 is getting bigger and the poverty severity index of rural communities illustrates the distribution of expenditure among the poor, the gap is getting sharper, (2) the

GI value is 0.604, the income distribution is getting wider and lower/poor, (3) the position of the lives of the people affected by Covid 19 based on the SWOT analysis is in quadrant II, namely the position of survival from the impact of Covid 19, the point of growth and development. The Covid-19 pandemic has dramatically affected the income of farmers and MSMEs in the Bengawan Solo Wonogiri watershed. Farmers and MSMEs must survive in uncertain market conditions and incomes, (4) Mitigation models to prevent poverty and increase equity are carried out with intensive and integrative strategies.

It is recommended (1) attention and cooperation between OPD/related agencies in Wonogiri Regency so that the community is immediately covered by the handling of the impact of the Covid 19 pandemic, (2) to provide short-term mitigation while still paying attention to the basic skills mastered by the community around the watershed Bengawan Solo Wonogiri, (3) efforts are made by considering local wisdom and local resources in rural community businesses (farmers and MSMEs), (4) in the long term, it is necessary to have better technology to develop agricultural businesses and MSMEs through online marketing, e-commerce, e-marketing, etc.

Abbreviations

FAO: Food and Agriculture Organization; MSMEs: Micro, Small and Medium Enterprises; SWOT: Strengths, Weakness, Opportunities, Threats; GI: Gini Index; FER: Farmer's Exchange Rate; FGD: Focus Group Discussions; IFE: Internal Factors Evaluation; EFE: External Factors Evaluation

Declarations

Availability of data and materials

The datasets supporting the findings of this study are available from the authors on reasonable request.

Competing interests

The authors declare that they have no competing interests.

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Authors' contributions

ESR, OPA and S participated in proposal development, data collection and drafted. All authors contributed to model design, data analysis, discussion of study results. All authors read and approved the final manuscript.

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Tables

Due to technical limitations, Tables 1, 2, 3 and 4 are only available as a download in the Supplemental Files section.

References

BAPPENAS (2020) www.bappenas.go.id Accessed 28 March 2021

Beebe, SA. & Masterson JT (1989) *Communicating in small groups: principles and practices*. Coillins Publishers. Glenview, illinois, Harper.

Budiono (2006) Hubungan karakteristik petani tepi hutan dengan perilaku mereka dalam melestarikan hutan lindung di 12 desa Propinsi Lampung. *J Penyuiuhan Juni 2 (2)* (In Indonesian)

Brihandhono A. and Susanto W.E (2020) Analysis of the factor that influence the decision to buy chicken eggs during the covid-19 pandemic. Present at 2nd Annual Conference on Social Science and Humanities (ANCOSH 2020)

Chambers R (1983) *Rural development: Putting the last first*. Harlow, Prentice Hall.

Christiaensen L, Demery L, & Kuhl J (2011). The (evolving) role of agriculture in poverty reduction—An empirical perspective. *J of Development Economics* 96(2): 239-54.
<https://doi.org/10.1016/j.jdeveco.2010.10.006>

David Fred R (2013) *Analisis SWOT: Teknik membedah kasus bisnis*. Gramedia Pustaka Utama. Jakarta

Fidelia N. & Chidi N (2009) Farmers' Sustained Adoption Decision Behaviors of Maize/Cassava Intercrop Technology in Imo State: Lessons for Extension Policy Development, *World Rural Observations*, 12: 87-92.

Fishbein and Ajzen, 1 (1975) The theory of planned behavior. *Organizational Behavior and Human Decision Processes* 50 (2): 179-211

Food and Agriculture Organization of the United Nations FAO (2020). Sustainable Crop production and COVID-19

Gillis, E.J., Rijnbeek, R., Kling, R., Speiser, T.W. and Fritz, T.A. (1987) Do flux transfer events cause long-period micropulsations in the dayside magnetosphere?. *J of Geophysical Research* 92. doi: 10.1029/JA092iA06p05820

Indonesia Central Bureau of Statistic (2020) www.bps.go.id Accessed 28 March 2021

Jonaidi, A. (2012) Analisis Pertumbuhan Ekonomi dan Kemiskinan Di Indonesia. *J Kajian Ekonomi* 1(1) 140-164

Kiernan M., Moore SD., Schoffman DE., Lee K., King AC., Taylor CB., Kiernan NE., Perri MG. (2012) Social Support for Healthy Behaviors; Scale Psychometrics and Prediction of Weight Loss Among Women in a Behavioral Program. *Behavior and Psycholog* : 756-764. <https://doi.org/10.1038/oby.2011.293>

Lin, HF. & Lee, GG (2004) Perceptions of senior managers toward know1edge- sharing behavior. *Management Decision* 42: 108-125. <https://doi.org/10.1108/00251740410510181>

Macgregor, CJ, & Warren, CR (2006) Adopting sustainable farm management practices within a Nitrate Vulnerable Zone in Scotland.' *The view from the farm. Agriculture, Ecosystems & Environment* 113: 14. <https://doi.org/10.1016/j.agee.2005.09.003>

Michael, P (2006) Peasant Prospect in the NeoliberalAge. *New Political Economy* 11(3): 407-418. <https://doi.org/10.1080/13563460600841041>

Nakajima, C (1986) *Subjective equilibrium theory of the farm household*. Elsevier Science Publishers. Amsterdam.

