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MORALITY BEFORE KNOWLEDGE

Agricultural development model of Jeponan Hamlet, Manggung Village, Ngemplak Sub-district, Boyolali Regency

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ABSTRACT

Background: Manggung Village has great potential in the agricultural sector, which has long been the mainstay of the village economy. However, the village also faces significant challenges, including high fertiliser prices and irrigation problems that hamper agricultural productivity. This research aims to explore the potential, challenges and impacts of structural, institutional and technological transformation in Manggung Village, and determine the most appropriate agricultural development model. **Methods:** This research used a qualitative method with data collection techniques in the form of interviews, observation, and note-taking. Primary data was collected through interviews with farmers and community leaders, while secondary data was obtained from literature and other sources of information. Data was analysed to identify the main problems and changes in the village. **Findings:** The main findings of this research show that Manggung Village is undergoing significant changes in economic and institutional structures, including the application of new technologies such as tractors and rice dryers. While these technologies help to increase efficiency, this transformation has also led to a shift in labour from the agricultural sector to the industrial sector, resulting in a reduction of labour in agriculture. **Conclusion:** The conclusion of this research shows that a conservation-based agricultural development model is the most suitable for Manggung Village, given the potential for fertile agricultural land and the linkages between the agricultural and livestock sectors. This model is expected to support sustainable development by maintaining environmental quality while improving the economic welfare of the village community. **Novelty/Originality of this study:** This research makes a novel contribution by highlighting how structural and technological transformations can affect the dynamics of agricultural villages such as Manggung Village. By proposing a conservation-based development model, this research offers a suitable approach to address local challenges while maximising the potential of existing natural resources.

KEYWORDS: agriculture; agricultural technology; conservation model; Manggung Village; structural transformation.

1. Introduction

The agricultural sector plays an important role in economic development, especially in tropical and equatorial agricultural countries. Agriculture will grow if development planning, in this case the government, is serious about managing the current natural potential and can improve the welfare of agricultural managers. The size of the agricultural sector makes it an important source of input, namely labour, for the industrial sector and

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other modern sectors. Agriculture is also a significant source of capital for modern economic progress. Progress can be achieved when all factors are well integrated.

Some unfavourable policies hamper agricultural development, which should be the government's top priority for speedy implementation. Farmer losses due to the import policy of certain agricultural goods is an example of an instance of hindered agricultural development. This goes against the ideals of agricultural development, which aims to make farmers more prosperous. Agricultural development has never been free from issues that hinder farmers' ability to fulfil their welfare goals. The absence of marketing infrastructure, the traditional nature of farming, farmers' lack of technology and expertise, and difficulties in fulfilling the input components of agricultural production are all factors that contribute to the low productivity of agricultural output.

The process of transforming society in quantitative and qualitative dimensions, i.e. shifting the orientation of society from conventional thinking to modern thinking, is referred to as development. As a result, the values of society will shift from mechanical solidarity and towards organic solidarity. The expansion and development of modern socio-economic organisations is a striking indicator. The development of bureaucracy in the regions is one such indicator. Every aspect of life has been improved as a result of the spread of power and the rise of a culture of opposition in the regions in response to prolonged central domination.

Agricultural development can be defined as a strategic approach aimed at enhancing agricultural production across various economic actors, particularly producers. This increase in agricultural output is crucial, as it directly contributes to improved productivity and higher incomes for farmers. Achieving agricultural growth necessitates substantial government involvement in formulating policies that facilitate and support development efforts. Such policies should ensure that all stakeholders, especially small-scale farmers, can access the necessary resources and inputs to enhance their productivity. By simplifying the process of obtaining agricultural production inputs, the government can empower these farmers to expand their outputs, ultimately leading to a more robust agricultural sector.

