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The Role of Local Community Associations as Intermediaries: A Multiple Case Study in a Rural Area Pratiwi

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**JOURNAL OF SCIENCE, TECHNOLOGY AND INNOVATION
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FOREWORD by EDITOR-in-CHIEF

We are very pleased to inform the readers that *Journal of Science, Technology, & Innovation Policy and Management (STIPM Journal)* Vol. 5, No. 1, July, 2020 is now ready for public reading and views.

STIPM Journal is an online research journal managed by the Research Center for Science, Technology, Innovation Policy and Management, Indonesian Institute of Sciences (P2KMI-LIPI). This journal in fact provides scientific information needed mostly by the research scholars. As a peer reviewed journal, STIPM provides free access to research thoughts, innovation, and original discoveries.

In this edition, the STIPM Journal contains six articles dealing with science, technology and innovation policy and management written by scholars from Japan and Indonesia.

The first article, entitled *Dynamics of Organisational Capability of Japanese Construction Firm towards Open and Service Innovation through PPP/PFI arrangement* was written by **Taeko Suehiro, Kumiko Miyazaki**. This study examines the influence of Public-Private Partnership (PPP)—or, more specifically, Private Finance Initiative (PFI)—arrangements in relation to open and service innovation in construction firms in Japan.

Second article was composed by **Pratiwi**, entitled *The Role of Local Community Associations as Intermediaries: A Multiple Case Study in a Rural Area*. This study investigates the role, capabilities, and the outcome of the engagement of local community associations as intermediaries in different sectors such as agriculture, food processing, and tourism product. This study describes the way innovation promotes rural development.

Erman Aminullah et al., present the third article, *Policy Role in Innovation Network: Case of Indonesian Food Processing Firms*. The objective of the study is to reveal internal and external factors that affect the use of network relations for innovation, with a focus on mapping the policy role in innovation networks. The study was undertaken through case analysis in four different firms in Indonesia.

The fourth article entitled *Potentials of Research Activities in Medicines at the Indonesian Institute of Sciences (LIPI)* was by **Hadi Kardoyo et al.** This article reveals the findings of research priority setting (RPS) in the field of medicine and health at the Indonesian Institute of Sciences (LIPI) in 2017. The RPS stage had been conducted with the Delphi Method and produced five major issues.

Next article entitled *What We Learn from Innovation Failure: A Review of Clean Water Postpaid Service in Remote Island Indonesia Using Sea Water Reverse Osmosis (SWRO) Technology* was presented by **Rendi Febrianda and Nur Laili**. Final article was compiled by **Syukri Yusuf Nasution and Yovita Isnasari** with the title *Valuation IP of Nano Technology to Make a Nano Tea Based on Mangosteen Peel as a New Product Development*. This article analyses the potential of nano technology in developing new

product, such as how much the potential of the turn over if the technology is used to produce a nano tea based on mangosteen peel, how much the royalty rate, and how is the positioning of the technology in in relation with legal aspects, technological readiness, market condition and finance.

In addition to all articles presented in this volume, we also would like to thank the authors, editors, and reviewers who have worked very hard in this edition. We hope that all articles featured in this edition are useful for the readers.

Jakarta, 16 July 2020

Editor-In-Chief

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The Role of Local Community Associations as Intermediaries: A Multiple Case Study in a Rural Area

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ABSTRACT

Intermediary actors in rural areas are expected to stimulate not only economic growth but also social inclusion. The studies of innovation intermediaries in rural areas are under-researched. This study investigates the role, capabilities, and the outcome of the engagement of local community associations as intermediaries in different sectors such as agriculture, food processing, and tourism product. This study describes the way innovation promotes rural development. This research employs a multiple case study method and analyzes data triangulation. The interviews have indicated that intermediaries in different sectors need to play different roles due to their sector drivers, stakeholders, and challenges. This study also describes the outcome of the engagement of the intermediaries in increasing well-being, trust among stakeholders, and local people capability to innovate. Furthermore, the study draws policy recommendations for the governments to enhance the skills and impact of the intermediaries, including collaborations, proposal competition, annual awards, organizational learning, training, and benchmarking.

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I. INTRODUCTION

In contrast to urban areas, micro and small enterprises in rural areas face more challenges in initiating innovation such as lower absorptive capacity, weaker infrastructure, and shrinking population due to urbanization (Richter, 2017; Steiner & Teasdale, 2017). Due to the challenges, innovation in rural areas are most likely incremental and process innovation with the low-technology and less intensive R&D than innovation

in urban areas (Tödting & Trippl, 2005; Pant, 2016). Where there are limited resources, the determinants of successful rural-based innovation are connected knowledge source, networks in the supply chain, and strong partnership (Bock, 2016; Richter, 2017; Esparcia, 2014). Therefore, the role of an intermediary actor is crucial to facilitate innovation in rural areas.

An intermediary connects actors in the innovation process (Howells, 2006). However, most-cited studies about intermediary actors are mostly focused on high technology and research-intensive industries for the increase of market

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value (Howells, 2006; Lee, Park, Yoon, Park, 2010; Pittaway, Robertson, Munir, Denyer, & Neely, 2004). On the other hand, innovations in rural areas usually are supplier dominated sectors such as tourism and agriculture (Klerkx & Leeuwis, 2007; Lang & Fink, 2018; Reis Neto et al., 2016; Theodorakopoulos, Bennett, Sanchez, 2014).