Nasir A, Abdul Muhith (2011) *Metodologi Penelitian Kesehatan*. Mulia Medika. Yogyakarta.

Nurhasim, M.,Rahman, A., Cahyono, H., dan Wiratama (2014) *Model Kebijakan yang Memihak Kelompok/Orang Miskin berbasis Good Governance*. LIPI Press. Jakarta

Rahayu, ES (2003) Dampak Struktur Pendapatan Rumah Tangga di Daerah Pasang Surut Terhadap Kelestarian Waduk Gajah Mungkur Wonogiri. *Empirika* 16(2). (In Indonesian)

Sarwono, SW (2002) Psikologi Sosial: Individu dan Teori-Teori Psikologi Sosial. Balai Pustaka. Jakarta (In Indonesian)

Shafi, M., Liu N, Ren W (2020) Impact of COVID-19 pandemic on micro, small, and medium-sized Enterprises operating in Pakistan. Research in Globalization
2. <https://doi.org/10.1016/j.resglo.2020.100018>

Shikur (2020) Agricultural policies, agricultural production and rural households' welfare in Ethiopia. Economic Structures 9: 50. <https://doi.org/10.1186/s40008-020-00228-y>

Singarimbun, M dan Sofyan Effendi (1995) Metode Penelitian Survei. LP3ES. Jakarta. (In Indonesian).

Siregar Hermanto (2020) Sistem Usahatani Tangguh Era Covid-19 Dan Risiko Ketidakpastian Pasar. Paper presented at Seminar nasional "webinar agribisnis 2020" jurusan agribisnis-faperta, Unmul bekerja sama dengan Perhepi Komda Samarinda, 4 Juni 2020 (In Indonesian)

Sultan, S. and Sultan, W.I.M. (2020) Women MSMEs in times of crisis: challenges and opportunities. *J of Small Business and Enterprise Development* 27(7): 1069-1083. <https://doi.org/10.1108/JSBED-06-2020-0226>

Syaifullah, J (2021) Social Media Marketing and Business Performance of MSMEs During the COVID-19 Pandemic. *The Journal of Asian Finance, Economics and Business*. Korea Distribution Science Association 8(2): 523–531 doi: 10.13106/JAFEB.2021.VOL8.NO2.0523

Yeo, RK. & Marquardt, MJ. (2013) To share or not to share: self-perception and knowledge sharing intent. *Knowledge Management Research and Practice* 13(3): 311-328. <https://doi.org/10.1057/kmrp.2013.52>

Wang, J. and Wang, Z. (2020) Strengths, Weaknesses, Opportunities and Threats (SWOT) Analysis of China's Prevention and Control Strategy for the COVID-19 Epidemic. *J Environ. Res. Public Health* 17 <https://doi.org/10.3390/ijerph17072235>

Figures

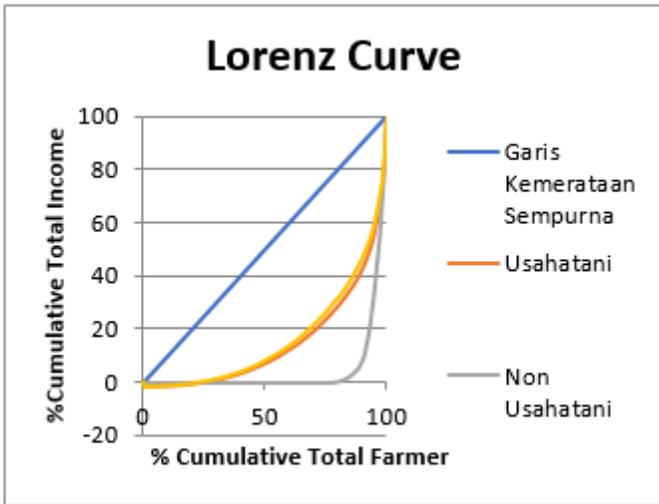


Figure 1

Lorenz Curve

Total IFE Score (2.777)

Tall	Currently	Low
3.00-4.00	2.00-2.99	1.00-1.99

Total EFE Value (2.753)	Tall 3.00-4.00	I Grow and Build	II Grow and Build	III Preserve and Maintain
	Currently 2.00-2.99	IV Grow and Build	V Preserve and Maintain	VI Harvest or Divest
	Low 1.00-1.99	VII Preserve and Maintain	VIII Harvest or Divest	IX Harvest or Divest

