

The Role of Stakeholders in the Development of Agrotechnopark in the Province of West Sumatra

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ABSTRACT : The purpose of this research is analyzing the factors that influence institutional activities and the role of stakeholders in the development of Agricultural Technology Parks (Agrotechnopark), 2) Formulating a model of institutional development in the area Agrotechnopark. Data collection is carried out in this study using several methods, namely primary data collection and secondary data collection. Primary data obtained by surveys, filling in questionnaires and in-depth interviews with experts or stakeholders associated with the actor-oriented analysis method with the source. This study uses qualitative analysis such as Focus Group Discussion, interviews and quantitative analysis using statistical analysis. The results showed the factors that influence institutional activities (Village-Owned Enterprises-BUM-Nag) are the factors of the Nagari government initiative, Nagari economic potential, Nagari natural resources, human resources capable of managing BUMNag and capital. Stakeholders involved in the development of the Agrotechnopark include Institute for Agricultural Technology Assesment, agriculture department, cooperative and industry service, Limapuluh Kota Planning, Research, and Development Board, Nagari and their staff, farmer groups, BUM-Nag, Limapuluh Kota Regency Government, Payakumbuh State Polytechnic and need for synergy between stakeholders by restoring or reactivating Agrotechnopark

KEYWORDS: agricultural area; institutional; productivity; stakeholders

I. INTRODUCTION

The issue of sustainability is the current strategic issue in agricultural development today [1][2], as the sustainability of agricultural development is essential, especially concerning the problems of small farmers. These small farmers have huge numbers with narrow land tenure, low education, limited capital, and less impartial policies. These issues lead small farmers to slump further towards economic and social marginalization [3][4][5][6].

One of the alternative solutions to the problem in terms of increasing the income of small farmers is to build community and regional development. This solution requires establishing productive business units and commodities through the utilization of natural resources together and achieved through empowerment programs and capacity building and institutional development of small farmers [7][8]. Farmer empowerment activities are the stages of the process of spreading innovation to farmers, but along with its development, there are problems not only with technology but also how to disseminate information to farmers who are numerous and widely distributed, so farmers want to participate [9].

Community empowerment activities, especially in the management of small farmers, are still implementing various institutional and partnership systems. This situation causes the profitability of farming activities to benefit more from traders and other farming business people downstream [10]. Therefore, agricultural institutions are needed to strengthen farmers in improving their bargaining position [11][12]. This institution must be supported by close collaboration between farmers, researchers, local governments, and other stakeholders [13][14][15][16].

One of the activities of empowering farmers is through the development of agriculture technological park (Agrotechnopark). This area is built to facilitate the acceleration of transferring agricultural technology produced by government research and development institutions, universities, and business entities. At the same time, this area integrates agricultural models with biological cycles. Besides, the development of the agricultural regions aims to reduce poverty by increasing the income of farmers and rural communities around the area through farmer group's empowerment.

Farmer groups are a means of providing information and counseling, establishing harmony with fellow peasant group members. This research will discuss the role of institutions in the development of Agrotechnopark. Related to the development above, it raises questions such as which institutions and how they play a role in the development of Agrotechnopark in Limapuluh Kota Regency. This research is limited to institutions that are in the geographical area of Limapuluh Kota Regency, which has a direct or indirect role in the development of Agrotechnopark. The purpose of this study is 1) analyzing the factors that influence institutional activities and the role of stakeholders in the development of Agricultural Technology Parks (Agrotechnopark), 2) Formulating a model of institutional development in the area Agrotechnopark

II. MATERIAL AND METHODS

The study was conducted in the Agrotechnopark area of Jorong Belubus, Kenagarian Sungai Talang, Guguak District, Limapuluh Kota Regency from April to September 2018. Data collection methods are using questionnaires, in-depth interviews, and Group Discussion Forums with qualitative descriptive data analysis. The population of this research is the Farmers Group in the Belubus area, Guguak District, in which respondents came from 12 farmer groups in the study area.