Intermediaries in rural areas are expected to create not only economic impact but also social impacts such as community empowerment and stronger social capital (Richter, 2017; Steiner & Teasdale, 2017). Putnam, Leonardi, & Nanetti (1993) suggests that social capital sustains economic growth. The literature further describes the flexible concept of social capital as intangible resources needed to build relations such as trust, associations, and cooperative norms (Putnam, et al., 1993). To drive the social capital in rural areas, local community association appears as the most prevalent intermediary actor in rural innovation because they are embedded with the community and trusted by external stakeholders (Lang & Fink, 2018; Richter, 2017; Steiner & Teasdale, 2017). This study focuses on how the local community associations perform different roles as intermediaries in facilitating innovations and bringing outcomes economically and socially. Local community association in this study follows the term “social enterprises” applied by Richter (2017) that refers to an association of local people and local enterprises as a non-profit organization that performs both social and entrepreneurial missions to develop rural areas.

This study was conducted in Kulon Progo Regency, Indonesia, one the most impoverished rural areas in Java, Indonesia. Indonesia is known for having weak and fragmented innovation policy and low absorptive capacity due to the lack of skilled workers (Damuri, Aswicahyono, & Christian, 2018). It indicates that there is little stimulation for collaboration among Ministry of Research, Technology and Higher Education; Ministry of Industry; Indonesian Institute of Science; Ministry of Trade; Ministry of Village, Transmigration, and Under-developed regions; and other related sectors. However, Kulon

Progo Regency has initiated local innovation policy called Support and Buy Local Products. Choosing the regency as the research locus might provide a pilot description and preliminary basis on how innovation promotes rural development. The exploration of rural innovation policy will be useful in the context of Indonesia as since 2015, the Central Government has given wider autonomy to rural areas by giving more authorities and larger fund transfer directly to village government through Law No. 6/ 2014 about rural autonomy.

Local Act No. 5/ 2016 about Local Product Protection describes some the rural innovation policy instruments such as easing investment, strengthening micro-enterprises capabilities, facilitating local SMEs for Intellectual Property Rights (IPR), mandating local people to buy local products and involving more stakeholders such as public research institutes. Those instruments are typical for innovation in peripheral areas as defined by Tödting and Trippel (2005). The purposes of the policy are to 1) develop local cooperatives; 2) benefit the utilization of natural resources for the welfare of residents; 3) improve the capacity of Regional-Owned Enterprise; 4) foster more employment opportunities; and 5) reduce poverty (Retnandari, 2017). The policy does not formally recognize and mandate intermediaries. However, local community associations as the most embedded in the rural community may perform important intangible roles. This study investigates the engagement of local community associations as intermediaries contribute to the regional development.

Based on the previous research gap, this study aims to describe:

- 1) the roles of local community association as intermediaries in the “Support and Buy Local Product” policy,
- 2) strategies of the intermediaries to develop the capabilities needed to develop local enterprises, and
- 3) the outcomes of the partnership for the stakeholders and the policy implications can be derived.

II. ANALYTICAL FRAMEWORK

Most cited innovation practices are often derived from urban context, research-intensive, and high technology sector (Bakici, Almirall, & Wareham, 2013; Herstad & Ebersberger, 2014; Howells, 2006; Pittaway et al., 2004). On the other hand, rural areas are weaker in R&D network compared to the metropolitan and old industrial areas (Tödting & Trippel, 2005). Many innovations in rural areas are incremental and process innovation, thus the policy approach to deal with the challenges should be different in different areas (Tödting & Trippel, 2005). The linear innovation indicators such as R&D and technological advancement might not be contextual in rural areas as the paradigm has shifted from R&D to network based innovation (Klerx, Schut, Leeuwis, & Kilelu, 2012).

There are four characteristics that distinct innovations in urban and rural areas such as dominating sector, role, capabilities and outcomes.

Each area has different dominating sectors. High-technology and research-intensive industry appear as the dominating sectors in urban areas. The sectors depend on their capabilities to catch up with the technological development, therefore, brokering with other stakeholders such as TNCs and other external knowledge providers are essential (Intarakumnerd & Chaoroenporn, 2013; Howells, 2006; Pittaway et al., 2004). Howells (2006) argues that the brokering role in high-technology industries is more than making agreements, but also implementing the new technology into the business.

In rural areas, the dominating sectors are natural resource-based, such as food processing, agriculture, and tourism (Lang & Fink, 2018; Richter, 2017; Steiner & Teasdale, 2017). Most of the sectors depend on the quality of supplies and production skills. Therefore, the capabilities in networking and knowledge building are the most prevalent (Sari, Alamsyah, Asmara, Kusnandar, & Mulatsih, 2017; Steiner & Teasdale, 2017). The competitiveness in the food processing industry relies on quality assurance or standardization (Intarakumnerd & Chaoroenporn, 2013; Theodorakopoulos, Bennett, & Sanchez, 2014). Good quality with a minimum price of produc-

tion factors determines the growth of this sector (Requier-Desjardins, Boucher, & Cerdan, 2003). Therefore, intermediaries need to be capable of adjusting global standards and the capability of suppliers and local enterprises to produce (Intarakumnerd & Chaoroenporn, 2013). Intermediaries also should be able to enhance the skills of suppliers and transfer necessary technologies (Theodorakopoulos et al., 2014). Previous studies have suggested that the role in consulting and resource provision need to be dominantly played by intermediaries in the food processing industry (Intarakumnerd & Chaoroenporn, 2013, Muscio, Nardone, & Dottore, 2016; Theodorakopoulos et al., 2014). The role in consultancy helps as an advisory board by employing its particular capabilities such as the utilization of research, training, IPR, and technological skills. A resource provision role provides resources such as funding and material support in the innovation collaborations (Howells, 2006; Partners, 2007; Sutthijakra & Intarakumnerd, 2015). Intarakumnerd and Chaoroenporn (2013) suggests that government agency and independent local industry association may play the best role in the industry. Another study recommends a different type of intermediary. Research and advisory boards can also be the best candidate (Theodorakopoulos et al., 2014).

