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**ACTION PLAN FOR 2024 FOOD ESTATE DEVELOPMENT AREA PLANNING IN MERANTI
DISTRICT: A SUSTAINABLE APPROACH**

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Abstract

This study aims to examine the 2024 Food Estate Development Regional Planning Action Plan in Meranti District: A Sustainable Approach. The qualitative research method used in this study is expected to provide a deep understanding of food estate development in Meranti District. With this approach, the research not only reveals statistical data, but also explores people's experiences and expectations related to sustainable regional planning. Research Results To ensure the success of the program, an effective monitoring and evaluation system is needed. The establishment of sustainability indicators will help in evaluating the impact of the program on a regular basis and allow for strategy adjustments if needed. A commitment from all stakeholders is needed to work together in implementing this action plan. In addition, increasing public awareness and participation in the development of food estates will strengthen the effectiveness of this program. Thus, the development of food estates in Meranti District through a sustainable approach is not only a solution for food security, but also a strategic step to improve the welfare of the community as a whole. This effort requires strong collaboration and commitment from various parties to achieve the expected results.

Keywords: Regional Planning Action Plan, Food Estate Development in 2024, Meranti District and Sustainable Approach.

Introduction

Climate change and rapid population growth are significant challenges for food security in Indonesia, including in Meranti District. As one of the areas that has great potential for the development of the agricultural sector, Meranti District is faced with an urgent need to increase agricultural productivity to meet local and national food needs. In this context, the development of food estates is one of the solutions that is considered effective to increase agricultural yields by utilizing modern technology and sustainable agricultural practices. However, in the implementation of the food

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estate development plan, there are various problems that need to be overcome. Among them are the lack of adequate infrastructure, limited access to modern agricultural technology, and challenges in maintaining soil fertility and water resource sustainability. In addition, community participation in the planning and implementation of the food estate program is also a key factor that determines the success of this initiative. The 2024 food estate development area planning action plan in Meranti District aims to formulate a sustainable strategy, which not only focuses on increasing agricultural productivity, but also pays attention to environmental and social aspects. This sustainable approach is expected to integrate economic, social, and environmental needs, as well as ensure that the results of food estate development can be enjoyed by local communities fairly and equitably.

Food security is an urgent global issue, especially in developing countries such as Indonesia. With the increasing population and the reduction of fertile agricultural land due to land conversion, the challenges in meeting food needs are increasingly complex. Meranti District, which is located in a strategic area, has great potential for the development of the agricultural sector, especially in the context of food estate development. The development of food estates is expected to increase agricultural productivity and ensure a sustainable food supply. However, this requires careful planning and a sustainable approach, so that development not only increases agricultural yields but also maintains the balance of the ecosystem and meets the needs of the community. Food security is one of the main challenges facing Indonesia today, especially in the face of rapid population growth and climate change that has an impact on agricultural products. Meranti District, as one of the areas with considerable agricultural potential, has a strategic role in efforts to increase national food production. However, despite having fertile land and abundant natural resources, various obstacles still hinder the optimization of agricultural potential in this area.

One of the main problems faced is the low productivity of agriculture due to limited infrastructure, such as poor road access and lack of storage and processing facilities for agricultural products. In addition, conventional agricultural practices

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and the lack of application of modern technology are also inhibiting factors in increasing agricultural yields. Climate change that causes weather uncertainty and natural disasters such as floods and droughts further worsens agricultural conditions in Meranti District. This has an impact on the community's food security, resulting in fluctuations in food prices, and has the potential to increase the poverty rate in the area. Therefore, there is a need for an integrated and sustainable action plan to develop the food estate area in Meranti District. This action plan not only aims to increase agricultural productivity, but also to ensure the sustainability of natural resources and improve people's welfare. By developing a food estate, it is hoped that a more efficient, productive, and environmentally friendly agricultural system can be created, and can increase the income and welfare of the local community.