III. RESULT AND DISCUSSION

Agrotechnopark located in the Guguak District Kenagarian Sungai Talang, Limapuluh Kota Regency were held through DIPA BPTP of West Sumatra, and in the year of 2015 and 2016, all the assets were turned over to the municipal government of Limapuluh Kota Regency. The existence of fixed assets is stayed in location to be used by farmers through institutions (Nagari-Owned Enterprises BUM-Nag) under the joint guidance and supervision by the implementation team, which will be decreed by the regent of Limapuluh Kota Regency. The Implementation Team decreed by the Regent of Limapuluh Kota regency consists of an integrated team with the following elements:

- a. Institute for Agricultural Technology Assessment researchers/ instructors
- b. Private Sectors (business partners/foster program)
- c. Nagari's instrument

The main tasks and functions of the integrated team are acting as thinkers and decision-makers in the implementation of programs/activities in the field, and as operational supervisors of Nagari-Owned Enterprises (BUM-Nag) with related institutions of Regency, Institute for Agricultural Technology Assessment and private sectors that contribute. The status of the land on which the Agrotechnopark is located is a conditional grant from a local businessman to the head of Nagari Sungai Talang.

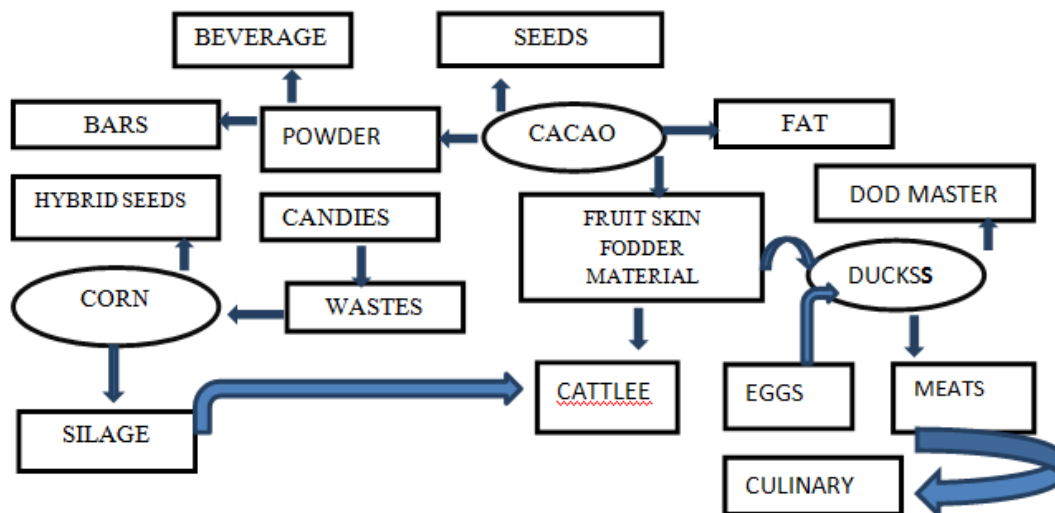
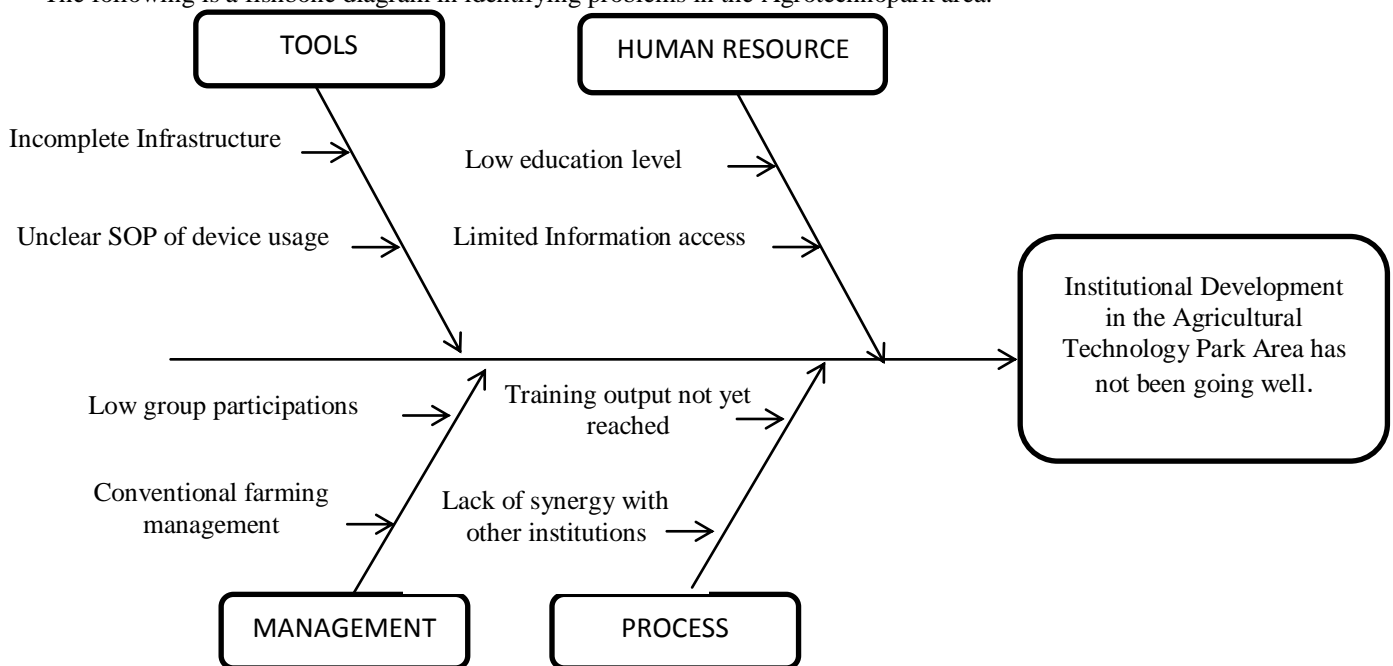


