



Striving Backwardness by undertake G2R Tetrapreneur Model: Lesson Learnt from Student Community Engagement Program

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Abstract

As an archipelagic country, Indonesia facing the problem of inequality. The economic growth and peoples prosperity gap, especially between Java Island and outside of Java, are sorely perceived. It is need a remarkable effort due to diminish that situation. Bangka Island is one of remote area in Indonesia that encounter problem of slow economic growth and high rate of poverty. As part of the university's responsibility to community, University of Gadjah Mada established Student Community Engagement program in Bangka Island in order to assist the peoples escape from this condition. This paper aims to (1) elaborate G2R Tetrapreneur Model are conducted in Student Community Engagement program in Bangka Island, and (2) to elucidate program output that is impacted to the community.

Main results of this study are (1) G2R Tetrapreneur Model can be implemented in Bangka Island by Student Community Program, even it is need high effort to do; (2) some changes occurred in the community as in impact of G2R tertepreneur model implementation,; and (3) G2R tetrapreneur model are potentially to be sustained in a long period. Implementation of G2R tetrapreneur Model can be replicate to another community with another social-economic problems.

Keywords: G2R Tetrapreneur Model, Student Community Engagement, Model Replication

INTRODUCTION

Bangka is an island located in the east of Sumatra, Indonesia, and belongs to the Bangka Belitung Islands Province. The total population of Bangka Island in 2018 is 845,486 inhabitants with an area of 11,694 km² (Anonymous, 2018a). Since 1710, Bangka Island has been one of the largest tin-producing regions in the world. Nowadays, the main economic source for the Bangka Island are pepper, rubber, palm oil, fish and marine products.

Bangka Island together with Belitung Island was originally part of the South Sumatra Province, but in 2000 Bangka Island and Belitung Island were approved as a new province named Bangka Belitung Islands Province. Until 2010, the socio-economic condition of Bangka Island was quite low. Since tin mining has been unable to sustain the regional economy, Bangka peoples is experiencing economic difficulties. This can be seen from the low gross regional domestic product (GRDP) and high poverty rates. Together with Bengkulu, GRDP figure of Bangka Belitung Islands Province's are the lowest in the Sumatra region (Anonymous, 2018b). A great effort is needed to raise the socioeconomic condition of the people of Bangka Island to develop towards a better direction, given its strategic geographical position.

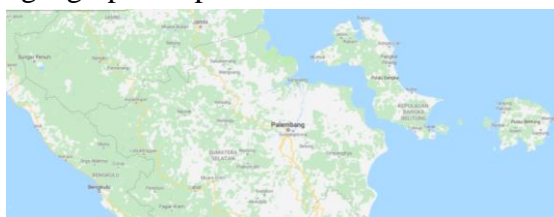


Figure 1. Bangka Island Map

Penagan is one of the villages on the island of Bangka, precisely in the district of West Mendo, Bangka Island. As is the general condition on Bangka Island, the socio-economic condition of Penagan Village is also a little bit low. Sources of community economic income are very limited, because these land resources is relatively in marginal condition. To be able to improve the welfare of the community, it is necessary to optimize the utilization of alternative available resources.

Mangrove crab (*Scylla serrata*) is one of the potential fishery commodities to be cultivated in Penagan Village. Mangrove crabs are often found in brackish waters which are overgrown with mangrove plants. Mangrove crabs are well-liked by the public considering their delicious taste with nutritional content parallel to other crustaceans such as shrimp which are in great demand both in the domestic and foreign markets.

Interest in the aquaculture of this species has been high due to the high demand/price for them, high flesh content, and rapid growth rates in captivity. In addition, they have a high tolerance to both nitrate (Romano and Zeng, 2007a) and [ammonia](#) (twice that of the similar sized [Portunus pelagicus](#)), which is beneficial because ammonia-N is often the most limiting factor on closed aquaculture systems (Romano and Zeng, 2007b). Their high ammonia-N tolerance may be attributed to various unique physiological responses which may have arisen due to their habitat preferences (Romano and Zeng, 2007b). However, their aquaculture has been limited due to the often low and unpredictable larval survival. This may be due to inadequate nutrition, disease, "moult death syndrome" (due to their highly cannibalistic behaviour during the [megalopa](#) stage), inadequate protocols (e.g. suboptimal environmental conditions), or a combination of all. *S. serrata*

can be kept easily in home aquaria when smaller, but will outgrow small setups (Reason and Bradbury, 2008).

The large market potential provides an opportunity for the development of mangrove crab cultivation in a more serious and commercial manner. On the other hand crab production so far as a whole still relies on catches from nature, so that the sustainability of its production cannot be maintained. Recently, the cultivation of mangrove crabs does not have to be at sea and in mangrove areas, but it can also be and has been successfully seeded in controlled tubs and can be produced in hatcheries of sea fish and tiger shrimp. Mangrove crabs or better known as mud crabs are one of the coastal fishery resources that have high economic value when developed and cultivated. Cultivation or commercial use of this commodity increases both for domestic consumption and for export.