The development of food estates is one of the strategic steps in an effort to strengthen national food security, especially in the face of the challenges of increasing population growth and the impact of climate change. Meranti District, which is located in an area that has extensive agricultural potential, is expected to be one of the significant locations for food estate development in order to increase food production and community welfare. Although Meranti District has abundant natural resources and fertile agricultural land, there are still various challenges that hinder the optimization of this potential. Some of the main problems faced include inadequate agricultural infrastructure, such as limited road access, ineffective irrigation facilities, and lack of modern technology in agricultural practices. In addition, the low level of education and training of farmers is also an obstacle in the application of more productive and efficient agricultural methods. In addition to infrastructure problems, Meranti District is also vulnerable to the impacts of climate change, such as floods and droughts, which can significantly affect crop yields. Changes in weather patterns and the increasing frequency of natural disasters have the potential to threaten local and national food security. The development of food estates in Meranti District is expected to answer these challenges with a sustainable approach, increase agricultural productivity, and provide economic benefits for the local community. Through the planned development of food estate areas, it is hoped

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that a more integrated, efficient, and able agricultural system can be created that is able to adapt to changing environmental conditions.

Food estate development is one of the main focuses in achieving national food security, especially in an increasingly complex global context with climate change, population growth, and increasing food needs. Meranti District, with significant agricultural potential and abundant natural resources, is an ideal location for the implementation of the food estate program. However, to achieve sustainable results, the right approach in the development of this agricultural area is very necessary. Meranti District has its own challenges in terms of natural resource management and the environment. Although the region is rich in arable land, problems such as soil degradation, pollution, and deterioration in the quality of water resources are major obstacles to sustainable agricultural development. Therefore, a sustainable food estate development approach must consider ecological and social factors that can affect the sustainability of these programs. In this context, a sustainable approach focuses not only on increasing agricultural productivity, but also on environmental protection, resource conservation, and improving people's quality of life. This includes the implementation of environmentally friendly agricultural practices, the use of innovative agricultural technology, and the implementation of efficient irrigation systems. In addition, it is important to empower local farmers through education and training so that they can adopt better agricultural practices.

From a social point of view, the development of food estates must also involve the active participation of the community. Community involvement in the planning and implementation of the program will ensure that their needs and aspirations are accommodated, as well as increase the sense of ownership of the project. This approach will create synergy between economic growth and social welfare in Meranti District. By integrating environmental, economic, and social aspects, a sustainable approach in food estate development in Meranti District can be an effective model to improve local and national food security. Therefore, the preparation of a comprehensive action plan for 2024 must be based on sustainability principles that include technical, social, and environmental aspects. A comprehensive action plan is

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needed for the development of food estates in Meranti District involving various stakeholders, including the government, the community, and the private sector. With good cooperation, it is hoped that the development of food estates can be a solution to improve food security and community welfare in Meranti District in 2024.

Method Approach

In this study, the approach used is qualitative research. Qualitative research aims to understand phenomena that occur in certain social and cultural contexts by digging into in-depth information from respondents (Alamsyah et al, 2022; Nuraini, 2010). According to Creswell (2018), qualitative research emphasizes more on understanding the subjective perspective of the participants rather than just measuring certain variables. The research design used in this study is a case study. Case studies allow researchers to study a phenomenon in depth in a specific context (Permana et al 2023; Nuraini et al, 2023); Sinar et al, 2023). Merriam (2018) explained that case studies can provide valuable insights into the dynamics and complexity of a situation, such as the development of food estates in Meranti District.

Data Collection Techniques The data collection in this study was carried out through several techniques, including: Interviews were conducted with various parties involved in the development of food estates, including farmers, local governments, and academics. In-depth interviews allow researchers to obtain rich and in-depth information about the experiences and perspectives of respondents (Moleong, 2018; Marwazi et al, 2023; Rangkuti et al, 2023). The researcher also made observations on agricultural practices and land management in the field. This observation helps researchers to understand the social and cultural context that affects the development of food estates (Bungin, 2018; Hartini et al, 2023; Hidayat et al, 2023). Secondary data is obtained through literature studies, government reports, and relevant planning documents. Documentation provides additional information that supports research analysis (Suhardi, 2018).

