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Community Empowerment Model through Regional Partnership Program and Agro Techno Park Initiative

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ABSTRACT

The income of horticultural farmers in Purwosari Sub-District, Mijen District, Semarang City, has been stagnant for over the years. This has been caused by languid institutional systems at the farm level, limited human resources, lack of supporting infrastructure and crop-processing technology, and inadequacy of small medium enterprises that directly engaged in processing. To handle these issues, there has been an initiative to establish Argo Tekno Park as a center for transferring agricultural technology through the development of eduagro-tourism and horticulture-based entrepreneurship. In achieving the objective, various and continuous activities have been carried out with a multi-stakeholder business partnership model that includes elements of the Semarang City Agriculture Service (Dinas Pertanian Kota Semarang), Semarang State University and the University of PGRI Semarang, Farmer Groups (Kelompok Tani) and OborTani Foundation. The program is executed through infrastructure development, Field Schools (Sekolah Lapang), capacity building and mentoring of tour guides, and devising a new entrepreneurship program based on horticulture. The results of the activity show, first: the partnership between academics, private sector, community, and government is quite effective proven with the initiation of Argo Techno Park; second, the production of durian, longan, guava, melon and passion fruit has been growing by more than 100%; third, organizing Wanita Tani Joint Business Group (Kelompok Usaha Bersama), which increases income. Due to the complexity of the bureaucratic process, this research recommends that the pertinent agencies can facilitate the legal aspect of KUB's end product.

Keywords: Empowerment Model, Partnership, Agro Techno Park.

1. Background

The agricultural sector is one of the priorities of the Regional Mid-term Development Plan (Rencana Pembangunan Menengah Daerah/RPJMD) Semarang City. Even though size wise agricultural sector is not too large compared to other sectors, it contributes to 0.83% of Semarang City's

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GRDP/PDRB (Central Statistics Agency/BPS of Semarang, 2018). Semarang has a population of 1,729,428 people, of which 45,815 of them are registered as farmers. However, only 9,603 people are formally registered to farmer group and divided to 371 groups (Semarang City Agriculture Department, 2017).

Agricultural potential in Semarang has been shifting from plantations (coconuts) and food crops (paddy) to horticultural agriculture (vegetables and fruits). In the last decade, the local government through the Agriculture Department has been utilizing an area which was previously a village land (tanahbengkok) to create an orchard area. In Semarang, there are numerous orchard area located in various districts, such as Gunungpati, Ngaliyan, Tembalang, Pedurungan, and Mijen.

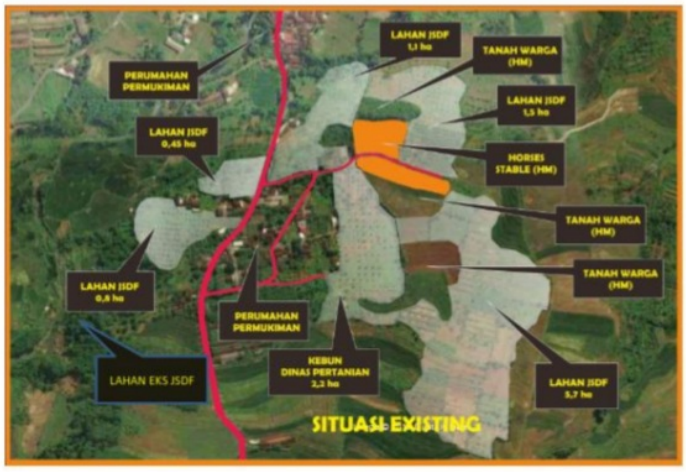

Figure 1. Purwosari Mijenorchard area

The Agriculture Department of Semarang is currently constructing the Agricultural Technology Park or "Agro Techno Park" inthe orchard area in Mijen, precisely in Purwosari Village. It has an area of 17.89 ha and managed collectively by KT Mbangun Karso farmer group (50 members), KT LohJinawi (66 members), and KT Subur Makmur (30 members). The farmers cultivated both local and high-quality fruit seeds, including Dimocarpus Longan, Monti Durian, Soursop, Guava Crystal, and California Papaya.