Fig 1. Management of Integrated Technological Innovation of Cocoa, Corn, and Ducks

Agrotechnopark, which was carried out in Nagari Sungai Talang, Guguak District, Limapuluh Kota Regency following the results of the baseline survey has the primary commodities including cocoa, corn, cattle, and ducks with the management of "Integrated Farming System," and with the concept of "zero waste." The cocoa commodity is carried out from upstream to downstream, corn as the center of superior hybrid seeds of Bima 20-URI, cattle with feed utilizing cocoa pod waste, and laying-egg ducks. Activities are undertaken in improving cocoa cultivation, including:

1. The launch of cocoa pruning by the Head of the West Sumatra Plantation Office and the regent of Limapuluh Kota for the cocoa area in West Sumatra, this indicates that increasing cocoa productivity requires cocoa farmers to do the pruning. Cacao pruning also serves to reduce the attack of major cocoa diseases such as VSD.
2. Cacao pruning, side grafting with BL-50 superior clones together on community land covering 5.0 ha, previously the community cocoa land was a mixed variety with low productivity, while BL-50 clone with the productivity of 3.0-4.0 tons of dried seeds/year/ ha. It is hoped that side grafting can increase the productivity of the cocoa.
3. Superior cocoa nurseries (BL-50) of 5,000 underage stems which are ready for side grafting
4. Screen house built for superior cocoa nurseries

The following is a fishbone diagram in identifying problems in the Agrotechnopark area:



From the fishbone diagram above, it can be seen that there is still much to be developed and optimized in developing an agricultural sector, especially aspects of institutional development. Institutions that are running well are supported by qualified human resources, proper management of production management, farmer group management, and the process of activities carried out are expected to provide added value and social change for the region and the surrounding environment.

The institutions that are built in the region are:

1. BUM-Nag

Business enterprise or institution established based on the economic development of a village/Nagari, which aims to improve the economy of the village/Nagari community by utilizing the available natural and human resources.

2. The Background of BUM-Nag

- Potential Nagari's natural resources, not yet touched and maximally utilized
- Agricultural potential from upstream to be developed up to downstream
- Institutions (human resources) have not contributed maximally
- Budget support of village fund development
- Development budget support of related institutions in the region of the West Sumatra provincial government
- Institutions need to be formed that will drive the agribusiness movement for Nagari's economic growth

3. BUM-Nag Bases of Establishment

Permendesa No. 4 of 2015 concerning Village-Owned Enterprises (BUM DESA)

The Regulation of Minister of Village, Development of Disadvantaged Areas, and Transmigration concerning the establishment, administration and management, and dissolution of village-owned enterprises.

The establishment of village-owned enterprises (BUM Desa) aims at:

- Improving villages' economy;
- Optimizing villages' assets to be useful to the welfare of the village

- Increasing community efforts in managing the economic potential of the village;
- Developing a business cooperation plan between villages and with third parties;
- Creating market opportunities and networks that support citizens' general service needs;
- Opening job vacancies;
- Increasing the welfare of the community through improving public services, growth and economic equality in the village; and
- Increasing the income of the village community and the village's original income.