To ensure the validity and reliability of the research, the researcher uses data triangulation, namely by comparing data obtained from interviews, observations, and

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documentation. Triangulation helps reduce bias and increase the credibility of research findings (Denzin, 2018). In addition, the researcher also involves colleagues to cross-check the results of the analysis.

Results And Discussion

Food Estate Concept

Food estate is a concept that refers to an area that is specifically designed to increase food production in a planned and integrated manner. According to Mulyadi (2018), food estates not only aim to achieve food self-sufficiency, but also to improve people's welfare through sustainable management of natural resources. This concept is becoming increasingly relevant given the global challenges related to food security.

Sustainable Approaches in Agriculture

A sustainable approach in agriculture is a strategy that ensures that food production is carried out with regard to social, economic, and environmental aspects. According to Fatmawati (2018), sustainability in agriculture includes the use of environmentally friendly cultivation techniques, efficiency in water use, and biodiversity conservation. This approach is very important in the development of food estates to not only focus on short-term results but also consider long-term impacts.

Community Participation

Community involvement in the planning and implementation of food estate programs is crucial. Handoko (2018) emphasized that community participation can increase the effectiveness of the program and strengthen the sense of ownership of the project being implemented. Through dialogue and collaboration with local communities, food estate planning can be adapted to the needs and socio-economic conditions of the local community.

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Sustainable Agricultural Technology

Technology has an important role to play in supporting sustainable agricultural practices. According to Purwanto (2018), the application of appropriate technology, such as integrated irrigation systems and the use of superior plant varieties, can increase productivity and efficiency in land management. The implementation of innovative technologies also helps in reducing negative impacts on the environment, such as soil and water pollution.

Government Policy and Regulatory Framework

Government policies that support the development of sustainable food estates are urgently needed to create a conducive climate for farmers. Setiawan (2018) stated that the government must provide a clear regulatory framework and provide support to farmers through training, access to markets, and financial assistance. This policy can be a driver for the development of effective and sustainable food estates.

Challenges and Opportunities

Food estate development in Meranti District is faced with various challenges, including climate change, access to technology, and lack of infrastructure support. However, as stated by Sari (2018), there is a great opportunity to develop this area by harnessing the potential of existing natural resources and increasing cooperation between various stakeholders, including the government, community, and the private sector.

The Development of Food Estates in Meranti District

The development of food estates in Meranti District has become an increasingly important issue in line with efforts to improve food security and community welfare. However, this development process is inseparable from various conditions that affect its success. Meranti District has great potential in the agricultural sector, thanks to abundant natural resources, including fertile land and sufficient water sources. However, the challenges faced in food estate development are very complex. The

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level of community participation in food estate development is still low. Many farmers do not fully understand the concept of food estate and its benefits. Community involvement in modern agricultural programs needs to be increased so that they can adapt to the changes that occur. In addition, agricultural cultures that still rely on traditional methods hinder the adoption of new technologies that can increase productivity. Economically, Meranti District has great potential, but challenges such as fluctuations in commodity prices, limited market access, and dependence on erratic weather can hinder the growth of the agricultural sector. Inadequate infrastructure, including roads and storage facilities, is also a significant obstacle in the development of food estates.

Environmental conditions also greatly affect the development of food estates. Climate change and extreme weather, such as floods and droughts, can negatively impact agricultural yields. Unsustainable management of natural resources risks causing environmental damage, which can ultimately threaten the sustainability of agricultural businesses. Government policies that support the development of food estates are a key factor in the success of this program. However, there is often uncertainty in policy and a lack of coordination between the agencies involved. This can hinder the implementation of the program and reduce the effectiveness of food estate development efforts. Taking into account various existing conditions, the development of food estates in Meranti District requires a comprehensive and sustainable approach. Synergy is needed between the government, the community, and the private sector to overcome existing challenges and utilize their potential.

