

# Strategy to improve economic condition of fishermen living in the coastal area in Kabupaten Pesisir Selatan

Economic  
condition of  
fishermen

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## Abstract

**Purpose** – This research aims to study the economic conditions of fishermen living in the coastal area of Kabupaten Pesisir Selatan.

**Design/methodology/approach** – The method used is a descriptive analysis method supported by a participatory planning method. The importance of primary data is to understand deeply the real problems of fishermen in the field, collected by using a survey method such as field observations, in-depth interviews by gathering fishermen and related stakeholders in the area, undertaking forum group discussion, workshop and seminar. Secondary data are necessary to support the primary data analysis.

**Findings** – The results showed that there is an abundance of marine resources, but the economic condition of fishermen is far from expected. The income from fishing is not enough to feed their family's daily needs due to low catching productivity and raw fish selling price. The regency government and province do not have clear and concrete policies to resolve firmly and thoroughly the economic problems of fishermen living in the coastal areas.

**Research limitations/implications** – This study succeeds in providing two breakthrough strategic policies to improve the economic conditions of fishermen, i.e. institutional and entrepreneurial innovations.

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**Data Availability Statement:** The data that support the research findings are available from the corresponding author upon request.



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**Practical implications** – Both strategic policies have a mutual relationship. Therefore, the implementations have to integrate with one another and be executed simultaneously in a single coastal area management system.

**Social implications** – Bupati as a top policymaker in this region must take full responsibility for the successful implementation of these two strategic policies.

**Originality/value** – Providing new ideas to solve the main problem of fishermen living in the coastal area in Indonesia.

**Keywords** Coastal area resources, Fishermen poverty, Institutional innovation, Entrepreneurial innovation

**Paper type** Case study

## 1. Introduction

Kabupaten Pesisir Selatan [1] (KPS) is a coastal area located in the south part of West Sumatra Province and economically considered as a strategic area for further development as it lies in the western part of Sumatra Island, Indonesia. This coastal area faces directly to the Indonesian Ocean or Indian Ocean. KPS consists of 12 subdistricts called “Kecamatan” and “73 nagari” which called as village. The length of coastal area is about 234 km, it is the longest coastal area and the wide-ranging area of beach in West Sumatra Province with 448,000 inhabitants. Around 80% of total population of KPS lives in the coastal area. In its surrounding, have approximately 47 small islands with relatively large sizes (Statistics of Pesisir Selatan Regency, 2019).

The potential marine resources are quite rich in this coastal area as having many types of sea resources such as super anchovies, mackerel, tuna, grouper fishes, seaweed, pearl shell, etc. The seawater of this coastal area has relatively quiet waves, suitable for the aquaculture of various types of fish. Local people who live there used only 30% of potential marine resources of the coastal area for their economic benefit. It implies that the remaining of 70% as a potential reserve which have not been exploited. Why did that happen?, at least two main reasons, i.e. (1) almost all of fishermen in KPS are unskilled persons, (2) low productivity is due to lack of technology of production. If local government does not solve these problems appropriately, it will create more poverty and push them to move to urban area to search alternative jobs. If the poverty rate of fishermen increases over time, therefore, the natural wealth of marine is falling into the hands of the outsiders, including those coming from other countries that brings better technological tools to their fishermen. This is certainly a nondesirable case because it will deteriorate fishermen economy that lives in the coastal area. Indonesia as an archipelago, the sea must become a main source of prosperity, valuable source of income for fishermen living in the coastal area, and then the sea must be as the future strength of the nation economy (DKP, 2019, 2020). In that framework, the objective of this research is to review the economic condition of fishermen community living in the coastal area and to formulate eventually the breakthrough strategy in order to improve their economic condition.

## 2. Literature review

The presence of regional autonomy policy in Indonesia since 1999 by law No. 22 of 1999 and law No. 25 of 1999 and then perfected by the government regulations of 2004 have transformed one of the most centralized country in the world into the most decentralized country. Decentralization considered as the right policy in order to accelerate economic development of the regions and believed to be a policy of pro-poor. It stimulates to elevate the economic life condition of lower class people who live mostly in the rural and coastal areas. The regional autonomy policy is a system making a faire division of authority between the central and regional government; it makes easier for the private sector to play the important role in regional development and to create the regional economy to become the backbone of

national economy. Furthermore, decentralization opens widely the opportunities for regional heads to be proactive, innovative and creative in developing their regions (Tan, 2005 [2]; Wolfgang and Bert, 2009; Awang and Tri Widodo, 2014).

Based on experiences of several developed countries have indicated that the product and entrepreneurial innovations are the main factors to accelerate the economic development growth. Therefore, growing these both kinds of innovation simultaneously in people's daily life is the more productive and effective way to overcome the persistent problems of poverty. It is necessary to socialize them not only to highly educated groups of community but it should be also introduced more intensively to the groups of people with low education who live mostly in rural and coastal areas (Tan, 1992, 1994; Kurien, 2005; Piera, 2007; Ulrich and Christian, 2007; Eric *et al.*, 2013).