Figure 2. Mangrove Crab

Indonesia's mangrove crab export market share are Japan, Malaysia, France and United States of America (USA). So as, it is very reasonable if peoples are very enthusiastic to cultivated the crab, because these hard-skinned animals is not only have a savory, but also delicious and contain highly nutritious. For this reason, Student Community Engagmenet program run by University of Gadjah Mada aim to assistance for crab culture for fishermen, especially on the coast, because this will clearly help in improving the welfare of the community and reducing unemployment in Bangka Island.

Due to raise that goal, Student Community Engagement program implemented Global Gotong Royong (G2R) Tetrapreneur Model. The purpose of this study are: (1) elaborate G2R Tetrapreneur Model are conducted in Student Community Engagement program in Bangka Island, and (2) to elucidate program output that is impacted to the community. Thirty Students established that program during 2 months at Bangka Island, and supervised by both of authors, collaboration with local stake-holders.

METHOD

This study used qualitative method. Participatory action research, focus group discussion, and on site training are applied regarding to conduct the model. Conceptually, G2R tetrapreneur model can be explained by using the figure as seen on Figure 2.

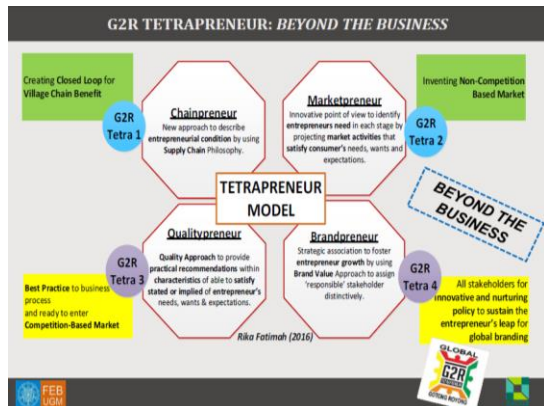


Figure 3. G2R Tetrapreneur Model

Source: Fatimah, 2018

The tetrapreneur model is a model for creating a sustainable entrepreneurship movement based on 4 pillars namely the entrepreneurial chain; entrepreneurial market; entrepreneurial quality; and brand entrepreneurship (Fatimah, 2018). G2R tetrapreneur model is a form of synergy innovation of mutual cooperation and village entrepreneurship which should bring local wisdom.

The first chain, so called entrepreneurship chain, is a new approach to describing conditions entrepreneurship by using a supply chain philosophy, which consists of all parties involved, directly or indirectly, in compliance customer request. The purpose of each supply chain must be to maximize value the whole result (Cavinato, 2002).

The entrepreneurial market is an innovative point of view to identify needs entrepreneurs at each stage by projecting fulfilling market activities the needs, desires and expectations of consumers, which are not limited to those who interact directly or buy products/services but also stakeholders involved in it (Barney, 1991; Cabrera-Suarez, 2001). Entrepreneurial quality is a quality approach in giving practical recommendations in characteristics to satisfy explicit needs or implied by the needs, desires, and expectations of entrepreneurs (Ferrel, 2014). Finally, the entrepreneurial brand is an association strategy to drive growth entrepreneurs by using the brand value approach, then establishing stakeholders that are specifically responsible for strengthening strategic position in the market, maintaining its life cycle and capabilities compatible to compete and collaborate through global best practices.

Due to realize internalizing the entrepreneurial mind set to community, it must run simultaneously by all stakeholders, i.e. Government, Academia, Civil Society, and Industry. Government have to take a role on Financing Policy Formulation, Innovation Support, and Advisory services. Academia take a role on Research and Development, Education, Incubators, and Spin Off. Civil Society take place on Collaboative action, and Capacity Building. And Finally,

role of industry is on product and service development, investment, and absorb the product. The explanation of collaboration among stakeholder can be seen on figure 3.