The development of food estates in Meranti District is inseparable from various conditions that exist today. In this chapter, several factors that affect the development will be discussed, including social, economic, environmental, and existing policy conditions.

1. Social Conditions

Community Participation: The participation of local communities is very important in the development of food estates. Currently, the level of awareness and community involvement in agricultural development programs still varies.

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Many farmers do not fully understand the concept of food estate and its benefits, so they need a more intensive education approach. **Agricultural Culture:** The people in Meranti District have a strong agricultural culture, but many still rely on traditional methods. The use of modern technology in agriculture is still limited, affecting the productivity and sustainability of agricultural businesses.

2. Economic Conditions

Agricultural Economic Potential: Meranti District has great potential in the agricultural sector, especially in the production of rice and other commodities. However, challenges such as price fluctuations and limited market access hinder the development of the agricultural economy. **Economic Infrastructure:** Inadequate infrastructure, such as roads, irrigation, and storage facilities, is a major obstacle in food estate development. Good infrastructure is needed to support the distribution of agricultural products and accessibility for farmers.

3. Environmental Conditions

Natural Resources: The existence of abundant natural resources, such as fertile soil and sufficient water, is a supporting factor for the development of food estates. However, challenges in terms of climate change and extreme weather also affect agricultural yields. **Environmental Impact:** Food estate development needs to consider environmental impacts, including sustainable land use and conservation of natural resources. Non-environmentally friendly agricultural practices can damage local ecosystems.

4. Policies and Regulations

Government Policies: Government policies that support the development of food estates have a significant impact on the implementation of the program. Clear and integrated policies can facilitate sustainable development. **Inter-Institutional Cooperation:** The importance of cooperation between the government, the community, and the private sector in the development of food estates. Good synergy between institutions can accelerate the development process and maximize existing resources.

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The Challenges of The Food Estate Development Plan

The development of food estates in Meranti District faces various challenges and obstacles that can hinder the achievement of the expected goals. Some of these challenges and obstacles include:

1. Human Resources Challenges

Skills and Knowledge: Many farmers still rely on traditional farming methods, and the lack of training and education on modern agricultural practices is a major obstacle. Without adequate knowledge of efficient agricultural techniques, it is difficult to achieve optimal results. **Community Participation:** Low community participation in food estate development programs is also a challenge. Many farmers are skeptical of change and prefer to stick to the ways they have done it before.

2. Economic Conditions

Access to Financing: Limited access to financing or business capital can hinder farmers' ability to invest in better agricultural technology. This leads to a reliance on unproductive agricultural practices. **Market Price Fluctuations:** The uncertainty of agricultural commodity prices in the market is a significant challenge. Price fluctuations can make farmers hesitant to make the necessary investments in food estate development.

3. Environmental Conditions

Climate Change: Climate change phenomena that cause extreme weather, such as floods or droughts, can damage agricultural products. Poor environmental risk management can exacerbate the impact of climate change on food security. **Land Degradation:** Unsustainable agricultural practices can lead to land degradation and decreased soil fertility, thereby reducing agricultural productivity.

4. Inadequate Infrastructure

Transportation and Accessibility: The lack of good transportation infrastructure can make it difficult for farmers to access markets and get agricultural inputs. Damaged roads and lack of storage facilities can cause significant losses for farmers. **Agricultural Facilities:** The availability of adequate agricultural

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facilities, such as irrigation and storage systems, is still limited. This has an impact on the ability of farmers to manage agricultural products effectively.

5. Policies and Regulations

Lack of Consistent Policy: Uncertainty in government policies regarding food estate development can lead to confusion among farmers and investors. The lack of sustained support from the government is also an obstacle. **Inter-Agency Coordination:** Lack of coordination between various government agencies involved in food estate development can hinder the implementation of the plan that has been prepared. Weak collaboration can lead to a disconnect of information and resources.