The nonconductive of economic environment in the coastal areas have made the fishermen poverty. It is the effect of several factors such as low knowledge and skill of fishermen, lack of technological tools, no alternative employments opportunities, lack of investment capital sources, lack of institutional and political supports, declining marine resources and the policy makers, which are less proactive, innovative and creative in the regions. All of those caused principally by lack of management system of coastal area (Andrew *et al.*, 2007; Endang, 2011; Ferrol-Schulte *et al.*, 2015; Richard *et al.*, 2021).

No matter how abundant marine resources are in the coastal areas if they are not be managed productively and efficiently, it will not give more benefit to the fishermen living in the coastal areas. Therefore, it is necessary to have a single solution to manage the whole of underdeveloped coastal areas by establishing the coastal areas into a special economic zone (SEZ), aimed to create more investments and business activities in coastal areas (Kurien, 2005; Tan, 2005, 2012).

The habits of fishermen who are lazy, unproductive, not innovative and not creative are not because of the individual nature that they were born with. Likewise, being poor was not something their plan and expectancy. Experiences showed that the life condition and the behavior of somebody depended on economic policy system where they domiciled. Therefore, no civilized society can be more innovative, creative, productive, efficient and life in prosperous economic conditions without the existence of government intervention policies to help them (Tan *et al.*, 2012; Daisy *et al.*, 2013; Nanang Dwi Cahyono, 2019).

### 3. Methods

This research uses descriptive analysis method and participatory planning. The relationship of "Source–Activity–Result" (see Figure 2), shorten by what so-called "SAR method," is as a framework of thinking for compiling a coastal area management system (Remy *et al.*, 1988; Pascal HERMAN-LASSABE, 1991; Margaret, 2002).

Field visits purpose to obtain the primary data, which in some literatures referred to "micro data," while secondary data referred to "macro data." Primary data are very useful for understanding in depth the causes of fishermen poverty who live in the coastal areas, while secondary data are to strengthen the results of micro data analysis. The main sources of secondary data are from Statistics Agency and Regional Development Planning Agency. The planning documents at the provincial and national levels, including the spatial plan of KPS reviewed deeply. The spatial plan is very helpful in understanding the direction of spatial development of coastal areas. Other secondary data come from several "technical working papers" presented in workshops and seminar forums. The participatory planning approach is as a guide to manage the research activities. The lengths of field visits were approximately six months from February to July 2020. During that period, several activities held for collecting the primary data i.e. field observation, in-depth interviews, forum group discussion (FGD), workshops and seminar:

- (1) Field observations: There are 10 persons of surveyors. They are experts who have different expertise but can synergize between each to another in doing field research. They did the observation on any economic and social phenomenon of fishermen community in the coastal areas. It did regularly during the six months of research activities; they come to each of 12 districts of KPS at least two to three times. They observe directly the daily life condition of fishermen and build the intensive communication with them at the place, and each finding discussed altogether with fishermen in order to catch the key factors that cause the poverty of fishermen's households who live in the coastal areas. The surveyors had found many important facts concerning the condition exactly of economic social welfare of fishermen's households that were unwritten and recorded by governmental body. Moreover, they found as well any disguised problems and potentialities of fishermen for better life in the future.
- (2) In-Depth interviews: Respondents are 240 fishermen, which chosen based on random sampling method. In each of sub districts, consist of 20 respondents from 12 sub districts in KPS, which are located all along the coastal areas. Identification the problems facing by fishermen community started from their problems that related to catching and cultivation, processing to the marketing problems. There have been four to eight times to organize face-to-face meeting and gathering with fishermen in each of subdistricts. From this in-depth interviews have been identified clearly the fishermen wants and needs as well as the real picture about the condition of economic social welfare of fishermen community and their expectation to local government in KPS.
- (3) FGD: It consists of 40 persons from various government and nongovernment agencies with different levels of knowledge and skills related to marine fisheries production and marketing. The FGD discussed in depth the problems of the socioeconomic welfare of fishermen households and the obstacles faced by the local government to take the policy and create strategic programs to improve the economic conditions of fishermen in the KPS. The activities conducted by research team in cooperation with BAPPEDA [3] of West Sumatra that are carried out in four times within the six months of research activities. The FGD has succeeded in raising realistic policies, strategies and action programs to overcome the problem of poverty in fishermen households in the coastal areas of KPS.
- (4) Workshop: Participants totaled 75 persons representing several organizations related to the development of fisherman's socioeconomic welfare such as from the Minister of Marine Affairs and Fisheries, local government agencies, Regional Chambers of Commerce, Research Centers, Fisher Associations, experts in the field of marine fisheries, local community leaders. During the workshop, therefore, any possible policies and strategies analyzed in order to overcome the problem of poverty in fishermen community. From this workshop, it can be pointed out clearly which the priority of policies, strategies and action programs that are more realistic, practical, efficient, effective. The one-day workshop has succeeded in formulating the integration and synchronization of policies, strategies and action programs to establish the single management system of SEZ of coastal area in KPS under collaboration with the provincial government and the Indonesian central government, including with some national and regional state companies.
- (5) Seminar, participated by 100 persons, aimed to examine more deeply and broadly the research results. All stakeholders in KPS and provincial levels have been participated

in attending the seminar, including those representing from the Minister of Marine Affairs and Fisheries. Suggestions and criticisms from seminar participants are very important and necessary for the improvement and refinement of research results. The one-day seminar organized by the research team in collaboration with the West Sumatra BAPPEDA has succeeded in formulating a vision and mission, and strategy to develop SEZ of coastal area in KPS, including policies, strategies and related action programs and its estimated development budget.