In agriculture, the reliance of the innovation and competitiveness has shifted from R&D to the relations among institutions to strengthen capabilities of each stakeholder (Klerx et al., 2009; Klerx et al., 2012). Sari et al., 2017 suggests that the absorptive capacity towards new technology is essential in agriculture. Therefore, intermediaries in agriculture need to understand the role of brokers for stimulating the learning network. Intermediaries also need to understand the function as consultants to transform the needs of farmers and factor production of farming to what the technology producer offers (Sari et al., 2017; Klerx et al., 2009). Klerx et al. (2009) suggests that embedded intermediaries are the most relevant for developing countries. Furthermore, Klerx et al. (2012) emphasizes the institutional supporting the government may provide to keep intermediaries emerged more than choosing the best candidate for an intermediary in agriculture.

In tourism, the satisfaction of the customer needs and attractiveness of the product or service drive the growth of the sector (Forstner, 2004; Lang & Fink, 2018; Xu, 2019). Therefore, two roles are important in the tourism sector. First, the role in consultancy to increase the capability to create a high-quality product and attract customers in the marketing strategy is important. Second, the role of the resource provider is necessary because many rural areas still have limited infrastructure to attract customers (Forstner, 2004; Lang & Fink, 2018).

In terms of the type of intermediary actor, due to the entrepreneurial and social missions, local community associations appear to be the most prevalent intermediary in rural areas. Klerx et al. suggests that embedded intermediary is the most relevant for rural areas in developing countries. In urban areas, the government-based agency is the most prevalent one because of the business expansion and capacity building orientations (Bakici, Almirall, Wareham, 2013; Kivimaa, 2014; Lee et al., 2010)

Besides the type of intermediaries, the distinction of intermediaries in rural and urban areas involve the role of intermediaries. Industry associations in urban areas play a role mostly in conflict mediating. While in rural areas, local community associations play more roles such as brokers, consultants, resource providers, and mediators, particularly when a dispute arises with the supra-structure government. In playing a role in consultancy, the local community associations in rural areas need to be embedded in research organization (Yang, Klerx, & Leeuwis, 2014). Meanwhile resource provision is usually played by maintaining the relationship with government agencies (Sari et al., 2017).

Most studies about intermediaries in urban areas do not explore much specifically about the type of innovation and outcome of the intermediary engagement. However, intermediaries in urban areas are usually expected to increase economic performance such as diversified new industries, shifted market to overseas, networked industry and knowledge, and decreased cost of production (Bakici et al, 2013; Kivimaa, 2014; Lee et al., 2010; Pittaway et al., 2004; Watkins

et al., 2014). There was little explicit synthesis and investigation on some aspects in rural areas too; first, the outcome of intermediary engagement in rural-based innovation; second, the roles and capabilities of intermediary in rural-based innovation sectors; third, policy implications both in the central and local government to support intermediary activities and to keep them emerged. This study fills the gap of the previous studies to explain the roles, capability, outcome and policy implications of the engagement of intermediaries in one rural area in Indonesia.

III. METHODOLOGY

This study employs one of qualitative analysis methods called multiple longitudinal case study. Multiple longitudinal case study allows the researcher to draw various patterns, process, and lastly compare cases in different sectors (Aaboen, Dubois, & Lind, 2012). The purpose of multiple longitudinal case study is investigating different cases to regenerate a new theoretical view by explaining causal steps and unusual cases (Aaboen et al., 2012). This study chooses three cases in fostering rural tourism, food processing, and agricultural product based on the most potent potential of Kulon Progo Regency. Investigating the strongest potentials allows the researcher to compare what each sector can learn from other industries and how the most robust potentials contribute to village development. The data collection in multiple longitudinal case study starts from the process. The choice of respondents is based on snowball sampling in the networks of unit analysis involved (Aaboen et al., 2012). Therefore, the data on other stakeholder perception in roles, capabilities, and impact are to triangulate the data from local community associations as intermediaries. Table 1 summarizes details of the unit analysis and the stakeholders interviewed in this study.

This study categorizes perceptions of interviewees regarding the role, capabilities, challenges, and outcome of the intermediary engagement. In the data analysis, multi-case studies are often conducted by looking at the differences, similarities, and then digging lesson learned among those compared cases. In the context of

innovation studies, some scholars have arrived at the cross-cases comparison (Bakici et al., 2013; Intarakumnerd & Chaoroenporn, 2013).

Following the practice of cross-case comparison from previous studies, first, to describe the role of local community associations, this study categorizes interview result from the associations and the all stakeholders involved. Interviewing not only the intermediaries allows the researcher to confirm the perceptions of the intermediaries and the stakeholders on their performances, the roles in consulting, mediating and resource providing, and the process of engagement.

Second, to describe the strategies of the intermediaries to develop their capabilities, this study categorizes interview results from the all stakeholders involved on their knowledge building process, networking, and management capabilities.

Third, to describe the outcomes of the intermediary engagement, this study investigates from the stakeholders involved on the change, social, and economical benefit before and after the intermediary engagement.

Finally, cross-case comparison is applied to analyze the whole cases. This study compares similarities and differences among roles, challenges, necessary capabilities, and outcome of the innovation. Furthermore, this study derived the lesson learned and policy implications. This study treasures the engagement process of intermediaries in the perception of various actors since the Support and Buy Local Product policy was started in 2013.

IV. RESULTS AND DISCUSSION

A. The Role of Batik Enterprises Association

The sales business growth of Batik in Kulon Progo Regency was not competitive compared to batik industry in Bantul Regency, the neighbouring regency. It can be seen from the less amount of batik enterprises in both regencies based on the latest data from Bureau of Craft and Batik, Ministry of Industry in 2019. Many local people in Kulon Progo Regency bought batik from Bantul Regency. Therefore, the Department of

Trade has stimulated the establishment of Kulon Progo Regency Batik Association in 2010.