Figure 2

Internal-External (IE) Matrix

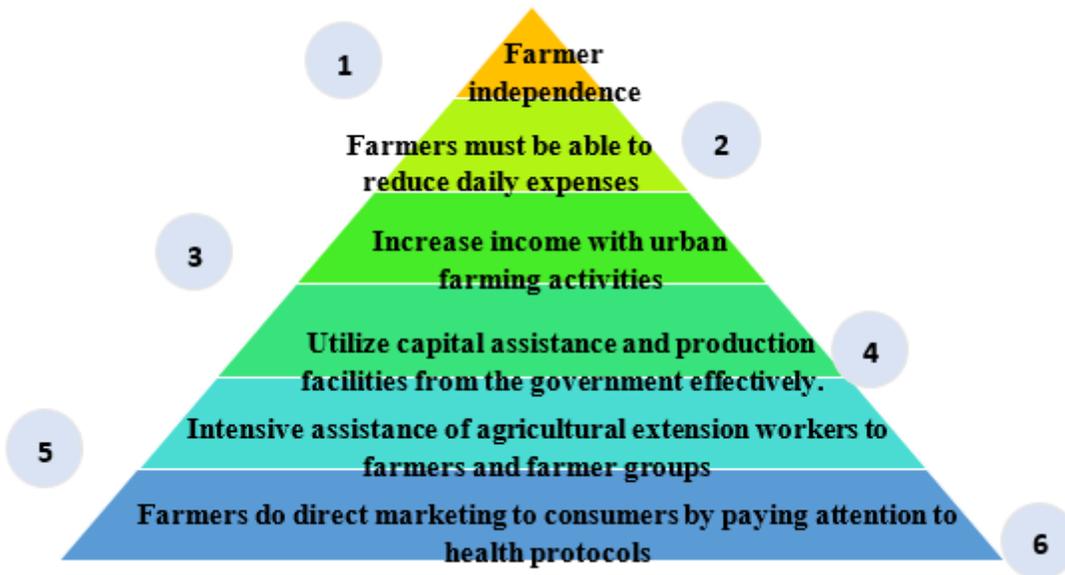


Figure 3

Coping mechanism for farmers in the Wonogiri watershed area

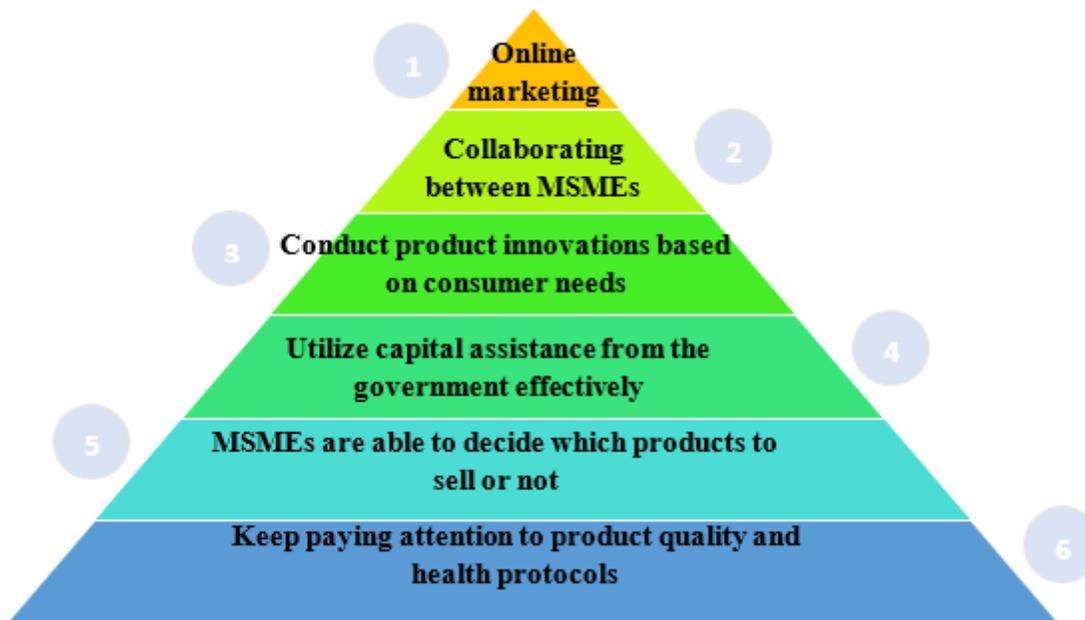


Figure 4

Coping mechanism for MSMEs in the Wonogiri watershed area

Supplementary Files

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