BUM-Nag Nagari Sungai Talang was established in 2015 or along with the activities in Agrotechnopark with the basis or legal umbrella at that time was the PERNAG or Nagari regulations issued by the Nagari Sungai Talang District of Guguak Limapuluh Kota Regency. The current BUM-Nag planning is changing the existing legal umbrella with a stronger one; namely, PERMENDES NO 4 of 2015 concerning Village-Owned Enterprises (BUM-DES), which, when owned by the planning is still in the process stage.

The main objective of the BUM-Nag is to improve the economy of the Nagari specifically in agriculture and animal husbandry which are abundant natural resources in Nagari Sungai Talang, by facilitating and bridging farmers with empowerers, entrepreneurs, and business partners to be able to run the agribusiness activities for farmers particularly in Nagari Sungai Talang. BPTP Sukarami has facilitated Agrotechnopark in Sungai Talang with several processing types of equipment, which are processed cocoa machines in the form of chocolate candy and cocoa powder as well as corn thresher and other devices.

BUM-Nag funding system in 2015 was initially through Institute for Agricultural Technology Assessment as the agency that initiated the establishment of this Agrotechnopark, with initial capital given, BUM-Nag, which initially had several target farmer groups, purchased agricultural products from the target farmer groups. In other words, BUM-Nag directly also became a collecting agent from its own Nagari. The results of the purchase of farmer-assisted farmers' products are then sold back to the market in the form of processed products that have been processed at the Agrotechnopark's processing factory in this case, for example, the results of the Cocoa Plant. Wet Cocoa, which is bought from fostered farmers, is then fermented and processed and marketed by AGROTECHNOPARK itself again.

BUM-Nag Sungai Talang helps the economy of the community by assisting livestock businesses and services for the use of agricultural production equipment such as rice plow machines or other machines. This farming business giving system is the installment system of business results from the beneficiary community. For example, a community is given 20 ducks after they are matured and lay ten eggs, then 3 of the ten eggs are installments to BUM-Nag from the beneficiary community. This system runs until the venture capital provided by BUM-Nag returns, and the ducks given by BUM-Nag has automatically become the private property of the beneficiary community. This system also applies to case business assistance in other fields of agriculture that runs a business installment system for BUM-Nag.

The funding of BUM-Nag Sungai Talang is currently still being invested by BPTP Sukarami from 2015 to 2017, but this year the government of Nagari Sungai Talang, District of Guguak District, Limapuluh Kota Regency has been funded by the Regency which is intended for community economic development. BUM-Nag, as the only Nagari business entity engaged in the agricultural sector, wants the government of Nagari to allocate part of the funds as additional business capital. These funds will be assigned to improve the agrarian economy as had been carried out by BUM-Nag previously.

The development of this Agrotechnopark from its inception until now involves many parties, including:

1. Institute for Agricultural Technology Assessment acts as the organizer of Agrotechnopark activities including:
 - a. Developing display technology and procurement of facilities and infrastructure in the display area in the form of Agrotechnopark activity headquarters, leading commodity production houses, cattle sheds, feed warehouses, gates, and other facilities
 - b. Procuring production facilities, tools and agricultural machinery as needed (seeds, fertilizers, pesticides, tractors, choppers, and other devices)
 - c. Engineering and cultivating institutionally (BUM-Nag, farmer groups)
 - d. Providing effective and efficient business technology
 - e. Developing incubation
2. The Office of Agriculture, Food Crops, Horticulture and Plantations of Limapuluh Kota Regency plays a role such as:
 - a. Sustaining the development of cocoa, corn, rice, and other farming businesses.
 - b. Developing superior commodities/farming demonstration plots (lowland rice, corn, vegetables, cocoa, and ginger).
 - c. Empowering farmers institutionally (BUM-Nag and farmer groups).