#### 4. Results and discussion

There are three main research findings, i.e. the first (4.1) related to the type of fishermen actors operating in the coastal area; the second (4.2) concerns the factors that cause the fishermen poverty and the third (4.3) shows the factors supporting local government policy to improve the economic condition of fishermen who live in the coastal area.

##### *4.1 The categories of fishermen in the coastal area*

There are five categories of fishermen in the coastal area of KPS, those are: (1) Fish-farm businessmen (FFB); (2) Fishermen as boat owners and traders (FOT); (3) Fishermen as small collectors or intermediate traders (FSC); (4) Fishermen as fish-catchers (FFC) and (5) Fishermen as a worker or labor (FWL). Each explained as follow:

- (1) FFB, considered as upper medium-scale fishermen businesspersons, they are the owners of the fish farming, produce relatively large quantities of fishes, employing 5–15 workers fishermen. In terms of marketing have already quite extensive, they produce fishes for export, their business organizations is relatively well structured and have clear legal entity such as in the form of Limited Company (PT). Such type of business is still very small in numbers. However, in the eyes of banking categorized as a “bankable business.” Usually, the owners do not live in KPS. Only some of them open a representative office in Padang, capital city of West Sumatra Province. The main headquarter of these companies are mostly in Jakarta, capital city of Indonesian Republic.
- (2) FOT, in local language called as “Toke.” His or her business organization is not yet well structured and established legally. The legal form of ownership is a proprietorship owned by one person. Certain banks and other financial institutions dare to provide loans for them, and the amount of loan they need is still relatively small, ranging from 50 to 200 million rupiah (Indonesian currency). Tokes use bank loan usually for buying motor ships or making boat with outboard motor or machine that is going to operate by the others. Tokes categorized as small-scale businesspersons by the reasons that they own only one motor boat and employ 3–5 person operators, and the caught fishes sold by Toke merely in local market. Fishermen operate the boat; have the double functions beside as operator of boat motor also as fish’s catchers.
- (3) FSC, they have already the capital but small amount in form of equity, capital typically comes from their family with relatively small value. That is why purchasing power of these intermediate traders is relatively low; they run alone their business, and sometimes assisted by their wife or children. They live within the fishermen community in coastal area; this class fishermen are not many. They usually buy directly to the catcher fishermen at the time upon landing on the shoreline, and then bring their purchasing results immediately to the local market by using two-wheeled

motor vehicles. Only one or two persons of them that have a separate place for storing their purchased fishes, and even they do not have a special place for selling fish except they have to come to the local market and staying there for several hours waiting for the buyers.

- (4) FFC, almost all people living in the coastal area of KPS are FFC. Most of them have their own traditional boat to sail, namely “boat without engine” or called “rowboat.” They often go fishing alone and usually they cannot go too far to the middle of the sea because of the boats used are very limited its cruising capacity and rowed by human hand. The results of sea fishing are only enough to feed their very basic living standard of life from day to day, they are not able to make saving for their tomorrow day and to support the life of their families in the future. They are unskilled workers because of many of them do not go to school and complete primary school education. They have never received training in order to increase their knowledge and skills, see Figure 1.
- (5) FWL, this class of fishermen community is the largest group in number and resides in coastal area. Most of them were born from fishing families who lived in the coastal area since a long time. They do not have alternative jobs except going to the sea for fishing every afternoon. They just rely on their physical power or sell their services physically to boat owners or Toke. In general, they are uneducated persons. Most of them marry early and have at least one to two children at the young age of 20 years in average. If there is no season for sailing, then they are unemployed, and to support their family life, they often borrow money from boat owners or Toke, and sometimes from relatives. These are mainly the cause why they are often entangled continuously by debts, and their economic life too much depended on boat owners or “Toke.”