The challenges and obstacles faced in the implementation of the food estate development plan in Meranti District require serious attention. Collaborative efforts from the government, society, and the private sector are needed to address this problem. With the right strategy and a sustainable approach, food estate development can be an effective solution to improve food security and community welfare in Meranti District.

How a sustainable approach can be integrated in the planning and implementation of food estate development in Meranti District

A sustainable approach is an important framework in the planning and implementation of food estate development. The integration of these approaches can help ensure that agricultural development not only focuses on increasing productivity, but also considers social, economic, and environmental aspects. The following are ways to integrate a sustainable approach in the context of food estate development in Meranti District:

1. Wise Management of Natural Resources

Sustainable Agricultural Practices: Encourage the implementation of environmentally friendly agricultural practices, such as the use of organic fertilizers, integrated pest control, and crop rotation. This practice can maintain soil fertility and reduce negative impacts on the environment. **Water**

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Resources Conservation: Developing efficient irrigation systems and water management technologies that can minimize waste and ensure sufficient water supply for agricultural needs.

2. Community Empowerment

Training and Education: Conducting training programs for farmers on modern agricultural techniques, farming management, and sustainable practices. This education can improve farmers' knowledge and skills in managing food estates. **Community Participation:** Involving the community in the planning and decision-making process. By involving them, there will be a higher sense of ownership of the programs that are carried out.

3. Commodity Diversification

Food and Non-Food Crops: Encourage diversification of crop types grown to improve food security and farmers' incomes. In addition to food crops, it can also involve horticultural crops or medicinal plants as an alternative source of income. **Integrated Agriculture:** Integrating agriculture with other businesses such as livestock and fisheries to maximize land use and improve economic sustainability.

4. Supporting Infrastructure Development

Agricultural Infrastructure: Builds and repairs supporting infrastructure, such as access roads, markets, and storage facilities. Good infrastructure will facilitate the distribution of agricultural products and reduce post-harvest losses. **Education and Training Facilities:** Establish training and information centers for farmers, which provide access to the latest knowledge and technology in agriculture.

5. Collaboration and Partnership

Multistakeholder Cooperation: Building partnerships between the government, the community, academia, and the private sector to facilitate the development of food estates. This cooperation can increase access to necessary resources and information. **Application of Technology:** Integrating modern technologies in agriculture, such as the use of drones for land monitoring,

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applications for irrigation management, and geographic information systems (GIS) for more effective planning.

6. Continuous Monitoring and Evaluation

Monitoring System: Develop a continuous monitoring system to evaluate the effectiveness of food estate development programs. This will help in making continuous adjustments and improvements. **Sustainability Indicators:** Establish clear indicators to measure the success of the sustainable approaches implemented, such as improved agricultural yields, farmer well-being, and environmental impact.

The integration of a sustainable approach in the planning and implementation of food estate development in Meranti District is very important to achieve optimal results. With a focus on wise resource management, community empowerment, and supporting infrastructure development, food estate development can contribute to sustainable food security and community well-being. Through collaboration and innovation, existing challenges can be overcome to achieve the desired goals.

Conclusion

The development of food estates in Meranti District has great potential to increase regional and national food security. By utilizing natural resources optimally, this program is expected to make a significant contribution to the local economy and community welfare. Currently, Meranti District faces various challenges in food estate development, including limited infrastructure, climate change, and low levels of education and training for farmers. This affects the effectiveness of the program and demands a comprehensive approach to address existing problems.

The integration of a sustainable approach in the planning and implementation of food estate development is essential. By prioritizing sustainability principles, including wise natural resource management, environmental conservation, and community empowerment, this program can provide long-term benefits. An action plan that includes community empowerment, infrastructure development, adoption

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of modern technology, and agricultural diversification is urgently needed to achieve the goals of food estate development. This strategy must be implemented collaboratively between the government, the community, and the private sector.