- d. Developing farming gazebo at Agrotechnoparkcenter
 - e. Maintaining and empowering businesses and assets of the Agrotechnopark and the community regularly.
3. The Office of Animal Husbandry plays a role such as:
 - a. Procuring Livestock for strengthening farmer's business capital (cattle, ducks, and others)
 - b. Improving the cultivation system through the advancement of cages, feed, and health.
 - c. Fostering superior duck breeding business.
 - d. Procuring post-harvest processing equipment for duck products and their accessories
 - e. Maintaining and empowering AGROTECHNOPARK's businesses and assets and the community regularly.
 4. Agricultural Extension Center (BPP) plays a role as:
 - a. Revitalizing and restructuring of farmer groups
 - b. Guiding and assisting BUM-Nag and farmer groups
 - c. Empowering farmers in the development of superior commodity farming
 - d. Maintaining and empowering AGROTECHNOPARK businesses and assets as well as the community regularly
 5. The Office of Industry and Trade plays a role as:
 - a. Fostering and developing incubation of processing agricultural products
 - b. Facilitating capital and promoting agricultural product processing businesses
 - c. Facilitating/allocating budget for strengthening business capital/incubation
 6. The Tourism Office has the role as designing agrotourism objects and agricultural technology displays
 7. The Office of Youth and Sports plays a role in the procuring and promoting the potential of agrotourism
 8. The Office of Public Works has a role in constructing production roads, irrigation networks, routine maintenance, and businesses' empowerment of agrotechnopark assets and the community.
 9. The Office of Fisheries has a role in procuring seeds, business development, and maintenance
 10. The Ministry of Religion plays a role in building mushalla at the agrotechnoparkcenter and improving the mentality and spirituality of the community
 11. Payakumbuh State Agricultural Polytechnic plays a role in providing technical training to farmers and conducting research on agricultural cultivation activities
 12. Planning, Research, and Development Board (BAPELITBANG) Limapuluh Kota has a role in coordinating the offices in carrying out their respective tasks.
 13. Nagari and their staffs,
 14. Farmer groups
 15. BUM-Nag
 16. The Government of Limapuluh Kota Regency

Based on the results of the identification and survey conducted at the research location, information obtained about farmers in the Agrotechnopark area as follows:

Farmers have been involved in work partnerships but are not in the form of farmer groups. Each work partnership has one respected member (as chairman). Representatives of government institutions such as extension officers are already with the farmers. Farmers have received assistance through extension officers such as seeds, but the seeds distributed to farmers are not the seeds generally used by farmers. Also, 70% of farmers have no trouble finding chemical fertilizers, but 30% of other farmers complain of the absence of chemical fertilizers on the market (the lack of chemical fertilizers). Farmers only own 25% of their land, while the other 75% lease land with a production sharing system. The condition of agricultural land in place of farmers is rain-fed so that in some season conditions, farmers have difficulty preparing water sources. The farmers already have a working system where every morning they work for 2 hours on a farmer's land and rotate the next, and the wages are immediately given after the work is completed that day. Whereas on Monday / Thursday / Wednesday / Saturday there is a wage system in which results are distributed several days before the month of Ramadan.

Besides, the problems that occur in the region are:

1. The area for the construction of the Agrotechnopark is privately owned land surrendered by a notarial deed to make a cocoa and ginger processing factory with the stipulation of sharing as much as 50% with the landowner.
2. The area is under conditional grants.

3. The assets are immovable and recorded, but the problem is that the government does not own the area for the construction of the agrotechnopark.

IV. CONCLUSION

Based on research conducted in the area of Agricultural Technology Park in JorongBelubusNagari Sungai Talang, Limapuluh Kota Regency obtained the following results:

1. Factors that influence institutional activities (BUM-Nag) are management, human resources, facilities and infrastructure, processes and legal policy. Stakeholders involved in the development of the agrotechnopark area are Institute for Agricultural Technology Assesment, The Office of Agriculture, The Office of Cooperation and industries, Planning, Research, and Development Board (BAPELITBANG) Limapuluh Kota, Nagari and their staff, farmer groups, BUM-Nag, The Government of Limapuluh Kota Regency, and Payakumbuh State Agricultural Polytechnic.
2. Institutional Development in the area of Agricultural Technology Park is to synergize the role of stakeholders to increase productivity and income of farmers surrounding the region.

V. ACKNOWLEDGEMENTS

The writer expresses gratitude to Directorate of Research and Community Service, Directorate General of Higher Education, Ministry of Research, Technology, and Higher Education (KEMENRISTEKDIKTI), who has funded this research.

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