In the context of global development, agricultural growth strategies must integrate a comparative advantage approach that leverages local resource content while simultaneously fostering competitive advantages adaptable to future market dynamics. The increasing emphasis on decentralizing economic policies provides a significant opportunity to implement large-scale initiatives that tap into regional potential and maximize the use of local resources. However, the challenges posed by globalization, characterized by heightened competition, necessitate the modification of production and marketing strategies to meet more sophisticated market demands. As markets evolve, agricultural development must embrace innovative practices that enhance efficiency and competitiveness. By balancing local strengths with global market trends, agricultural stakeholders can create a sustainable path forward that benefits both producers and the economy at large.

2. Literature Review

2.1 Development

Development encompasses a deliberate effort or activity aimed at fostering growth and change within a nation or state, orchestrated by its government to advance the welfare of its people. In the agricultural sector, development initiatives focus on increasing farmers' incomes, creating job opportunities, alleviating poverty, and enhancing food security, all of which are crucial for the economic growth of a region. Various models guide agricultural development, including the resource exploitation model, conservation model, location model, diffusion model, high-payoff input model, and induced innovation model. These models play a significant role in shaping policies and serve as prerequisites for the effective development and implementation of agricultural strategies, which are integral to overall economic advancement. Thus, the conscious planning and execution of development

activities are essential, underscoring the need for both central and local governments to prioritize agricultural development in pursuit of national development goals.

Moreover, the interplay between agricultural development and national objectives illustrates that a country cannot realize its broader goals without dedicated efforts in this sector. As highlighted by Asma et al. (2021), the success of national development hinges on the effectiveness of agricultural initiatives, which must be strategically planned and executed. By adopting comprehensive agricultural development models, governments can better understand the dynamics of their agricultural sectors and the specific needs of farmers. These models enable a tailored approach to resource allocation and policy formulation, ensuring that development efforts are both relevant and impactful. Consequently, a robust focus on agricultural development not only supports immediate economic benefits for farmers but also contributes to the sustainable growth of the nation as a whole.

2.2 Structural transformation

Structural transformation of agriculture is the process of changing the structure of the economy from the agricultural sector to the industrial or service sector. Structural transformation of labour from the agricultural sector to the non-agricultural (modern) sector is due to the wage gap. The non-agricultural sector which is a high productivity sector becomes a place to accommodate surplus labour from the agricultural sector. This transfer of labour does not cause a decline in the productivity of the agricultural sector. Structural transformation in developing countries is not running optimally. Many developing countries experience high population growth with labour expansion that exceeds the absorption capacity of the industrial and service sectors. The agricultural sector is the most labour-intensive sector, but in some years the growth rate has been below the economic growth rate. As a result, each year the share of the agricultural sector in GDP has been declining, even though the labour force employed in the agricultural sector is the largest. As a result, surplus labour from the agricultural sector cannot be directly absorbed, exacerbating the problems of unemployment, inequality and poverty. Initially, structural transformation from agriculture to industry increased economic growth and reduced income inequality. However, in the post-millennium period, income inequality rose again. This was due to the development of the digital economy which made income inequality rise again widely (Ifa and Muttaqien, 2018).

2.3 Institutional transformation

Farmer institutions are institutions that are developed from, by, and for farmers to strengthen cooperation in fighting for farmers' interests. These institutions can be in the form of farmer groups or farmer group associations. Farmer groups are one approach to agricultural human resource development. Farmer groups are a communication medium to convey information about innovations and government policies, as well as a medium for 'learning together', discussing innovations, raising problems in farm management and solutions, and evaluating activities. Farmers can improve their bargaining position by transforming into Farmer Economic Institutions. This transformation is intended to create independent and competitive farmer institutions, which can be achieved through empowering farmers through training and apprenticeships in the fields of food, horticulture, animal husbandry, and plantations (Permatasari, 2021).

The transformation of economic institutions in rural areas is a change to encourage the development of a populist economic network system in rural areas in order to have the ability to adapt quickly to all changes that occur both at the domestic and global levels. Institutional transformation is expected that the people's economy in rural areas can be integrated with market dynamics at local, regional and global levels. The fundamental problems that underlie the importance of institutional transformation include incomplete

institutional structures, informal legal entity status, unclear job descriptions, ineffective coordination systems, and types of business activities that do not follow agribusiness systems and businesses. The factors that can be transformed in an institution are legal entity status, organisational structure, organisational goals or orientation, division of tasks or roles, coordination and communication systems, types of business activities, business management, sources of science and technology, business intensity, human resource skills, and the final product produced (Saptana, 2013).