The association, along with government agencies started to conduct standard procedure of production. Government agencies also held some training for local batik enterprises to increase their production and management capabilities. However, the sales turnover rate of batik in the regency remained not growing for two years.

In 2012, the government of Kulon Progo Regency held a batik design competition to all of the citizens to send their proposed batik designs that represent local identity. One high school student won the competition. He proposed a design called *Geblek Renteng* design that represents the hope of the growing economy of the regency. The modification of the winning design allows them to reduce the use of batik chops and enables them to modify the basic motif. Soon after that, along with the regency leader and Kulon Progo District Office of Trade of trade, the association requested Department of Cooperative and MSMEs to facilitate Intellectual Property Rights (IPR) establishment for the design. The IPR has allowed all batik enterprises in Kulon Progo Regency to use the winning design and modify them.

Later, the regency leader mandated local students and employees in all government organizations and state-owned enterprises to wear *geblek renteng* batik every Thursday. This innovation is categorized both process innovation and marketing innovation. The design lowers the cost and changes its promoting methods by mandating local agencies to procure the batik. The government agencies have also facilitated batik enterprises for domestic and international exhibitions.

The outcomes of the intermediary engagement the growing number of batik enterprises and the growing number of labor in the enterprises (Table 2). The IPR ownership and the increasing local market as the result of mandatory procurement are the primary reasons that has attracted new firms. Some women that were previously excluded from the business have involved as batik entrepreneurs. One of the association members stated that the growing market had

expanded his business. In 2009, the enterprise had eight employees. Now the enterprise manages to employ 20 labors.

The other outcome of the intermediary engagement is the increase of the firm's revenue. The last outcome of the intermediary based on the interview with enterprise member is the increased capacity of batik maker. The association has facilitated batik makers who work in the enterprise members to join training for batik artist certification by establishing a partnership with the Bureau of National Standardization.

Table 2.

The Number of Batik Enterprises and Batik Sales Turnover in Kulon Progo Regency in JPY

Year	Number of Enterprises	Sales Turnover
2012	14	16,352,069
2013	19	44,709,292
2014	23	59,881,425
2015	34	67,255,484
2016	38	70,781,793
2017	40	100,031,864

Source: Department of Trade, Kulon Progo Regency (2018)

In contributing to the outcome, the batik association has played some roles. In consultancy, the association has held trainings on product diversification, certification, taxing analysis, batik business establishments, essential management, and production process. The association has also requested IPR batik design facilitation.

The second dominant role is brokering. Since the establishment to 2017, the association has held routine internal and external meetings with

other stakeholders and the members to discuss the member's needs, procurement and exhibition planning.

The third dominant role of the batik association is mediating. In 2016, the association conducted an advocacy program to solve the conflict among Department of Environment, local people (farmers) and batik entrepreneurs caused by water pollution. According to the audit result of Department of Environment, the practice of using chemical material in batik making has polluted the local river. The problem remains unsolved due to the reluctance to comply with environmental standards.

Sometimes micro-enterprises also needed support in finance, as a resource provider, the association requested Department of Cooperative and MSME to provide financial access for small batik entrepreneurs. They also asked facilitation in administrative service and logistics from Department of Cooperative and MSMEs for international exhibitions.

The description above has suggested that the consultant and broker are the dominant roles played by the batik association. The role of mediator needs to be performed more effectively because the environmental impact of batik making is not only intervening the trust of farmers but also government agencies. Even though the engagement of the association as an intermediary actor has contributed to the social and economic wellbeing of the community, this study has also investigated systemic failures in the partnership of batik industry development in Kulon Progo Regency. Systemic failures are problems that

Table 1.

Details of Unit Analysis and Networked Stakeholders and Their Assets in Japanese Yen (JPY)

Name of Organization	Members	Asset (JPY)	Stakeholders network with the intermediary
Batik Enterprises Association.	40 enterprises	1,134,075	Batik entrepreneur, The District Office of Cooperative and MSME, The District Office of Trade, The District Office of Environment, Bureau of Planning and Development, High schools.
Palm Sugar Joint Business Group (JBG)	946 farmers and entrepreneurs	3,789,679	Bureau of Service, Locating, and Protection of Indonesian Workers Abroad (BP3TKI), The District Office of Cooperative and MSME, The District Office of Trade. Farmers, exporter, universities,
A1 Farmers Group	94 farmers	101,555	Rice buyer (local cooperative), The District Office of Food and Agriculture; farmer; Agency for Agricultural Technology Research, Ministry of Agriculture

hamper interactive learning and knowledge flow in the innovation system (Woolthuis, Lankhuizen, & Gilsing, 2005).

The systemic failures are identified in the partnership with almost all stakeholders. The collaboration among the association and government agencies such as Department of Trade, Department of Cooperative and MSMEs, Department of Tourism, and Department of Environmental Protection is now passive. Based on the interview with one batik entrepreneur, the meetings are no longer contextual to their needs. That represents the further stimulation needed to keep the enterprises emerged and evolved. Entrepreneurs are lack of ICT capabilities, particularly in online product marketing. Another batik entrepreneur with smaller assets also explained that they are lack of capability in designing batik motif.