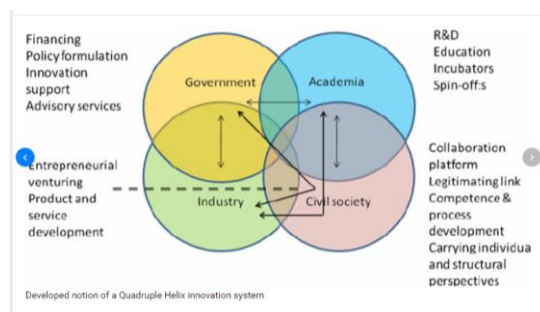


Figure 4. Scheme of Stake Holder's Roles

Source: Lindberg et al, 2014

Regarding to run the program, some activities have been conducted as follow:

1. Participatory action research

Participatory action research is an approach to research in communities that emphasizes participation and action. It seeks to understand the world by trying to change it, collaboratively and following reflection. PAR emphasizes collective inquiry and experimentation grounded in experience and social history. Within a PAR process, "communities of inquiry and action evolve and address questions and issues that are significant for those who participate as co-researchers" (Reason, P. and Bradbury, 2008). PAR contrasts with many research methods, which emphasize disinterested researchers and [reproducibility](#) of findings (Rahman, 2008). PAR practitioners make a concerted effort to integrate three basic aspects of their work: participation (life in society and democracy), action (engagement with experience and history), and research (Rahman, 2008). The way each component is actually understood and the relative emphasis it receives varies nonetheless from one PAR theory and practice to another. This means that PAR is not a monolithic body of ideas and methods but rather a pluralistic orientation to knowledge making and social change (Chambers, 2008; Allen, 2001; Camic and Joas, 2003).

This activities is started through coordination among stakeholders (government, university students, society, and industry) and preparing action research among them. Coordination among stakeholders is carried out through discussions and meetings. Hopefully, by coordnation, it is ascertained who does what and how to achieve the targets. Each actor have to do self evaluation about their strength and weakness in an effort to overcome people's economic difficulties. The activity is carried out jointly with the team and village officials in a related manner.



2. Focus Group Discussion

This activity is intended to explore valid and accurate information about the existing conditions in the target group. Some key persons were invited to participate in FGD. Key person must represent all stakeholder, i.e community groups, local officials, academicians, and related industry practitioners.

3. On Site Training

On site training was carried out to train the stakeholders how to conduct G2R tetrapreneur model comprehensively.

4. Implementation, Monitoring, and Evaluation the model

In this step, 4 pillars of tetrapreneurs was implemented by all the actors. Collaboratively, each stakeholders established entrepreneurial chain; entrepreneurial market; entrepreneurial quality; and brand entrepreneurship in the business process of distinguished commodities. The implementation of model is evaluated by a series of assesment as follow.

1. 360° assessment

360° assessment is the method used in performance appraisal in order to know the current condition of the organization, which involves all members of the organization, both superiors, themselves to colleagues in the organization, thus providing a different assessment perspective on valuation employees and members of the organization concerned so that the assessment resulting to be more valid and objective.

2. Social Media Matrix Assessment

Social media matrix assessment is an assessment of engagement (engagement) media visitors than just calculating the frequency of visits and so on. Engagement is measured by how long visitors spend, watch, give comments, and so on.

3. Output Based Assessment

Output based assessment is the method used in performance appraisal to measure organizational performance using criteria such as turnover, production costs, increased market expansion that has a benchmark on base year of each criteria used, and so on.

4. Appraisers

Appraisers are individuals who carry out a good 360 degree assessment and Performance Appraisal of the object of assessment such as supervisor, self, coworkers, turnover, product quality, production costs, and increased market expansion which is done seriously, openly, and without any pressure from other party.

5. Appraisee

Appraisee is an individual who gets a good 360 degree assessment and performance appraisal of other individuals that have been carried out seriously, openly, and without pressure from other parties so as to give results that can be evaluated for improvement of sustainability.



RESULTS AND DISCUSSION

Gotong Royong (mutual cooperation)

is Indonesia's local genuine that implemented in daily life, but, to date it is still limited practically on social activities only. Essentially, it is nice if the world community look at Indonesia as a reference center and best practices (best practice) of the so-called mutual cooperation. The existence of mutual cooperation has firmly rooted as one nation's intellectual property (Field, 2008; Hauberer, 2011). Integration and comprehensive wealth of noble values Indonesia's ancestors are reflected in mutual cooperation like trust to God Almighty, attitude please help, selfless mentality, prioritize the interests of the people, brave, unity in di, togetherersity, ness in decision making, caring and loving each other, and much more. Therefore, it is very important to make mutual cooperation sustainable.

Beside of mutual cooperation, the potency of Indonesian peoples is an entrepreneurship. G2R tetrapreneur is an effort to strengthen of entrepreneurial potency, which is conduct entrepreneurial village innovation movement based on four entrepreneurial pillars namely business supply chains from upstream to downstream, availability and alertness in responding to the market as a means of exchanging values product, product quality through quality HR, coordinated systems up to self development will affect, and brand value on the product. Integration of mutual cooperation values with the Tetrapreneur model is expected to be a synergy for the village to be able to compete, collaborate and adapt to move forward into the global order future.