#### 4.2 The factors causing fishermen poverty

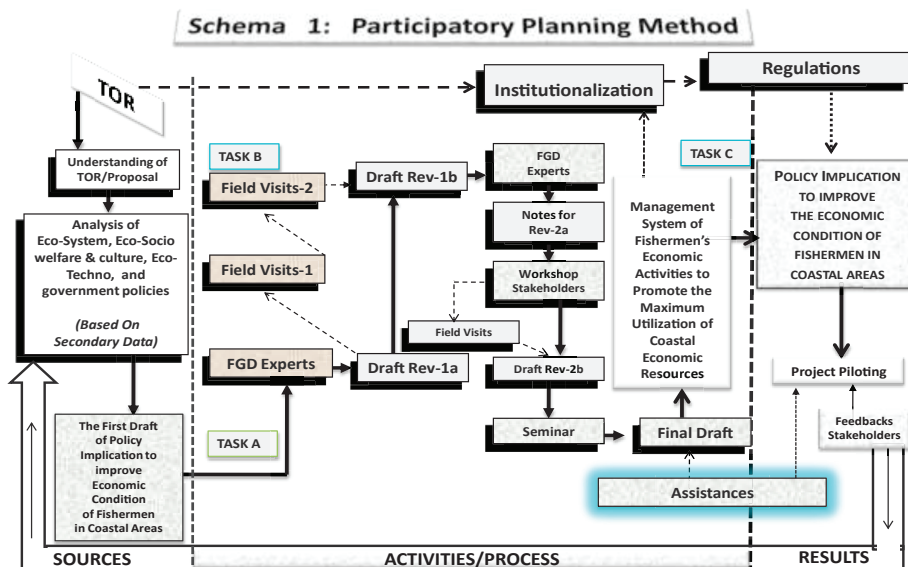
There are two main factors, which cause fishermen poverty, i.e. (4.2.1) Socioeconomic factors and (4.2.2) Technoeconomic factors. Each explained as follow:



**Figure 1.**  
The overview  
economic condition of  
fishermen living in the  
coastal area of KPS

#### General condition of socio-techno-economic fishermen family

- The fishing community living in the coastal area of KPS has not been supported by the availability of adequate infrastructure and public service facilities if compared to people who live in the cities.
- Fishermen who live in the coastal area seemly isolated from market centers and business activities due to lack of infrastructures and facilities in the area such as roads, electricity, cold storage, ice cube processing plants, public health service centers, schools, training facilities, etc. The distance of coastal area is far enough to the public service centers such as government offices, financial institutions, education and training centers, market centers, information centers, etc.
- In waiting for the better fishing season, almost all of fishermen do not have alternative sources of income. They feed their family by debt, they borrow some amount of money from their relatives. Most of them tend to borrow money from middlemen or fishing boat owners whom they call "toke", the one who provides fishing boat for them if they go fishing. They will repay that loans by next fishing results. This condition makes them economically very dependent on "toke" for last forever in life.
- Low income of fishermen is principally caused by low of productivity and selling price of raw fishes. Their income from fishing is often insufficient to cover their family daily living costs



Source(s): Adapted from A.Ch.Martinet, 1985, Firwan Tan 1989, 2012

**Figure 2.**  
Participatory planning  
method

**4.2.1 Socioeconomic factors.** There are five socioeconomic factors found causing fishermen poverty, i.e. (1) unfair income sharing (UIS); (2) inadequate income value (IIV); (3) difficulty to access financial sources (DFS); (4) inappropriate training and guidance (UTT); (5) limited assistances and services (LAS):

- (1) UIS, the differences in socioeconomic status of fishermen have consequences on the unfair income sharing between boat owners or Toke and fishermen-labors who are boat operators. Everything related to the living costs required by operators for sailing, prepared by Toke to fulfill their needs during 10–15 days of sailing in sea such as ice-stone, fish-coolant, oil or premium or diesel for motor boats, including rice and side dishes. The sharing pattern of results are carried out by way of all caught fishes purchased by Toke in Rupiah, and then deducted with all operating costs involved during sailing in the sea based on calculation of Toke. The remainders divided in the ratio of 2/3 for fishermen-labors as boat operators, and then the 1/3 for Toke, since fishermen-labor has borrowed money in advance from Toke before sailing for feeding their families who stay at home during their sailing. After deducting the debt, the income received by boat operator as fishermen-labors in many cases often equal to zero. In the other word, they do not have any more money to bring home. This condition forces them to borrow again some amount of money from Toke to bring home. Such a pattern of life often occurs repeatedly every time they go to sea, it is by them considered as a way of life that inherited and accepted.
- (2) IIV, the barriers faced by fishermen living in the coastal area of KPS are limited working capital, less of facilities and infrastructure. They are mostly traditional fishers who use equipments for fishing that are still very simple in technical aspects, mostly boats used are without machines or called “raw boat”. Therefore, the boat cannot be rowed to sail too far into the sea, they are only able to catch the smaller

fishes that are available mostly close to the beach area and they can catch only a small amount of fishes in one time of sailing. The consequences are the low amount of revenue received from one time fishing activity, ranging between Rp.25,000 and 50,000. Therefore, the traditional fishers are less productive in comparing to the fishermen who use the boat pushed by outboard motor. Moreover, the weather conditions become a major problem for traditional boat. If the hurricane season arrives, they cannot go to sea by rowboat. This type of boat is very easy to sink when hit by big waves.