Based on the interview with the Department of Cooperatives and MSMEs, they have established an online marketing platform for batik products. However, the batik products marketed there are limited, and they do not connect with the association because of the absence of an institutional basis. According to the organization function, they are mandated to work with cooperatives, not the association. The systemic failure is also identified in water pollution management. The disconnection with another external actor also was identified with universities. Based on the interview with universities, they offer research and development program to facilitate the local industry using the grant from the Ministry of Research, Technology, and Higher Education. The grant requires partnership with the government and local industries to solve a local industry problem. However, the respondent from Yogyakarta State University faced difficulties to initiate a partnership with the government of Kulon Progo regency.

The partnership between association and buyers is also absent. Some buyers have started to procure *geblek renteng* batik from outside of the association and outside of the regency. The procuring firms offer lower price and better quality even though the procuring firm does not own the IPR for the motif. The association needs to

rebuild the partnership with local buyers to articulate demand and increase their product quality.

The systemic failures above are related to the external stimulation to the association members. The association was government initiated instead of self-motivated. Therefore, the organization is also lack of shared common problems among members to sustain their activity and facilitate each other. This finding confirms Richter (2017) suggestion that forced and formalized intermediary is likely weaker than those who are self-motivated.

In playing their roles dominantly as a broker and a consultant, the observed capabilities have shown that networking and knowledge building are most prevalent compared to coordination and management. The networking capability was developed through self-procurement and exhibitions. The self-procurement and exhibitions have allowed some association members to learn about the designs and quality standards that the market and customers require and comply with. However, they still face competitiveness challenges in providing a high quality products with cheaper prices their competitors offer. The knowledge building capability was built through some trainings and certifications facilitated by the local government.

The association still has low management capability in problem-solving. The coordination capabilities are also limited in managing the online forum and accepting the request but not in identifying stakeholders to fix the environmental problems and systemic failures.

The satisfaction of the customer and product attractiveness drive the development of the tourism sector. The findings in this sector have indicated that the association needs to play a role in consultancy and resource provision more effectively. They need to transfer new technology to produce cheaper batik as a consultant and a resource provider. One local school has procured batik from outside of regency for the lower price. The procuring firm employs better technology by using a printing machine to produce faster and cheaper batik. The consultancy to increase the capability in creating attractive batik design and fashionable clothes made from batik are

also necessary. Lastly, they need to link with the Department of Cooperatives and MSMEs and even online marketing platform to expand the capabilities of online marketing.

B. The Role of Palm Sugar Joint Business Group (JBG)

Kulon Progo Regency is known for its most abundant resource of coconut compared to other regencies in Yogyakarta Special Region (Central Bureau of Statistics, 2018). However, previously, the production of the palm sugar in the regency are mostly in solid form with no value-added. The market was limited to the domestic market. The young people in the village used to work abroad as manual labors.

Then, some farmers started to create the palm sugar in spice-infused powder form after being trained by government agencies. The powder form of palm sugar allows easier packaging and more durable product compared to the solid form of palm sugar. The solid form expires in four months while the powder form has a longer expiration date for one year because of the less water contains in the powder.

After joining agriculture exhibitions, some of the palm sugar enterprises have developed interactions with the Ministry of Agriculture and one exporting agency for coconut products. The enterprises then learned the importance of fair-trade mechanism for farmer empowerment and product competitiveness. The exporting agency has facilitated them to earn US organic FDA and fair trade certificates. In 2011, government facilitators from the Ministry of Agriculture suggested the entrepreneurs to initiate a new trial to form JBG and offered financial support by connecting them to Directorate of Agricultural Processing and Marketing, Ministry of Agriculture. They gave financial support at Japanese Yen (JPY) 2,419,016 for the JBG establishment.

In playing the roles as a broker, the JBG has made agreements with the Bureau of Service, Locating, and Protection of Indonesian Workers Abroad (BP3TKI); one exporting agency for facilitation of capability development; Atma Jaya Catholic University about packaging design and technique; Research Center for Regional Devel-

opment and Community Empowerment (LPPM) Yogyakarta State University; District Office of Trade, District Office of Food and Agriculture, and District Office of Cooperative and MSMEs. The JBG has also created an online media platform. The platform contains transparent information about the organizations and fair trade fund management. The website can be easily accessed by possible partners.

The JBG also conducted monthly meetings with village production coordinators and related government organizations. The meetings discuss agricultural problems and needs such as in developing better coconut seeds to ease harvesting process, agro-tourism and product marketing in domestic retails.

As the results of the brokering activities with the exporting agency, the JBG has developed its network to solve urgent problems such as climate change and market expansion. Nonetheless, they still face a decreasing number of farmers because not so many young people are interested in being coconut farmers. The harvesting process is risky as the trees are too high. So far, no machinery or agricultural technology solve the problem efficiently. The cluster plan from the government is left without any follow-up in linking the industry with R&D organizations.

Another result of the brokering activity is the recognition of the global market. Introducing the palm sugar to a larger global market was not easy. The enterprises had to make sure that their product is highly qualified through various certifications. Those certificates ensure them that the product fulfills the hygienic and health standards from the destination countries and also socially and environmentally safe. For example, the fair for life certification that requires them to allocate the profit for community empowerment. By employing the fair trade mechanism, they buy the palm sugar for the farmers with a 10% higher price compare to other local domestic buyers. They have also built schools, mosques, waste management infrastructures, roads and granting scholarships for elementary and high school students (kids of the farmers).

Even though the financial resource of the JBG is also not sufficient to annually earn the

exporting certificates, the private exporting agency has been facilitating the business group to get the certifications. To get the certifications, the product should comply with standards but the farmers and entrepreneurs did not have capability to comply with the standards. Through the brokering activity, the knowledge building and management capability are built through training provided by the exporting agency. Supplying the palm sugar exclusively to the private exporting agency is one way to keep trust with the export agency. The private exporting agency has been facilitating them to strengthen their knowledge building and management capabilities by providing training about production standards, conducting R&D in irrigation, managing fair trade funds, and also standardized production place and tools.