ATP Purwosari is designed as the technological innovation hub in the agricultural area, the intention is for farmers and communities can learn the application of modern agricultural technology. It has two functions. First, as an agricultural innovation hub. Second, as an internship center, technology dissemination center and business advocacy center to the community. Along with the increasing number of tourists to Semarang and the nature of tourism, the presence of Purwosari ATP is also expected to be edu-agro tourism destination. These developments will create an impact on human resources, especially members of farmer groups and surrounding communities. On the one hand, the increasing human resources capacity and institutional groups of farmers means higher quality, quantity and continuity of horticulture plants. On the other hand, it also means the human resources aspects of tourism needs to be improved, and diversified processed products also need to be developed to increase tourist attraction.

The general problems usually are: weak institutional system at grassroots level, limited capacity of human resources, inadequate supporting infrastructure, lack of awareness of farmers towards tourism, processing crops are not available yet, and the unwillingness of corresponding industry to cooperate. They could be attributed to the 375 Purwosari residents in the poor category, 8 in the very poor category (Poor Family Management/SIMGAKIN of Semarang, 2015).

Based on these problems, there are feasible activities to empower community through regional partnership programs and Agro Techno Park. Purwosari Agro Techno Park is intended as: a means of developing agricultural technology, promote agriculture, agro-edu-tourism development, and increase community income.

To achieve these objectives, there has to be a multi-stakeholder business partnership model that involves government, universities, communities, and private sector to create a *quadruple helix* partnership network to run the program successfully (Soesilowati et.al., 2017).

2. Theoretical review

Empowerment is essentially preparing the community to be able and willing to actively participate in every development program and activity that aims to improve the community's welfare in economic, social, physical and mental terms. According to Alsop, et al. in the journal Empowerment in Practice from Analysis to Implementation (2006) states that: "empowerment is defined as the group's or individual's capacity to make effective choices, that is, to make choices and transform those choices into desired actions and outcomes". In the journal, empowerment is described as the capacity of groups and individuals in making effective choices, and then later change those choices into desired outcomes and actions. The empowerment program is basically intended to: "To help clients gain power from decision and action over their own lives by reducing energy, personal capacity to increase power and by increasing confidence and use of power and by transferring power from the environment to clients ". The preeminent effort in every community empowerment is always focusing on human, business, community, and institutional development.

In the 2014-2019 quick win program, the Indonesian government planned to build Science Park (SP) and Techno Park (TP) in 34 provinces and 100 districts each. SP is an area devoted to research, development of science and technology with the aim of commercialization, functioning as a provider of up-to-date knowledge, alternative technological solutions and center of advanced technology development. While TP is the center of the application of technology, training center, dissemination and business advocacy.

The previous program of Solo Techno Park (STP), which is an integrated area based on science and technology, has now been transformed into an international standard education and training institution in the field of mechanics and has succeeded in providing training to underemployed younger generation (Solo, 2018). Similar to Solo Techno Park (STP), Bandung Techno Park (BTP), and Bandung High Tech Valley (BHTV), Ganesha Sukowati Techno Park (GSTP) which is commonly called as Sragen Technopark with an area close to 30 ha, also engages in the automotive, electronic and ICT sectors. GSTP was established to institute and implement R&D, training and capacity building to boost expertise, human resource, 12 products, and services with commercial and added value to the government and people of Sragen, there's also an additional program to develop human resource in the agro-industry sector by executing One Stop Labor Market (OSSLM) function (Soenarso, 2018).

I Ketut's research (2017) shows that there's sufficient potential to build agrotechnopark in Sibetan village that consists of both raw and processed salacca. The result of QSPM analysis with the most significant value in Total Attractiveness (TAS) is a strategy to optimize the utilization of salacca as processed products, and the development to diversify its species and the potential as a conservation area. Both a restructure in terms of biophysical, social, cultural, institutional and financing aspects of village-based object management organizations, and partnership with travel agencies, occupy the second and third TAS values.

Similarly, Boy (2018) has done another research in the Koleberes ATP center model that was later developed into an integrated farming system. The model links the agriculture, livestock and fisheries sectors in a bio-cylo farming cycle. The result of ATP Improvisation Model demonstrates a significant difference in people's income in the agriculture, livestock, and fisheries sectors.

The above research, Carayann is and Campbell (2009), shows the importance of government policies, universities, industries and communities to interacting effectively and efficiently in the Quadruple Helix concept. Academics and companies provide the conditions needed for an integrated innovation ecosystem. The government provides a regulatory framework and financial support to implement innovative strategies and policies. Communities not only use and applies knowledge, and demands innovation in the form of goods and services, but also need to becomes an active part of the innovation system. Information and communication technology (ICT) works as a supporting factor for bottom-up participation of communities.

