

The Impact of Strengthening Community Economy on Management of Common Natural Resources in Small Islands

By: Didit Okta Pribadi¹

Abstract

Kepulauan Seribu is a district consists of 2 sub districts, 6 villages, and 110 small islands. It lies on north of DKI Jakarta, the capital of Indonesia, and has many kinds of natural resources such as mine, fish, and beautiful landscapes. Unfortunately, the provision of infrastructure in district becomes expensive and inefficient due to the scattered small communities caused by the scattered small islands. It makes lack of prosperity, education, technology, capital, information, interaction across islands and limited energy supply (gasoline, gas and electricity) in community. This situation cause competitive market does not work and replaced by monopoly market controlled by some traders from outside islands who could pay information and transportation cost. The traders always use their monopoly power to maximize the benefit by giving a cheaper prize for community product (fish) and accept extra benefit through selling expensive energy supply (gasoline and gas) for catching fish. These situations pressure the community to get enough income by exploiting their resources. In year 2004, Kepulauan Seribu became an autonomic district separated from North Jakarta district. The new local government has policy to protect environmental and natural resources, and increase community prosperity. On the contrary, the government policies have created conflict between government and their own community who feel forbidden to catch the fish as they usually did before. It makes this problem becomes more complicated, and under these circumstances natural resources depletion becomes worse than before. This paper tries to explain that our action research by strengthening community economy could reduce conflict and decrease environmental and natural resources degradation. It consists of five kinds of efforts as follows: (1) forming community economy institution, (2) increasing financial access, (3) increasing capacity on using technology, (4) increasing infrastructure especially for information and transportation, (5) increasing energy supply to support economy activities. Those efforts are conducted by using participatory approach that supported by literature and baseline data analyzing, and policy dialog with government and related stakeholders. Our research result has been accepted by stakeholders and there is a commitment between government and community to cooperate in developing this region as well as conserving environmental and common natural resources.

Background

It has known that property rights become one of important aspect to reach sustainability in environment and natural resources management. Clear property right could give enough incentives to person or people to maintain his own right. Besides, competitive market mechanism also could allocate natural resources efficiently when it has clear property right (Anwar, 2005).

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According to Hardin (Rose, 2002), there are only two kinds of property rights that could prevent natural resource depletion. The first is individual property right and the second one is government property right. He says that, common property was not appropriate property right since it gives opportunity for individual to exploit without responsibility to conserve. He calls the phenomena as tragedy of the commons.

Several years later, some researcher has found that common property actually is just other form of property right. They argue that Hardin say the wrong conclusion about common property. The phenomena that were described by Hardin did not happen in common property circumstances but in open access situation. Open access resources occur in the situation when clear property right difficult to define or transaction cost to bring property right into reality is too expensive.

For example, atmosphere is one of resources that could not divide easily among countries. So it is quite difficult to prosecute certain country to responsible for the damage. As the result each country could product air pollutant without responsibility to fix air condition. In the other situation, although the property right of resources is clear but it is quite difficult to bring it into reality because of high transaction cost. For example, forest and sea are resources that need high cost to watch and monitor especially for the countries that have wide sea and forest. Finally, clear property rights are useless because without monitoring by the owner the resources become open access.

Common property resources are different from open access resources. The property right is hold by community. The use of resources is arranged by agreement among members of community, so sustainability use of resources could be attained. Anyone who disobeys the agreement would be punished by their community.

According to the theoretical explanation above, phenomena that we saw in Kepulauan Seribu is unique and interesting to analyze. Kepulauan Seribu is a district consists of 2 sub districts, 6 villages, and 110 small islands. It lies on north of DKI Jakarta, the capital of Indonesia, and has many kinds of natural resources such as mine, fish, and beautiful landscapes.

Unfortunately, the provision of infrastructure becomes expensive and inefficient due to the scattered small communities caused by the scattered small islands. It makes lack of prosperity, education, technology, capital, information, interaction across islands and limited energy supply (gasoline, gas and electricity) in community. This situation cause competitive market does not work and replaced by monopoly market controlled by some traders from outside islands who could pay information and transportation cost.