References

- Alamsyah, B., Nuraini, C., & Suwarno, B. (2022). STRATEGI MANAJEMEN MITIGASI BENCANA PESISIR PANTAI TIMUR SUMATERA UTARA. *PUBLISH BUKU UNPRI PRESS ISBN*, 1-81.
- Nuraini, C. (2010). Variasi Pola Desa-desa Tradisional di Kotanopan, Mandailing Natal. *NALARs*, 9(1).
- Permana, R. A., Nuraini, C., & Ramayana, R. (2023). Analisis Penerapan Konsep Arsitektur Modern Pada Bangunan Delipark Mall di Medan. *Innovative: Journal Of Social Science Research*, 3(3), 7155-7168.
- Nuraini, C., Sitompul, K., Fawwaz, D. M., Sofyan, M., & Fitri, N. (2023). THE SEPARATION OF ACTIVITY SPACES IN RESIDENTIAL ENVIRONMENT AS AN ADAPTIVE HOUSING CONCEPT STRATEGY. *PROSIDING UNIVERSITAS DHARMAWANGSA*, 3(1), 392-400.
- Sinar, T. R. H., Millanie, F., & Nuraini, C. (2023). Analisis Pengembangan Jaringan Transportasi Darat Kabupaten Padang Lawas. *ARMADA: Jurnal Penelitian Multidisiplin*, 1(12), 1376-1384.
- Marwazi, A., Nuraini, C., Abdiyanto, A., Sugiarto, A., & Millanie, F. (2023). Studi Awal Perencanaan Wilayah Kota Medan. *ARMADA: Jurnal Penelitian Multidisiplin*, 1(12), 1402-1407.
- Rangkuti, N. A., Nuraini, C., Millanie, F., & Sugiarto, A. (2023). Strategi Tata Kelola Penanganan Pemukiman Kumuh Di Kota Tebing Tinggi. *ARMADA: Jurnal Penelitian Multidisiplin*, 1(12), 1426-1432.
- Creswell, J. W. (2018). *Qualitative inquiry and research design: Choosing among five approaches* (4th ed.). SAGE Publications.
- Denzin, N. K. (2018). *The research act: A theoretical introduction to sociological methods*. Routledge.
- Fatmawati. (2018). *Keberlanjutan dalam pembangunan: Teori dan praktik*. Penerbit UNY Press.
- Handoko. (2018). *Manajemen sumber daya manusia*. Penerbit Salemba Empat.
- Hartini, M. I., Nuraini, C., Milanie, F., Abdiyanto, A., & Sugiarto, A. (2023). Characteristics and Management of Drainage Infrastructure in Medan Sunggal District, Medan City. *International Journal Papier Advance and Scientific Review*, 4(4), 62-90.
- Hidayat, R., Milanie, F. M., Nuraini, C., Azhari, I., & Sugiarto, A. (2023). Success Factors in Managing Wastewater Infrastructure through Community Participation (Case Study: Wastewater Infrastructure in Residential Areas of Medan Deli Subdistrict, Medan). *International Journal Papier Advance and*

**JOURNAL OF PROCEEDINGS
SOCIAL SCIENCE AND POLITICAL SCIENCE
DHARMAWANGSA UNIVERSITY**

Scientific Review, 4(4), 26-44.

Merriam, S. B. (2018). *Qualitative research and case study applications in education* (4th ed.). Jossey-Bass.

Moleong, L. J. (2018). *Metodologi penelitian kualitatif*. PT Remaja Rosdakarya.

Mulyadi. (2018). *Food estate: Konsep dan implementasi dalam pengembangan pertanian berkelanjutan*. Penerbit Andi.

Purwanto, A. (2018). *Penerapan teknologi dalam pengembangan pertanian berkelanjutan*. Penerbit Andi.

Sari, R. (2018). *Pengembangan sumber daya manusia untuk peningkatan kualitas pendidikan*. Penerbit Andi.

Setiawan, B. (2018). *Manajemen sumber daya alam dan lingkungan*. Penerbit Salemba Empat.

Suhardi. (2018). *Perencanaan dan pengembangan wilayah*. CV. Andi Offset.