2.4 Technology transfer

The process of technology transfer in the form of information and technology extension of research results in order to increase the productivity and income of farmers needs to be done immediately to accelerate the adoption of agricultural technology assemblies. One of the efforts to accelerate the dissemination of technological information (extension) to users, namely by facilitating the flow of technological information from the source of technology to the user farmers. In order for the flow of information to effectively reach the user farmers, the information must be disseminated to the innovator farmers who can serve as a channel in the bonds of social networks that already exist in the community. efforts to accelerate the dissemination of technological information to farmers, namely by facilitating the flow of technological information from the source of technology to the users, it is necessary to identify, formulate and analyse the social networks that already exist in the community. By knowing the existing social networks, various kinds of information channel media and communication techniques will also be formulated (Purnomo, 2015).

3. Methods

Data collection in this research was conducted through a variety of techniques, specifically interviews, observations, and recordings, to ensure a comprehensive understanding of the agricultural conditions in Manggung Village. Interviews were carried out by visiting key sources, adhering to a pre-designed questionnaire to gather relevant information. The informants included farmers and community leaders, whose insights were invaluable for understanding both agricultural practices and social dynamics within the village. Supporting data was also collected from the community, which provided context on local agricultural habits and the overall condition of farming in the area. Observational techniques were employed to directly assess the community's social conditions and agricultural environment, while recordings facilitated the documentation of essential data, particularly regarding the agricultural landscape of Manggung Village.

This research utilized two primary types of data: primary data and secondary data. Primary data were collected directly from interviewees using the structured questionnaires, enabling the capture of firsthand accounts and experiences related to agriculture. In contrast, secondary data involved the gathering of existing information on Manggung Village through various literature sources, including books, records, prior research, and online village data. The analysis of this data was conducted using qualitative methods, which focus on non-numerical data to derive insights and understanding. This approach allows for a subjective analysis of the collected information, ensuring that the findings are closely aligned with the research variables and capable of effectively addressing the formulated research questions.

4. Results and Discussion

4.1 Potential and problems of Manggung Village

The potential in Manggung Village lies in the agricultural sector. The agriculture that has developed in this village has been developing for a long time. The existence of a superior

sector does not allow for obstacles in running it. Problems in agriculture can result from several factors. Every problem that arises has a significant impact on the development of the farm. All the potential that exists and the factors behind it are very instrumental in agricultural development in this village, therefore all problems must have effective and efficient solutions in handling them. There are several problems in agriculture in this village experienced by farmers. Most of the problems are in the on-farm section, namely fertiliser and irrigation problems in Manggung Village.

The first problem is caused by the high price of fertiliser. Farmers in running their farming business certainly need a supply of quality fertiliser. Prices on the market fluctuate as the price of raw materials rises. Farmers try to adjust the high price of fertiliser to the income generated. The high price of fertiliser certainly greatly affects the income of the farmer a day. The calculation of production facilities must be used as efficiently as possible so that the benefits obtained are maximised. Farmers in Manggung Village have a solution, which is to buy in larger quantities so that the needs of the next planting period are guaranteed at the current fertiliser price. The price of fertiliser will increase and farmers will suffer more losses if they do not buy in large quantities.

Irrigation is the lifeblood of farming. Agriculture requires irrigation throughout the growing season so that rice can grow well. Irrigation at several points in Manggung Village has a slight problem because the existing sources do not fulfil the needs of irrigation during the planting period. The solution provided by the government to this problem is the construction of deep wells for farmers. Deep wells are built so that agricultural activities can run smoothly, especially during the irrigation process. This benefit is certainly accessible to all farmers and is expected to help agricultural activities run smoothly and increase productivity.