By brokering with Research Center for Regional Development and Community Empowerment (LPPM), Atma Jaya Catholic University, Yogyakarta, the JBG is facilitated to establish their trademark registered in national IPR list. The university also facilitated the business group by training in designing the package of the product.

Other stakeholders support the JBG development after the brokering activities. The stakeholders are BP3TKI, LPPM of Yogyakarta State University, District Office of Trade, District Office of Cooperatives and MSMEs, and also District Office of Agriculture. Those bodies have granted production tools and delivered training in agriculture, management, and community empowerment, notably to employ the annual trade fund effectively. However, the impact of the training is not for long-term.

In playing the role as a consultant, along with the members, they were requested by government agencies to deliver training in palm sugar production internally and externally.

The development of the palm sugar still faces a challenge in breeding regenerated coconut trees that are easier to harvest. The amount of young farmers is decreasing because the young generation is not interested in being farmers. A new channel of partnership with R&D bodies to solve this problem is needed. Another challenge is in managing the partnership with international buyers without the private exporting agent. They

need to enhance their capacity in understanding and filling the minimum standards of international certifications.

All of the interviewees have confirmed that the partnership has increased trust among stakeholders. Some of the social capital features are the transparency of fair trade fund management and also the increasing benefits for the farmers. This intermediary is embedded with local people that represented in people in the organization structure and the inward-looking strategy for farmers benefit that is in the core goal of the intermediary. The establishment likely confirmed with Richter (2017) concept that embedded intermediary that shares common goals with the community likely possesses a higher trust with other stakeholders than those who do not.

The industry relies on quality assurance and standardization. Therefore, the JBG needs to focus on the roles in consulting and resource provision. However, the findings have indicated that consulting is the least played. The JBG has limited knowledge in adjusting international standards and the capability of the suppliers. The JBG still relies on the private exporting agency in adopting international standards. The JBG also still has limited capacity in doing research and development to use new technology or create better coconut trees that are easier to harvest.

C. The Role of A1 Farmer's Group

This farmer's group has developed one local rice breed that is commercialized in the regency. They also registered IPRs for local germplasms to be commercialized nationally. White Menur is one local rice breed developed from rice breeding process by a local farmer. Rice breeding is one agricultural activity to get the genetic structure for some purposes such as getting better texture rice, pest resistance rice, and aromatic rice. Initially, the chairman of the farmer group developed the rice breed. Joining trials and training since 1978 has enabled few farmers in this farmer group to learn about rice breeding. Unfortunately, White Menur is not allowed to be commercialized outside of the regency because the breed is not local germplasm or not genetically originated from the regency but another province.

Ministry of Agriculture has to conduct R&D and trials before granting an IPR, which means the product can be commercialized outside of the regency. However, this breed is one among the most wanted rice breed in the regency, particularly after the regency leader mandates the local citizens to buy rice developed locally. Currently, along with the Department of Agriculture and the Bureau of Agriculture Technology Development in the Ministry of Agriculture, this farmer group is developing three new local germplasms.

This farmer's group was established in 1978. It was primarily informal community group to establish lightings and electricity in the village. Then, this group was formalized as a farmer group. Even though some members are capable of rice-breeding, many of the members are not interested in rice breeding. In playing their roles as a consultant, some members in this group delivered trainings for farmers in organic farming techniques, developing particular rice variety, and fertilizers making. They also did informal R&D to create a new breed by using plant breeding techniques. One member of this group often delivered training for other farmers associations assigned by Department of Agriculture, Kulon Progo Regency about plant breeding and seeds selection.

In playing their roles as a broker, they held informal meetings with other farmer associations and rice buyers to create a new market. They also informally often meet facilitators and researchers from the Ministry of Agriculture to discuss the possible way to develop local germplasms where there are few resources. They also held formal meetings with the researchers from the Ministry of Agriculture to monitor the process of IPR for the three germplasm. They also managed voluntary saving. The farmers can withdraw the money any time. They also manage primary saving that can be taken at the end of the fiscal year to keep the members participated and to establish investing habit.

In playing their roles in consultancy, they delivered training for farmers in organic farming techniques, developing particular rice variety, and fertilizers making. They managed as well the process of plant breeding, farming infrastructure procurement, restructuring organization, and

financial management transparently. Some approaches are putting the result in a community board and through deliberative decision-making forum where all members and sometimes external stakeholders are openly invited. Lastly, to keep the process productive, they hold monthly internal meeting to identify problems, needs, and possible solutions. The topics of the meetings are usually about the farming process, variety of plants developed, farming preparation and planning for voluntary community work to solve infrastructure problems. They also accepted requests from universities to provide fields for students (community development project) to learn about farming and apply for community empowerment program.

As resource providers, in the monthly meetings, sometimes they found the farmers need some resource supports. This farmer's group requested related authorities. Their requests are usually fertilizers, tractors, water pumps, and training. In developing the commercialization for the three local germplasms, they provided a standardized venue and assisted for formal R&D with the Ministry of Agriculture in rice breeding to find local germplasms. They also informally and voluntarily informed the members and other farmer groups in the sub-district to take the better newly developed rice breed (White Menur) without any licenses or extra cost. To support the members in increasing their capability, this farmer group gave transportation financial support for members who went for training.

The engagement of the intermediary has conserved local germplasm and increased the farmer's wellbeing. Currently, White Menur is the most wanted breed in the regency as the productivity is high, and it is a pest-resistant breed. This partnership has also increased the capability of local farmers in agriculture. However, only a few members are interested in rice breeding. According to the interview with one person in the farmer group, it is difficult to diffuse the knowledge of rice breeding because of a lack of interest in of other members. However, in terms of activities, this intermediary is likely more sustained than the intermediary in batik development because members are aware of common problems.