- (3) DFS, in general, all of fishermen who live in the coastal area of have the difficulties to access the financial sources. The main reason are their income inflows from fish catching that are not regular and not enough even to feed them self in daily life. Most of them also do not have the other sources of income beside sailing to the sea. Their catching capacities are very limited due to they use traditional boat or boat without machine. When they would like to increase the capacity of catching, they oblige to change their boat with the motor-boat, for that they need more funding of course to buy boat with engine, so that they can sail reaching far to the middle of the sea and to increase their catching results. Unfortunately, this dream is impossible to realize since fishermen in this class are considered by regulation not bankable beside do not have sufficient collaterality if they borrow from bank.
- (4) UTT, the training and guidance program conducted by the local government has not been evenly distributed well. It was often occurred that the training and guidance programs given to the developed fishermen, while the undeveloped fishermen as the majority of population of fishermen who live in the coastal area of KPS did not get training and assistance from local government. Moreover, it was found often that the training models and technical assistances provided were not relevant to the real needs of fishermen. Instead often overlap programs occurred because the programs were done separately by different government bodies at the different time and with the different objectives as well without synchronization and linkages between one and another. In this case, it seems no coordination action among the government bodies.
- (5) LAS, the assistance ever awarded by both central and local governments that are still very limited. For example, fishermen who often get helps are the group of fishermen who own motor boats. While the highest number of fishermen is the fishing communities that only have nets and rowboats for fishes catching to the sea. This group rarely received support or assistance from the governments. It becomes worse off because some aids disbursed less relevant to the real needs of fishermen. For example, there are two or three fishing boats provided by the central government that cannot be used by fishermen living in the KPS coastal area. These fishing vessels are too modern for their needs and too expensive to maintain and operate. Therefore, the assistance then becomes redundant. It seems that the central government and fishermen living in coastal areas have not been build productive and efficient communication.

*4.2.2 Technoeconomic factors.* There are five technoeconomic factors found causing fishermen poverty, those are: (1) lack of technology transfer; (2) unavailability of logistic and accommodation facilities; (3) lack of local government breakthrough policy; (4) unavailability a SEZ and (5) unavailability of alternative financing source.

- (1) Lack of technology transfer, it is important for acceleration the growth of enterprises based on innovation products. The research findings showed that lack of technology transfer mainly caused by less intensive communication between local government

with universities and research institutions. Less innovation of fish products produced by fishermen will be the main constraint to fulfill in the dynamic needs of consumer demands today that prefer to consume more good quality and more variety of fish products. Lack of innovating the fish products of fishermen in the coastal area will also create the difficulty to compete with the varieties of imported fishes products.

- (2) Unavailability logistic and accommodation facilities, lack of innovative spirit and creativity of individual fisherman are because of unavailability of special institutions that act as stimulators, transferor, dynamisator, facilitator and innovation partners for fishermen communities in the coastal area of KPS. Innovative and creative spirit of individual can be created and grown through the incubation programs. The experiences of developed countries showed that the facilities of logistic and accommodation are necessary to support the accelerating growth of “industrial and business incubation.”
- (3) Lack of local government breakthrough policy, the improvement of economic condition of fishermen’s households is necessary and urgently required. Therefore, local government has to create breakthrough policy in order to accelerate fishermen economic development. For example, the policy to support the development of aquaculture marine fishery, particularly that can involves fishermen in big number living in the coastal area of KPS. The problem is that local government is too slow to find the solution. While this kind of work at the beginning of process cannot be effective if delivered to private actors.
- (4) Unavailability an SEZ, there has been no local government initiative to designate the coastal area to become as a special zone. It is very important to form the formal legal status of coastal area management for objectives to attract investors, moreover, to provide the legal power of local government to manage productively and efficiently the marine resources for the benefit of fishermen living in the area. Then this area can also be as a new model for any regional government to improve the economic conditions of fishermen on the coast of Indonesia.
- (5) Unavailability alternative financing source, new policy is required from local authority to initiate the establishment of Fishermen Venture Capital Company (FVCC) as one of alternative financing outside of banking system. Experiences in many developed countries shown that the venture capital is very suitable as the alternative financing source, particularly to help the potential human resource who would like to create the start-up company based on innovation products. Therefore, FVCC of Kabupaten Pesisir Selatan can be established for objective to support product innovation based on fishes produced by fishermen and to promote the entrepreneurial innovation in the coastal area.

#### *4.3 The factors supporting improvement of fishermen economic condition*

There are five factors found supporting the improvement of fishermen economic condition, i.e. (4.3.1) social capital; (4.3.2) price of fishes; (4.3.3) demand of fishes; (4.3.4) funding sources and (4.3.5) regional autonomy.

*4.3.1 Social capital.* Social capital consists of four related aspects, i.e.: (1) culture of cooperativeness; (2) client–patron tolerant relationship; (3) habit of wandering; and (4) Minang community social of life. Each explained as follow:

- (1) Cooperativeness culture, in Indonesian languages called “kegotoroyongan,” this is a kind of social capital required in process of creation new business and product innovation. From point of view, the presence of strong familization culture and social

interaction in everyday life that continues living in fishermen's daily life in KPS. For example, when they do not go to sea fishing, they usually gather at the stalls around the beach, drinking coffee and playing chess, dominoes, joking and kidding each other. Such that environmental condition indicated that among them is happening a close personal relationship emotionally which creates a strong cooperation among them. Such life pattern has a high value if transformed in form of business activities.