4.2 Structural transformation in Manggung Village

Structural transformation is very influential in Indonesia, including in the agricultural sector. The development of the times has led to changes in structural transformation, especially in agriculture. Structural transformation is a change from the agricultural sector to the industrial sector. Changes experienced due to structural transformation such as reduced labour demand in the agricultural sector. Labour chooses to work in the sector rather than the agricultural sector. Over time, the industrial sector and the sector will grow faster than the agricultural sector. The process of structural change is closely related to economic change. Structural transformation is an economic change from a traditional economy to a modern economy.

Manggung Village, located in Boyolali, is one of the villages that experienced structural change. Structural transformation has caused Manggung Village to experience various changes. Structural transformation experiences both positive and negative changes. Positive changes such as the existence of modern tools that help farmers' work so that productivity increases and less labour is expended. Modern tools used by farmers such as tractors help farmers in ploughing rice fields. Such changes can reduce the costs incurred. Negative changes such as farmers increasingly choosing non-agricultural work and preferring to work in industry. Farmers think that working in the agricultural sector only gives them a small profit, which is not enough for their daily needs. Young people in Manggung Village also choose to work in industry, such as choosing to work as factory labourers because they feel that working in a factory will get a fixed salary and do not need to think about whether their farms suffer losses. Manggung Village usually takes farm labourers from other areas where there is a high interest in farming and where farming skills are available. Manggung village usually takes farm labourers from Sumberlawang village who are considered to have expertise in farming.

4.3 Institutional transformation in Manggung Village

Bureaucratic reform is a critical issue that warrants consistent study and implementation, as it aims to reshape the bureaucracy into a true servant of the community. This transformation is essential to ensure that the community receives effective support and services necessary for their daily lives. At the village level, the village government serves as the sole organization responsible for executing governmental functions and providing essential services to its residents. Consequently, the village-level bureaucracy must operate efficiently to meet predetermined goals, particularly in enhancing community service. By prioritizing bureaucratic reform, the village government can foster a more responsive and accountable administration that ultimately leads to improved quality of life for its citizens and greater trust in public institutions.

The bureaucracy in Manggung Village, Ngemplak Sub-district, Boyolali Regency has undergone a transformation over the past few years, this transformation is found in the youth organisation, Gapoktan, and Posyandu activities. The farmer groups in Manggung Village have experienced an increase in their programmes, which have adjusted to a more modern direction and are more active in empowering their members. Each farmer group member provides input and suggestions for better agricultural results. Karang Taruna in running its programme has decreased, due to the lack of active members, one of the causes is the busy level of each member. The Karang Taruna programme itself is not as extensive as it was a few years ago. The Posyandu in Manggung Village has experienced an increase in health services and facilities, as evidenced by the various immunisation, vitamin, and health check activities. Manggung Village does not have a financial institution, but only a farmers' association and is not a financial institution.

4.4 Technology transfer in Manggung Village

Technology transfer is a process of transferring capabilities, technological knowledge, and methods to ensure that scientific and technological developments are accessible to many users. The existence of technology transfer is important in the development and development in agriculture. This also means that the most visible requirement in agricultural development is the existence of technology that is starting to be used and trusted by the community to develop its technology. The community in Manggung Village has more or less applied technology transfer in this agricultural field. In the past, agricultural activities were still carried out with traditional processes and took a long time to carry out agricultural activities. It is different when compared to today's advanced age, so activities will be easier if carried out by utilising technology.

Manggung Village's agricultural activities have implemented a technology transfer that is used to streamline agriculture. This is in line with agricultural development that wants to be realised through the use of existing technology. Current agricultural activities already use tractors to plough the fields. In the past, people still used human and animal labour in its implementation, namely using traditional ploughing tools and cows. The use of tractors can make agricultural activities easier and more effective. Another application found in Manggung Village is the use of rice drying machines that are used by farmers to dry rice that will later be sold. In the past, farmers still dried rice manually by drying it under the sun and it took a long time with a high risk if the weather was not favourable. The transfer of technology in Manggung Village is expected to benefit the community and make agricultural development in this village more developed. Farmers and communities are also expected to cooperate if new innovations in this globalisation era must be implemented.