The traders always use their monopoly power to maximize benefit by giving a cheaper prize for community product (fish) and accept extra benefit through selling expensive energy supply (gasoline and gas) for catching the fish. These situations pressure the community to get enough income by exploiting their resources.

We already mention that sea included as open access resources. Thus, under this monopoly market structure, the depletion of sea resources becomes extremely increase. In year 2004, under decentralization policy, Kepulauan Seribu became an autonomic district separated from North Jakarta district. The main policies of new local government are to conserve environment and natural resources, and increase community prosperity.

On the contrary, the government policies have created conflict between them and their own community who feel forbidden to catch the fish as they usually did before. It makes this problem becomes more complicated, and under these circumstances natural resources depletion becomes worse than before.

In this situation push environment and natural resources conservation by law is not effective policy. The people need fish for continuing live. They do not have alternative income source besides catch the fish and sell it to the outside traders. Increasing community prosperity by community institution development and create alternative source of income could be more effective and efficient. We have hypothesis that community economy is the best solution for the problem. It could enhance bargaining power in transaction with outside traders and develop alternative source of income by processing activities.

We have doing some action research to identify and analyze existing condition, and continue with facilitate stakeholders to make agreements about development program for short and middle period of time. One of priority in the agreements is to strengthening community economy.

Research Objectives

The objectives of this research are to:

1. identify and analyze existing condition through secondary data
2. identify and analyze perception of development stakeholders
3. identify and analyze existing condition base on community aspiration in each villages
4. identify and analyze appropriate development program for short and long period of time, especially to enhance community economy
5. evaluate the preliminary result from community economy institution that has been formed under our facilitation.

Methodology

The first step is collecting secondary data. It consists of Kepulauan Seribu Regency by numbers and villages potency database from Central Statistic Bureau, Republic of Indonesia. The second step is collecting perception of stakeholder by questioner. There are four kinds of stakeholder as follows: (1) fishermen, (2) small scale entrepreneur, (3) government officer, and (4) PPMK facilitator (credit program that is arranged by province government). The third step is getting community aspiration by PRA (Participatory Rural Appraisal) and RRA (Rapid Rural Appraisal) approach in 6 villages. The fourth step is analyzing existing condition and formulates appropriate efforts to strengthening community economy by arranging development program for short and long period of time. The fifth step is evaluating work performance of community institution that has been formed under our facilitation by primary data from the institution and deep interview with the member and manager of institution.

Results

1. Result from Identifying and analyzing secondary data

Characteristic of the region is one of important aspect that must be considered in regional planning development. It covers physical / geographical, population, infrastructure, and social economy activities. Each of these elements is mutually dependent and determines the direction of regional development. The condition of each aspect of Kepulauan Seribu base on secondary data could be written as follows:

1.1. Physical / Geographical

Kepulauan Seribu is a group of coral islands that is formed by coral biota and its association (algae, malusho, foraminifera, etc.). As the consequences, this region has ecotourism potency base on beautiful landscape, and coral fish potency that most wanted by consumer.

However, the long distance from Jakarta and lack of transportation infrastructure has caused this region become isolated. Development activities are very limited, so community prosperity becomes low because of minimum infrastructure. All villages in Kepulauan Seribu included as underdeveloped villages category (BPS, 2003).

Unfortunately, the lack of transportation infrastructure could not inhibit environment and natural resources depletion. The minimum monitoring capacity from the government has developed unsustainable use of resources. The existence of private and exclusive ecotourism

activities has produce pollutant to the sea. Furthermore, the coming of outside traders who could pay transportation and information cost has make monopoly market that giving them maximum benefit through buying the fish with a low prices. It makes fishermen work hard everyday to increase the quantity of their catch just for get limited income. Some of them finally use poison and bomb to increase their catch.