Commodity that introducing to Penagan's Villager is Mangrove Crab. The program namely Community Economic Empowerment through the Development of Mangrove Crab Culture. This crab culture will certainly absorb quite a lot of labor if it is managed and developed in an integrated and large scale. Therefore, this commodity is very promising to be implemented and tried in Penagan Village. Mangrove crabs are one of the coastal fishery commodities that have important economic value. In the beginning, mangrove crabs were only considered pests by pond farmers, because they often made leaks in pond embankments. But after having a high economic value, its existence is hunted and captured by fishermen for additional income and has even begun to be traditionally cultivated on ponds. Considering that the export market demand for mangrove crabs is increasing from year to year, efforts to expand mangrove crab cultivation have been initiated in several regions.

Mangrove crabs can be maintained continuously throughout the year, due to the availability of seeds in nature at this time there are also quite a lot of land for enlargement ponds that can be prepared easily and quickly. Diversification of mangrove crab farming in a pond will increase business opportunities and optimize the potential of idle ponds and can absorb labor, so as to increase the income of the cultivating community.

The main problems that exist in the community of Penagan Village are the low of people's ability to manage available natural resources and the lack of community awareness to improve their social-economic condition. In addition, the lack of government attention to the survival of their lives, especially those living in remote areas, is one of the triggers for the difficult development of

their lives. Customs and culture prevailing in society are also difficult to change. A solution that is very highlighted is changing consciousness and thought patterns to be more advanced and follow the existing technology.

Due to overcome low ability problem of the community are to manage existing natural resources by providing training, counseling, and assistance in collaboration with the government or the local village apparatus so that it can run sustainably. This assistance is related to problems in the Penagan Village, such as mentoring the development of MSME's and business groups, including in the development of potential cultivation of mangrove carb, and home industries.

Community empowerment can be done by involving the active role of local communities according to local culture and wisdom with partners as supporters. The community is involved in proposing activities, consequently, their mindset will develop and broaden their views.

The results of the participatory action research among stakeholders shows that community were enthusiastically welcome the program offered because it is considered very useful in improve the economy of the people. Village youth and common vilagers, expressed very interest in the program.



Figure 5. The Process of PAR

The results of the FGD activity among key person shows that they agreed to implement G2R tetrapreneur model in Penagan Village, and will establish all of the business process sustain. Based on FGD results, they share their responsibilities to assist community in each pillar of tetrapreneur based on their capabilities. Industry will assist supply chains, government will assist on market, university will assist product quality, community and media will host the brand value on the product.



Figure 6. FGD Activity

The further result of this program is on site training activities for all villagers. The training was done by government staff, professional expert on crab cultivation, and students. which is explaining about A to Z business process of Mangrove Crab and analysis. The results of this activity were establishment the form of a management structure for mangrove crab cultivation.

Due To support the operationalization of the program implementation, a module was developed. The module makes it easy for them to practice the cultivation. Modules are distributed to mangrove crab farmer groups.



Jambar S. Kontruksi Tambak Budidaya Penggemukan Kepiting Bakau (*Scylla serrata*)
a. Saluran pengeluaran (outlet) b. Waring Bawah c. Waring atas

Figure 7. On Site Training

The next step activity is monitoring and evaluation. Based on monitoring and evaluation step, it has been carried out for 2 months, average harvesting of mangrove crab 10 kg was obtained in each pond. Mangrove crab are sold to traditional market at a price of Rp. 70,000.00/kg to get a total of Rp. 700,000 gross profit which will be entered into the cash of the fish farmers group.



Figure 8. Monitoring and Evaluation

Mangrove Crab cultivation can be a great potential in a farm that has not been widely known and utilized properly due to limited facilities and knowledge. Changes in paradigm in the community also occur, from traditional land utilities into modern land utilization.



Figure 9. Mangrove Crab Harvesting

The next activity carried out was the assesment of tetrapreneur implementation. The 360^o assessment shows that organisation among mangrove crab farmers at Penagan Village relatively in good condition. Based om Social media matrix assessment, it is shows that frequency of visits are quite high. Furthermore, regarding to output based assessment, it shows that turnover, production costs, and increased market expansion are succesful enough.

CONCLUSION

1. G2R Tetrapreneur Model which is conducted in Student Community Engagement program in Bangka Island can be can be stated that the programs are successfully implemented.
2. Program output have positive impacts to the community. G2R tetrapreneur model that is done by thirty students in collaboration with local government, local industry, and the community can increased welfare of the villagers.
3. The program are potentially to be sustainable in Penagan Village, and can be replicate in other villages.

RECOMMENDATION

Implementation of G2R Tetrapreneur Model have very valued prospect to leverage people's prosperity, especially for villagers.

ACKNOWLEDGEMENT

Thank you very much for University of Gadjah Mada Yogyakarta-Indonesia which financing this student community services in Penagan Village Years 2017.



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