In playing their roles as a broker and resource provider, the farmer's group has also developed their capabilities, particularly networking and coordination. By playing role as a broker, they have learned how to expand their networking capability to comply with the IPR regulations and the stakeholders involved. The knowledge building capability and management capability were learned through trainings and farmers meetings. The farmer's group is known as the only farmer's group in the regency who has the capability of rice breeding. However, the number of farmers who are capable for breeding are not many.

Klerx et al. (2012) has explained the shift of agricultural innovation from R&D to the relations among stakeholders. However, this case shows that the R&D connection and capability still drive agriculture innovation. Instead of focusing on brokering, the intermediary needs to play its role more in consultancy, particularly to diffuse and promote learning of rice breeding and other problem solvings.

D. Cross-Case Comparison

The cross case comparison from this study finding is described in Table 3. This section compares cases based on three categories such as roles, capabilities, and impact of the intermediary engagement.

The findings demonstrate all three local community associations commonly play a role in brokering. Brokering leads to training, infrastructure, and financial resources provided by related

stakeholders such as government agencies, public research institutes, and the exporting agencies.

Even though all the intermediaries have a significant role in brokering, they need to play more other roles differently in different sectors. Tourism sector relies on the satisfaction of the customers about the product price and quality. Therefore, they need to play roles in consultancy and resource provision to transfer new technology to produce cheaper batik as a consultant and a resource provider. In playing the role as a consultant, they also need to enhance the ability of new enterprises in producing attractive batik design and online marketing. Lastly, mediating is also necessary to solve the conflict caused by water pollution.

In the food processing sector, the findings show that providing resources is the second most prevalent role after brokering. They provided the resources by employing fair trade fund and the grant they have received from government agencies. However, the growth of this sector is driven by quality assurance of supply material and process standardization. Therefore, the JBG needs to focus on the roles in consulting and resource provision. But, they play a minimum role in consulting due to limited knowledge in creating easier to harvest coconut trees and adopting international standards and ability of the farmers and micro-enterprises. The government also needs to support them in implementing their brokering roles, particularly in research and development for better and easier harvesting process.

Table 3.
Cross-Case Comparison of Intermediaries

Aspect	Tourism	Food Processing	Agriculture
Status	Government initiated	Self-motivated	Self-motivated
Roles Needed	Consulting, resource provision, mediating.	Consulting and resource provision.	Consulting, broker, resource provider
Capabilities	Networking and knowledge building.	Knowledge building, networking, management, coordination.	Knowledge building, networking, coordination, management.
Degree of Innovation	Incremental	Incremental	Incremental
Outcome	IPR ownership, increased number of batik business, increased sales turnover, increased capacity, attracted u-turners.	International product certification, national IPR for the palm sugar brands, increased social inclusion and farmer wellbeing, increased production capability.	Environmentally friendlier farming, increased trust.

In the agriculture sector, consultancy is played dominantly after brokering. Innovation, in this case, is driven by research and development in creating local germplasms with better qualities. Therefore, farming skills and strong partnership with public research institute are essential. However, the challenge in this farmer group is difficulties in stimulating other farmers to learn about rice breeding. Instead of focusing on brokering, the intermediary needs to play its role more in consultancy, particularly to diffuse and promote learning of rice breeding.

The findings in this study also indicate that networking is the most common capabilities in the three intermediaries. In the tourism sector, the skill in knowledge building needs to be supported. The challenges faced by enterprises are primarily in employing new technology in producing cheaper batik, creating an attractive design and digital marketing. Therefore, knowledge building is essential. Another capability that needs to be developed is coordinating. Coordination is necessary to identify the needs of the internal and external stakeholders when conflict arises. The last capacity required for this intermediary is management capability. Management capability is needed to keep the activity of the intermediary emerging. Currently, the participation of the members in routine meetings is getting weaker because the members think the session will not accommodate their problem and needs.

In the food processing sector, management is the most prevalent capability after the networking capability. Knowledge building capability is needed to be developed as this sector depends on standardization of supply material and quality assurance of the process and output. Coordinating skills are also required to comply with quality assurance standards.

In the agriculture sector, networking and coordination are the dominant capabilities. However, as this sector depends on farming skills to innovate, the knowledge building capability is crucial to diffuse the knowledge internally on organic farming and rice breeding.

According to the interview findings, the three innovations perform incremental outcomes. There was no novel of material needed. In tourism sec-

tor, the involvement of intermediary has not only increased sales but also increased the capacity of enterprises and attracted u-turners to involve in batik business. However, the water pollution problem is still unsolved.

In the food processing sector, the intermediary has stimulated the recognition from the global market through international certifications, increased social inclusion, and farmer wellbeing from the fair trade employment. In the agricultural sector, the intermediary has primarily increased farmers capability to do organic farming and increased knowledge in rice-breeding. The engagement of the intermediaries in the three industries has contributed not only to the increase of farmers and enterprises income and social inclusion, but also the capability and knowledge of the members in farming and business development.

V. CONCLUSION

This study has demonstrated four essential points. The first distinction is on the outcome of the intermediary engagement. The engagement of local community associations does stimulate not only economic growth and social inclusion as expected in the previous studies but also the capability of the members. The expanded market has attracted new enterprises and new farmers to join in the local economic activities. In the case of the food processing sector, the village infrastructure development and farmers well-being have also improved due to the employment of fair-trade fund. The social inclusion features are the increasing participation of elders and women in village activity, increased trust between the government agencies and farmers in the agriculture sector, and increased trust between palm sugar enterprises and the exporting agency. The trust is built through formal agreements and informal activities. The capability of the members has also enhanced, particularly in the modification of batik design, batik-makers certifications, palm sugar production, IPR facilitation, and organic farming.