- (2) Client–patron tolerant relationship: The relationship between fishing worker or fishermen of wage earners with catching boat owner or capital owner is not based on a formal employment contract but rather more based on relationship with mutual trust in a sense of family. The existence of fishing boat owners is very helpful at all for the fishermen because of the boat owner or Toke does not require the fishing workers to get fish as maximum as possible in each time to go fishing. If the results of fishing do not produce the catch as expected due the occurrence of unexpected disaster, no obligation for fishermen workers or boat operators to return the money back that had been given to them. This high tolerance is a factor required to speeding up the process of economic and business development of fishermen in the coastal area.
- (3) Habit of wandering: Ethnicity of Minangkabau is a group of people in Indonesia who originally come from West Sumatra Province and often called “minang people” or “orang minang.” They are more popular known as the ethnicity that has a preference to work in the business activities, particularly in activities of small and medium-sized enterprises (SMEs). They have a habit of wandering off to all over the country until to abroad for objective to run their owned trading activities. Everywhere found minang people working as merchants and known as well as vendor or in Indonesia language called “pedagang kaki lima.” The habit of migrating and trading of minang people is a positive factor supporting to enlarge of a business network.
- (4) Minang community social of life: They have great respect for Kaum Adat and Kaum Ulama (Islamic and Muslim scholars); [4] these classes of persons have a moral responsibility for the progress of regional development and the improvement of social welfare of their people. The Kaum Adat belongs to an organization called the “Lembaga Adat Alam Minangkabau,” abbreviated as LKAAM, while the “Muslim Intellectuals Group” is under the Indonesian Ulama Council, abbreviated as MUI. These institutions have an anti-poverty vision. Therefore, they continue to pay the great attention to the poverty alleviation in West Sumatra. Several programs and funding assistances for micro enterprises realized, including financial assistances for fishermen. For example, BAZDA (Regional Zakat Agency) provides the financial support to buy motorboats for a certain number of fishermen or a group of fishermen. Likewise, in the context of adat, clan leaders or “ninik mamak” feel embarrassed if it turns out that one of their clan members is in a poverty condition. In this case, they will be proactive in helping them and finding better solutions, so that their clan can be away from poverty condition.

*4.3.2 Price of fishes.* During the period 2015–2019, the average growth of production value of fresh fish was 16.47%. It was much greater than the production growth of 4.53%. In the same period, the number of fishermen's unmotorized boat (traditional boat) tends to decrease in average –16.48%, while the number of boat with outboard motors increases +38.28% and motorships increased +1.68% (DKP, 2019). The figures indicate that the price of fish tends to increase. Therefore, the income of fishermen is still quite possible to be increased if the management system of coastal area, then capture system and technological equipments improved as well.

*4.3.3 Demand of fishes.* The level of per capita fish consumption in Indonesia tends to increase 16.27% per year in average. ASEAN and China also show the significant figures of increasing consumption, except for Brunei and Thailand (Fishery and Aquaculture Statistics, FOA Yearbook, 2018). This suggests that there will be a big potential market of fishes in domestic as well as international market for raw fishes and end products of fishes. Therefore, it is necessary to increase the benefit of fishes sold for fishermen. For that purpose, the caught fishes and aquaculture products should not be sold any more in form of raw products; it must be processed to be products with high added value and sold in form of end products.

*4.3.4 Funding sources.* Various loan schemes are available, provided either directly by banks or through the ministry, local government and state-owned companies. Meanwhile, the sources of financing come from the third parties for business also opened widely such as financial assistances in form of Corporate Social Responsibility (CSR), local government revolving funds, financial assistance from Badan Muslim's Zakat (Bazda), etc. Then, there are also the special deconcentration funds from the Ministry of Maritime Affairs and Fisheries, which is always every year there, it used by local government body for the programs to innovate the economy of fishermen's households in the coastal area. In this context, the local government has to be more proactive to create the breakthrough policies and programs in order to use those funds effectively and productive for the benefit of fishermen.

*4.3.5 Regional autonomy.* The implementation of Regional Autonomy Policy since 1999, supported by political democratization in Indonesian economy, has encouraged the local governments to play a more role in solving the problems of poverty in their regions. They must "side with the poor" and solve their owned problems, included the poverty problem of fishermen who live in the coastal area. In the framework of regional autonomy policy, the amounts of money annually from the central government distributed directly to the provincial and district governments. That amount of aids increase continuously every year in the form of the General Allocation Fund (Dana Alokasi Umum, DAU), the Special Allocation Fund (Dana Alokasi Khusus, DAK) and then village development financing assistance which is channeled through Village-Owned Enterprises, abbreviated by BUNDES. The positive impacts of all those financial aids from the central government have increased the amount of money supply sharply in the regions. This in turn has had a very positive effect on the business growth, including the development of fishermen economy in the district level of Indonesia.