In line with the concept of development that is centered around people, Korten (1984) emphasizes a combination of top-down strategies and participatory development. Thus, implementing village development will involve not only social mobilization, but also the devolution of power. Furthermore, Korten suggested the need for ongoing interventions to develop community's ability to manage available resources and develop an organized system.

Furthermore, the Quadruple Helix approach is also considered an established concept in innovative research and policy. The source of innovation is no longer limited to interactions between universities, industry and the government but also with the community. Instead, they are closer to the 'space' approach, more heterogeneous and socially distributed. Quadruple Helix contextualizes Triple Helix by adding community as the fourth helix. Additional perspectives must be considered to understand the ongoing innovation in the 21stcentury. Triple Helix is not sensitive enough to reflect democratic conditions, while Quadruple Helix is sensitive enough to do that (Woo Park, 2014).

3. Methodology

Community empowerment activities through partnership programs and the development of agro technopark are classified as specific and holistic studies. Specific means it is intended that the subjects of the activities are farmer groups, female farmer groups, and tourism activists in Purwosari Village, Mijen District, Semarang. While holistic means that this study examines not only the technical aspect of production and post-harvest processing but also the aspect of economy and tourism. Subjects and inventors are interactive in certain times and contexts. The empowerment activities uses the community-based learning and Quadruple Helix approach.

The focus of activities are: (1) Technology transfer for horticulture cultivation; (2) Transfer of horticultural-based processing technology; (3) Over the edu-tourism technology; (4) Horticultural agribusiness field school; (5) Horticultural agribusiness field school; (6) Business incubation and (7) Facilitation of business legality. The activity was carried out through training, mentoring and field practice with tutorials from academics from Semarang State University, PGRI University, Obor Tani Foundation and Semarang Agriculture Department. The results of the activities were evaluated both through field observations, interactive methods for socio-economic conditions in both before and after the activities.

4. Results and discussion

The Government of Semarang, through its Agriculture Department has started the construction of Purwosari ATP since 2018 using 2017-2019 Local Budget Expenditure (APBD). It comprised of 17.89 ha of various plant development which is managed collectively by members of KT Mbangun Karso (50 members), KT LohJinawi (66 members), and KT Subur Makmur (30 members). So far, the development that has been carried out is the construction of parking areas, lavatory, pedestrian, hydroponic greenhouse, fruit and vegetable greenhouse, and joglohermitage.

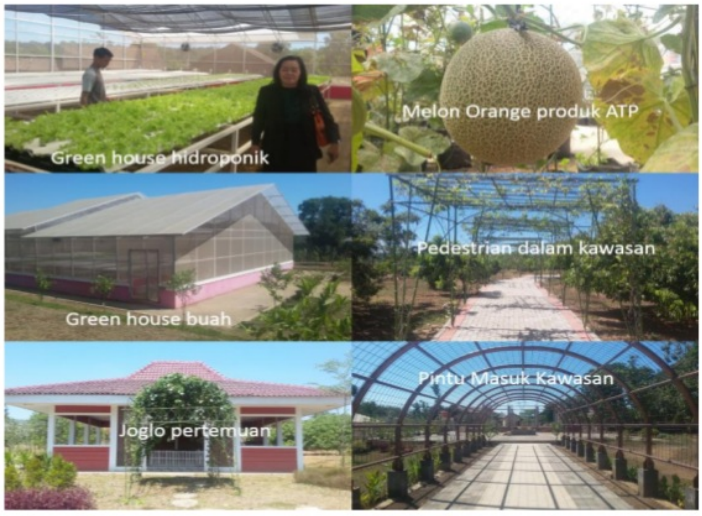

Figure 2 Supporting facilities and infrastructure of Purwosari ATP

UNNES, UPGRIS and Obor Tani Foundation through its Horticulture Agribusiness Field School have been optimizing ATP Agro Purwosari agriculture activities funded by Ministry of Research and Technology. These activities include nursery techniques, cultivation, fertilization of durian, longan, guava, passion fruit, and melon. The Obor Tani Foundation facilitated nursery and plant cultivation training along with biology lecturers directly in the field owned by the Agriculture Department. ATP has 205 longan plants, 201 durian trees, 290 crystal guava trees, 40 soursop, and 138 guava trees.