The second point is the roles of the intermediaries. Previous studies have suggested intermediaries in different sector play different roles. The satisfaction of the customer drives the tourism sector. Therefore, the role of consultancy

and resource provision is essential. However, the findings show that the intermediary plays role dominantly in brokering and consultancy. Mediating is also vital because tourism in rural areas might deal with environmental problems. The intermediary needs to emphasize consultancy role, especially in creating an attractive design with lower price and involving in online marketing platforms. In the food processing industry, quality assurance and standards are essential. Therefore the roles in consulting and resource provision are important. The findings show that the intermediary plays a minimum role in consultancy because of the limited knowledge in adjusting international standards. However, the role of brokering has helped this intermediary to empower the members. In agriculture, the networks beyond R&D is essential. The vital roles are brokering and consultancy. The interview results indicated that this sector needs to perform more as a consultant in diffusing the knowledge of rice breeding among members.

The third point is the capability of the intermediary. Previous studies have suggested that knowledge building is an essential capacity in resource-based sector such as agriculture, food-processing, and tourism (Sari et al., 2017; Steiner & Teasdale, 2018). However, this study shows that networking is the most common capability all intermediaries have. The three cases indicate that they have developed networking capability through the policy of self-procurement, and exhibitions. The members of the associations have also developed their knowledge building through compliance towards quality standards demanded by their markets, trainings from the exporting agents and the government therefore those interventions have allowed them to apply some intangible knowledge of business process and then to train others too. Lastly, the management capability is built through a fair trade mechanism or the mechanism to manage community fund for social and economic purpose except in the case of batik association, the management capability is not as strong as other two cases because there is no clear social and economic mechanism and purpose.

Lastly, this study confirms Richter (2017) & Klerx et al. (2012) arguments that self-help

motivated intermediary is likely to have stronger ties internally and externally. The establishment of an intermediary shall be better motivated by a common problem to solve together. Therefore, this type of intermediary is likely being trusted more by members. The participation of the members is also higher than the government-initiated intermediary. This study has suggested that self-help motivated intermediaries are more active in implementing their program compared to the intermediary that was formed by the government like the Batik Association.

The government intervention might better need to focus on identifying and facilitating a potential intermediary initiator than mandating enterprises to a new government-initiated intermediary. In rural communities in Indonesia, the decision making in communal livelihood is determined by informal leadership, sometimes formal and informal leadership are contested during the decision-making process (Butler et al., 2014). Informal leadership is one type of leadership when one person gets a strong trust tie from the community without getting formally assigned. However, this needs to be investigated further in terms of rural enterprise associations.

VI. POLICY IMPLICATIONS

Generally, the government should think carefully before choosing an intermediary. The self-motivated and embedded intermediary is more emerging in activities because the members are likely to trust them more. In supporting the intermediary to play their roles better, the government needs to be the facilitator.

The central government should consider three crucial policy measures, such as proposal competition and innovation awards for micro and small enterprises in rural areas. Those two measures are necessary to identify and raise potential intermediaries. In proposal competition, Ministry of Research, Technology, and Higher Education should be the leading sector. Annually, the Ministry can expand the grants of research and development not only for universities but also for micro and small enterprises. The fund may require collaboration with more than one stakeholders, such as universities, exporting

agency, and potential venture capital. The research and development grants can be used to compete in problem-solving, for example, by creating better and environmentally friendlier wax for batik, easier to harvest coconut trees or better germplasm. Prioritization of the proposal sector should also be coordinated with the urgent need of innovation in other ministries and local governments to implement the grant more strategically.

Ministry of Transmigration, Rural, and Underdeveloped Regions can be the second alternative leading sector in the proposal competition. Annually, along with Ministry of Finance, the Ministry transfers higher fund to villages directly as the consequence of the new Law No. 6/ 2014 about Rural Autonomy. Ministry of Transmigration, Rural, and Underdeveloped Regions has been facilitating rural governments on the employment of the fund. However, the Ministry Regulation No. 16/ 2018 about Village Fund Priority primarily only prioritizes infrastructure development. The budget should be used to fund and raise village enterprises. Later, the Ministries should evaluate and announce the best micro and small enterprises innovations in rural areas through mass electronic media. The publications and awards will diffuse the practices nationally and to broader stakeholders. The proposal competition and awards can also bring the result in potential self-help intermediary identification.

The findings have indicated that the role in consultancy is crucial in the three sector. Therefore it needs knowledge building capability. Local government has more limited authority and fewer resources than the central government. Consequently, they cannot work alone. Collaboration with nearby universities in applying new technology is necessary to strengthen the role in consultancy. Each university has a department of research and community development. The department uses grants from the central government and other sources to implement their roles collaboratively with various actors. However, based on the interview results with researchers from universities, it is difficult to get the trust of the local government to collaborate in research and community development. Lack of institutional basis is the primary obstacle local government

agencies told. Budgeting planning is not flexible. Therefore, in the development planning phase, local government through the Development Planning Board should integrate their program with R&D program from universities based on local government problems. Further, they can also have network with other agencies, farmers, and universities in their development plan and R&D fund sharing agreements.

For future research, different sectors require different type of intermediary. In resource based sectors, this study suggests that the role in consultancy is important. However, intermediaries in this study are enterprises that have limited knowledge in new technology employment, adjusting international standards, marketing capacity. The exploration in the future studies about other type of intermediaries such as exporting agency and research and development organizations might contribute to broader implications. Future studies can also compare between rural areas where the local community associations present and absent. The comparison will be useful to identify various actor that might strengthen social capital in rural areas.

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