4.5 Agricultural development model analysis

The Agricultural Development Model is a guideline used in agricultural development efforts. The agricultural model shows that agriculture is dynamic and continues to grow. Based on the results of interviews and analyses that have been conducted, the agricultural

development model that is suitable for Manggung Village is the conservation model. This is because the superior natural resource potential in the village is its fertile and extensive agricultural land, so agriculture is the economic support in this village. Manggung Village also has potential in terms of livestock, because the majority of residents who work as farmers also double as livestock farmers. Problems related to the price of non-subsidised fertiliser, which tends to be expensive, can be overcome by compost from livestock waste, on the other hand, agricultural waste in the form of straw or crop residues can be used as animal feed, showing the link between agriculture and livestock in Manggung Village. Based on this description, the conservation model is suitable for Manggung Village, because this model has the characteristics of land use for crops and livestock, the availability of animal feed, sufficient green fertiliser to maintain soil fertility, and an increase in agricultural yields and productivity.

The conservation model or sustainable agricultural system is the successful management of resources for agricultural businesses to help fulfil changing human needs while maintaining or improving environmental quality and conserving natural resources. The characteristics of the conservation model are ecologically stable, economically sustainable, fair, humane and flexible. Ecologically stable means that the quality of natural resources is maintained and the ability of the agroecosystem as a whole from humans, plants, and animals, to soil organisms is enhanced. This will be fulfilled if the soil is managed and the health of plants, animals and communities is maintained through biological processes or self-regulation. Economically sustainable means that farmers earn enough to meet their needs in proportion to their labour and costs, while conserving natural resources and minimising risks. Fair, humane and flexible means that resources are distributed so that the basic needs of all community members are met, as well as rights in land use and adequate capital and technical assistance are guaranteed. Communities have the opportunity to take part in decision-making on the ground and in the community. Communities also have the ability to adjust to changing farming conditions, such as population growth and technological innovations in agriculture.

5. Conclusions

Conclusions that can be drawn from observations and interviews with resource persons in Manggung Village regarding village development are diverse. The potential of Manggung Village is in the agricultural sector. Problems in agriculture in Manggung Village experienced by farmers are in the on-farm part, namely fertiliser and irrigation problems in Manggung Village. Structural transformation has resulted in Manggung Village experiencing various changes, and experiencing positive and negative impacts from these transformations. Positive changes such as the existence of modern tools that help farmers' work so that productivity increases and less labour is expended. Negative changes such as farmers increasingly choosing non-agricultural work and preferring to work in industry. Bureaucratic transformation in Manggung Village is found in the Karang Taruna organisation, Gapoktan, and Posyandu activities. The Gapoktan in Manggung Village has adjusted to a more modern direction and is more active in empowering its members. Karang Taruna in running its programme experienced a decline, due to the lack of active members. Posyandu in Manggung Village experienced an increase in health services and facilities. Manggung Village does not have a financial institution, but only an association of farmers and is not a financial institution. Manggung Village's agricultural activities have implemented technology transfer to streamline farming. Agricultural activities in Manggung Village already use tractors to plough the fields. The use of rice drying machines is also used in Manggung Village to dry rice that will later be sold by farmers. The agricultural development model that is suitable for Manggung Village is the conservation model. This model is suitable because the superior natural resource potential in the village is its fertile and extensive agricultural land, so agriculture is the economic support in this village.

Manggung Village also has potential in terms of livestock, because the majority of residents who work as farmers also double as breeders.

There are three suggestions that can be given from observations and interviews with resource persons in Manggung Village in this research. (1) The government's involvement in village development should be further strengthened, considering that problems will not be solved if the government does not intervene in this matter. (2) The maximisation of resources and technology in Manggung Village should be further optimised because the resources and technology have high potential in developing and advancing the village. (3) Extension and other interesting programmes should be held so that interest in the agricultural sector will return and this can build a more advanced village.

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