

CHAPTER V. CONCLUSIONS AND IMPLICATIONS

A. Conclusions

Based on the results obtained from this study, it can be concluded that:

1. Agricultural Land (AL) has a positive and significant effect on Food Security (FSI)

This means that the more agricultural land is available, the higher the level of food security in an area. Land area is the main factor in supporting food availability, because it determines the production capacity and food independence of the region. Areas such as Serang and Pandeglang Regencies that have large agricultural land have proven to be the main support for food supply in Banten Province, while areas with limited land show greater dependence on external supplies. Thus, the results of this study confirm that efforts to protect and optimize the use of agricultural land are very important to maintain the stability of regional food security in a sustainable manner.

2. Climate Change (CC) has a negative and significant impact on Food Security (FSI)

This means that these results are in line with theories and hypotheses that climate change through an increase in average temperature has a direct impact on a decrease in agricultural production and food

availability. Climate variability has proven to be a factor that hinders the sustainability of food production, especially in areas with high dependence on rainfed agricultural systems.

3. Rice Productivity (RP) has a insignificant effect on Food Security (FSI)

This means that increasing productivity has not been able to optimally strengthen regional food security because there are still obstacles in terms of distribution, food access, and equitable distribution of crops. Spatial inequality between producer and consumption areas causes an increase in production output to not directly increase food security at the provincial level. This shows that increasing productivity must be followed by improvements in distribution systems, infrastructure, and food access to have a significant effect on food security.

B. Implication

Based on the results of this study, the implications are as follows:

1. The agricultural land has an effect on food security, so this result indicates that local governments need to strengthen the Sustainable Food Agricultural Land policies more strictly and integrated in regional spatial planning. This effort can be done by optimizing the implementation of the Regional Spatial Plan so that the conversion of agricultural land can be controlled, as well as providing economic incentives for farmers who maintain productive land. In addition, it is necessary to increase the

effectiveness of Regional Regulation Number 2 of 2011 concerning the Protection of Sustainable Food Agricultural Land, by strengthening coordination between agencies and expanding the scope of protected agricultural areas in Serang, Lebak, and Pandeglang Regencies as priority zones for food production. Bedding optimization programs and intensification of environmentally friendly agriculture also need to be expanded so that increased production does not depend on new land clearing.

2. Climate change has a significant effect on food security, so local governments need to strengthen the development of climate-adaptive agriculture, such as the use of heat- and drought-resistant rice varieties and the application of efficient irrigation technology (drip irrigation and rainwater harvesting) to overcome water limitations in the southern region of Banten such as Lebak and Pandeglang Regencies. In addition, strengthening the climate early warning system is important so that farmers can adjust planting time to local climate patterns. The Banten Provincial Government also needs to increase the effectiveness of the Regional Action Plan for Climate Change Adaptation and Mitigation and the Agricultural Sector Climate Change Adaptation Strategy by expanding the application of climate-friendly technology, strengthening the Climate Field School initiated by BMKG in Banten, and increasing the capacity of farmers through training and collaboration with regional universities. In addition,

the Banten Provincial Government has implemented various measures to handle the spread of pests due to increased temperatures, such as the Plant Pests Organism Control program, the implementation of Integrated Pest Control, the provision of irrigation pumps for drought mitigation, and cross-agency coordination in the Rice Planting Area Movement, which needs to be strengthened by the integration of climate-based early warning systems, the expansion of pest and heat-resistant varieties, and the increase in the capacity of farmers to adapt to temperature changes and pest attacks. The integration of climate mitigation policies in the Banten Province Regional Medium-Term Development Plan and Regional Spatial Plan is important to strengthen the resilience of the agricultural sector to the impact of rising global temperatures, while maintaining regional food security stability amid urbanization and economic growth pressures.

C. Research Limitations

This study has a number of limitations that need to be considered in the interpretation of the results. The main limitation lies in the use of secondary data that is entirely sourced from Statistics Indonesia. Another limitation lies in the annual climate change data, so seasonal variations such as flood intensity, drought, and pest attacks that can affect agricultural yields are not recorded in detail. This limitation may cause estimates of relationships between variables to become more general, rather than specific to extreme climate events.

Therefore, further research is recommended to integrate climate disaster data and spatial data so that the analysis of food security in Banten Province becomes more accurate and comprehensive. Thus, the results of this study can be seen as a representation of the relationship between variables in the long term.