Field schools play a significant role in the process of applying knowledge and science in the framework of developing farmers' creativity and discipline. Aspects such as seed varieties, fruit quality, seasons, regulation of water, land management, seedling and planting techniques, maintenance of plants and use of water, introduction of pests and natural enemies as well as plant diseases, fertilization techniques and treatment, making organic fertilizers and plant diseases and pest control, is a learning material in the SLP curriculum (Nurhadeliah F, 2016).

Field school activities were conducted four times, where each meeting is 240 minutes and began with pre-test and post-test. To support field activities, a mentoring program was carried out which was integrated with the higher education school and a Focus Group Discussion with related stakeholders. The level of farmer participation is high because they immediately get the benefits. This is in line with the field schools in Palopo, showing the positive attitude of farmers to the SL Program. This attitude is influenced by farmers' knowledge of the program or other knowledge related to the program. Knowledge or information obtained by farmers about the program or activities in the program is considered good enough, whether it is obtained from personal experience or information from others (Digest, 2017).

Figure 3. Horticultural Agribusiness Field School

Optimizing the function of ATP Agro Purwosari in the economic field is carried out through training and the creation of new entrepreneurship in food processing industries based on local potential. The activity began with an FGD of a food processing business group (KUB), which involved women farmers. The activity continued with the provision of horticultural-based food processing diversification training, product standardization through facilitation of PIRT licensing. Procurement of appropriate technology is absolutely necessary to maintain the quality, quantity and hygiene of processed products. Technology is created in mechanical engineering laboratories and synergized with research and development activities of university lecturers who receive funding by the Ministry of Research and Technology.

The products include fruit syrup, jam, sweets, fruit juice, fruit flour, chips, and pastries. As an activity facilitator, lecturers in the catering department are assisted by Community Service (KKN) students. Processing fruit into a sustainable end-product is useful for extending its shelf life and increasing the economic value of low-selling fruits and providing additional income for the farmer's family. The results showed that the processing of red guava added value of Rp. 27,476 per kilogram, while the smallest added value from processing mango is approximate Rp. 9,089 per kilogram. The highest profitability value comes from red guava juice production, which is 34.97%, while the lowest profitability value is 12.80% in soursop juice production (Desi, 2018).

Culinary is part of a tourist destination that cannot be ignored because culinary is one of the basic human needs. Even culinary can be a unique attraction when a tourist decides to visit the tourist area. Higher education has a strategic role in the development of tourism culinary, especially those who have culinary study programs with various traditional food innovating in taste and looks (Atiek, 2018).

Optimization of the functions of ATP Agro Purwosari in the field of Tourism is also carried out through field schools with the aim of transferring knowledge as well as practices to improve skills to Edu-agro-tourism. In the Edu-agro-tourism field school, participants participated in learning and practice activities in the field for 4x meetings (4x6 hours). The learning material includes an arrangement of tour packages, guiding techniques, disposition of SOPs, and performing arts. The activity was facilitated by a website development assistance program, making leaflets/booklets and organizing local scale events by the academics majoring in economics and arts and culture.

Figure 4. Horticulture-Based Process Industry Entrepreneurship Training

Of the various program activities, three new groups of entrepreneurs have emerged that are mutually supportive, including fruit, culinary and tourism services that have an impact on increasing income. The regional partnership program in the formation of Argo Tekno Park became effective because it increased the productivity of local fruits by more than 100% and involved multi-stakeholders. Although it is recognized that there are various sectors in people's lives, this study is not seen as partial or sectoral. Each sector is part of a regional entity that interacts with other sectors and results in interdependence. Interdependence causes a synergistic relationship and encourages the development of the region as a whole.

Government regulations required state-owned companies or private companies to realize the three pillars of Indonesia's development (triple tracks) have provided benefits: first, reducing the number of unemployment (pro-jobs); second, reducing the number of poor people (pro-poor); and third, increase economic growth (pro-growth). Following this obligation, the Ministry of State-Owned Company finally formed the Partnership and Community Development Program (PKBL) which is regulated in the Regulation of the BUMN Minister No. PER-08 / MBU / 2013. The main objective of the partnership program is to empower the community in developing their activities.

5. Conclusion and suggestion

Community empowerment activities through regional partnership programs show these results, first: partnerships between universities, companies, communities and government are quite effective with the formation of Argo Tekno Park; second, durian, longan, guava, melon and passion fruit production increased by more than 100%; third, the establishment of a Farmers' Union of Women Farmers who produce food made from fruits which has an impact on increasing income. Due to the complexity of the bureaucratic process, this research recommends that the pertinent agencies can facilitate the legal aspect of KUB's end product.

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