## 5. Policy implications

The results of this study suggest that it is necessary for local governments to improve the economic conditions of fishermen in order to reduce significantly the poverty rate of fishermen living in the coastal areas of KPS. For that purpose, Bupati as a top leader has to intervene by creating the breakthrough policies in form of establishing new institutions or "Institutional Innovation" (5.1) and creating a fishermen's entrepreneurial innovation or "Entrepreneurial Innovation" (5.2).

The integration and interrelation between these two innovations are very important in order to create the efficiency and effectiveness of a single management system of coastal area. In this perspective, Bupati of KPS must be as the leading actor to takes full responsibility in implementing them.

### 5.1 Institutional innovation

There are three kinds of institutional innovation which are considered very important to be established, i.e. (1) Fishermen Strategic Special Zone (FSSZ); (2) Fishermen Training, Consulting and Guidance Centre (FTCGC) and (3) Fishermen Venture Capital Company (FVCC).

- (1) FSSZ, the coastal area along the coast of KPS must legally establish as a FSSZ. The objectives are to bring the government service supports closer to fishermen and to centralize all action programs efficiently in one place. This allows FSSZ to implement a single management system, which is more attractive to investors and can provide an internationally more competitive and free environment for exports. FSSZ is a business entity that has a legal form as a Limited Liability Company (PT or Ltd.) that managed by a Board of Directors (BOD) and supervised by Board of Commissioners (BOC). FSSZ owned by all of fishermen and group of fishermen who live in the coastal areas of KPS included local government and regional-owned companies. Local government must take the role as the controlling shareholders. The other shareholders can come from outsiders after getting legal approval from fishermen and local government as shareholders. The main functions of FSSZ, i.e. the first is to manage the coastal area and its resources, then promoting infrastructure development of coastal area, improving the socioeconomic welfare of fishermen households living in the zone. The second is to create and integrate the process of production from upstream to downstream so that the products sold are in form of end product with high added values. The third is to take the key role in marketing of products produced by fishermen. The forth is to increase the entrepreneurial sprits of fishermen so that becoming more productive, innovative and creative for purpose to increase the various kinds of product and its competitiveness.
- (2) FTCGC, the most of fishermen who live in the coastal area of KPS found in condition of less motivation and technical know-how, and technological equipments are far from the necessary condition. These are the reason why the abundant of wealth of marine resources owned but not able to be fully exploited by fishermen who live in the coastal area. Therefore, it is very important to develop the motivation of fishermen and to improve their ability in technical know-how and overall skills. In this context, it is necessary to transform their traditional mindset, which is unproductive, noninnovative and uncreative so that becoming more productive, innovative and creative. The expected results are to make them to be able and used to work in manner of agro-industrial production and business orientation, these are not an effective job if done partially and individually. Therefore, it must be conducted in one single system of management coastal area. FTCGC has to be established as one of strategic instrument of FSSZ to empower and to improve the skill and technical know-how of fishermen human resources.
- (3) FVCC, it is a very relevant financial company in order to help the one who has strong potential of human resource, high motivation but lack of initial capital to start the business, while the business projects that going to be run have a potential product and market. The main mission of "Venture Capital Company" is to invest in form of equity and to accompany the investee company to grow and develop. The concept of VCC is very different from other financial institutions including bank. VCC run the business on a "risk sharing basis," but things like this cannot be found and done in other sources of financial institutions, including at conventional banks. There are several forms of financing provided differently from other financial institutions by VCC. Those are such as seed capital for business innovation, bridging finance for business projects in preparation to obtain credit from conventional banks, financing for restructuration of nonperformance loan, capital participation for establishment of new business, joint investment in a project development, financing for SMEs to promote the technological innovation and diversification products, etc. The VCC must take a part in managing the investee companies to minimize its investment risk,

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it also provide any services in the form of mentoring, coaching, consulting, monitoring and supervision. FVCC has to integrate solidly to FTCCG, and both must be in one system of management coastal area under management control of FSSZ.

### 5.2 Entrepreneurial innovation

Entrepreneurial innovation aims to develop an industrial spirit for fishermen. Three strategic programs implemented simultaneously which consist of (1) transforming the traditional fishermen mindset; (2) transforming the traditional production and (3) transforming traditional organization:

- (1) Fishermen mindset, transforming of fishermen's mindset is for objective to build entrepreneurship spirit and industrialization manner of work. Industrialization is not always associated with the connotation of advanced technology. The simpler understanding of industrialization is that a process to transform the input factors to be the output factor in order to create either a high added value or intermediary products and related services or till to end products and its related services and then accepted by the market. Only by industrial process therefore caught fishes can be increased its added value as high as possible. An entrepreneur is the one who has the specific habits, some of that are enjoy to take the risks or as risk taker, to innovate and create related services, to diversify products and its related services, to explore resources to search new sources and new benefits, to transform and process any commodities, to create new opportunities and benefits, etc. The facts showed that an entrepreneur could be born through experiences, several programs of education, training, coaching, assistance and gathering that carried out periodically, systematically and continuously by the smart institution, etc.
- (2) Traditional production, fishermen in KPS are generally not used to work with high-tech equipments and information technology systems. That is why they still produce raw fishes and only sell it for the local market. Some of them do the processing but only to make the fish dry. The condition of the production process is still not clean because it is carried out in an open space that is less sterile, and there is no control of the quality of fish processing. Moreover, when better fishing season comes, there were often a lot of fish being caught so that it exists over production because of not absorbed by the market. Therefore, the price of fish drops drastically and not all of caught fishes sold, the over production forces fishermen to throw them away or buried in the ground. Therefore, it is time to improve and develop technical knowledge for fishermen and provide them with more productive and efficient equipments. Thus, fishermen can change their production pattern from producing only raw fishes to the production patterns that produce various types of processed fishes with good quality and high added value so that accepted by market. The strategic programs are to introduce agro-industrial production patterns supported by better and more effective agribusiness management systems.
- (3) Legal Status, the condition of existing business organization owned cannot support if they are going to enlarge their businesses to a professional manner because of fishermen community dominated by individual activities, not clearly organized in form of legal entity. Unclear legal status of fishermen who lived in coastal area making them in difficulties when they would like to borrow money from the formal financial institutions, getting grants and subsidies from Government. Therefore, local government should encourage and help them in legalization process of their existence businesses in the coastal area of KPS.

## 6. Conclusion

- (1) The condition of daily life of fishermen's household in the coastal area of KPS of West Sumatra Indonesia is very sad indeed. It is very unreasonable because marine resources are available and extremely abundant. Two main reasons why did this happen, i.e. (1) almost all of fishermen in KPS are unskilled persons; (2) low productivity is due to lack of technology of production.
- (2) The marine resources in the coastal area are more widely exploited by outsiders, especially those coming from neighboring countries, illegal fishings are still a lot going on with the use of fishing boats that are more modern than the one used by local fishermen in KPS.
- (3) Local government intervention policy is very important and urgently required. The study found that the regency government and province do not have clear and concrete policies to resolve firmly and thoroughly the poverty problems of fishermen in the coastal area of KPS. The results of this study suggest that the local government of KPS must be courageous to create the breakthrough policies to improve the economic condition of fishermen community in the coastal areas. There are two grand policies suggested, namely institutional and entrepreneurial innovations:
  - **Institutional innovation is to establish three kinds of institution i.e.,**
    - Fishermen Special Strategic Zone (FSSZ) for objective to provide support services that close to fishermen community.
    - Fishermen Training, Consulting and Guidance Center (FTCGC) as a strategic instrument of FSSZ to empower and to improve skill and technical know-how of fishermen human resources.
    - Fishermen Venture Capital Company (FVCC) as a source of financial alternative nonbanking to support the financing needed to accelerate the product innovations and entrepreneurial development process of fishermen.
  - **Entrepreneurial innovation consists of three strategic programs i.e.,**
    - Transforming traditional fishermen mindset into entrepreneurial and industrial ways of thinking.
    - Transforming the traditional production pattern into agro-industry and agri-business models of production.
    - Transforming the pattern of traditional business organizations into SMEs, cooperatives and business groups which its legal entity is clear.

The implementation of these two breakthrough strategic policies will be very efficient and effective if supported by a solid cooperation between the local government and universities and with research institutions, aided financially by regional government-owned financial institution.

- (4) For further research required to arrange the action plan of these two breakthrough strategic policies.

## Notes

1. Kabupaten Pesisir Selatan abbreviate as KPS. In hierarchies of governmental administrative of Indonesia, “*kabupaten*” is a governmental body below the provincial government, headed by a “*Bupati*.” Kabupaten consists of several sub-districts called “*kecamatan*” and headed by a “*Camat*.” The lowest level of governmental administrative is the village, called “*nagari*” which is headed by a head of nagari called “*wali nagari*” in case of West Sumatera Province.
2. Firwan Tan is a team leader of this research project. He is a professor of industrial economics in Andalas University. He was one of the founders and was the first person appointed as President Director of West Sumatra Venture Capital Company Ltd. Therefore, he knows how the venture capital companies work and it differs from other financial institutions.
3. BAPPEDA is a planning and development agency at regional level, an abbreviation of “*Badan Perencanaan dan Pembangunan Daerah*”, it exists at the provincial and regency or city levels, translated into English it become “Regional Planning and Development Agency”. At national level called BAPPENAS stand for of “*Badan Perencanaan dan Pembangunan Nasional*” or “*National Planning and Development Agency*”. This kind of agency is so important and plays the key role in the planning and programming as well as budgeting of national as well as regional development.
4. Kaum Adat in Minangkabau West Sumatra is a group of respected persons who handles the roles of traditional law. While Kaum Alim Ulama is a group of respected persons who handles the roles of islamic law in West Sumatra Province.

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