As the consequences, the degradation of fish potential and environment condition has been happening all this time. Right now, fishermen must be going to the more distant area for catch the fish (Figure1). Furthermore, the damage of beautiful landscape because of pollutant, poison and bombing activities has caused the decreasing of ecotourism potentials.

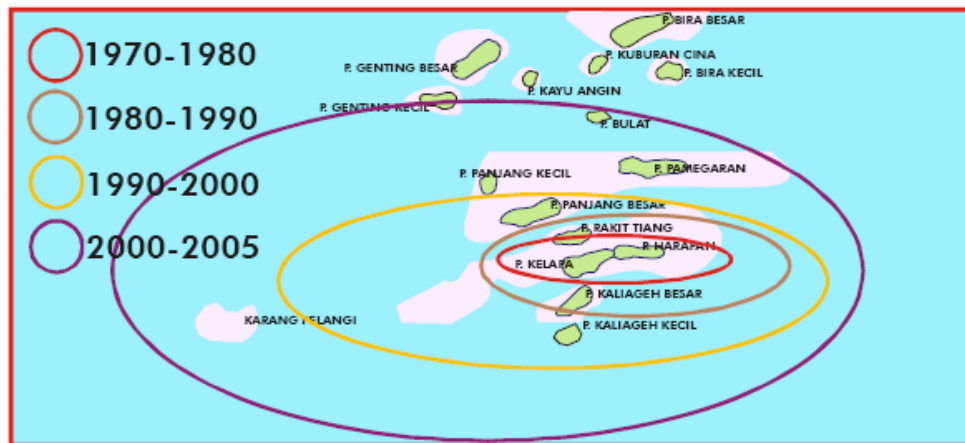


Figure 1. Map of distant area of fish catching from year 1970 - 2005

When capacity of human resources in communities is limited, natural resources become the only hope to get income. Like in Kepulauan Seribu, ecotourism and catching fish become two dominant sectors that have potency to increase community prosperity. Unfortunately, those potencies are decreasing along with environmental degradation. If the potencies are disappears, the people of Kepulauan Seribu would loss their biggest opportunities to escape from poverty.

1.2. Demography

Kepulauan Seribu Selatan and Kepulauan Seribu Utara are two sub districts under Kepulauan Seribu regency. The first one, consist of three villages such as Kelurahan Pulau Tidung, Pulau Pari and Pulau Untung Jawa. The second also consist of three villages such as Kelurahan Pulau Panggang, Pulau Kelapa, and Pulau Harapan. According to distribution population in Kepulauan Seribu regency (Table 1), shows that several villages have high density.

Table 1. Population Number and Density of Each Village in Kepulauan Seribu

Name of Villages / Sub District	Area (Km ²)	Population Number	Density
Pulau Tidung	1,0690	4,043	3.782
Pulau Pari	0,9457	2,124	2.246
Pulau Untung Jawa	1,0285	1,698	1.651
Kepulauan Seribu Selatan	3,0432	7,865	2,584
Pulau Panggang	0,6210	4,351	7.006
Pulau Kelapa	2,5847	5,126	1.983
Pulau Harapan	2,4472	1,910	780
Kepulauan Seribu Utara	5,6529	11,387	2,014

Source: BPS, 2003

Population of Kepulauan Seribu commonly concentrates in Pulau Kelapa, Pulau Panggang and Pulau Harapan. In those villages transportation infrastructure is more develop. In addition, economic activities are more diver than other villages. However, the high density of population has cause increasing of environmental degradation in those three villages.

Base on data of population number by jobs, table 2 shows that fisheries and tourism activities become two important source of income. It means that community living really depends on those activities. If it has decreasing overtime, the community would loss their job and lives in poverty. Since it needs good environmental support, so natural resources and environmental conservation in this area is required.

Table 2. Population Number above 15 years Old Base on Their Jobs

No	Jobs Sector	Population Number
1	Agriculture, forestry and fisheries	4.176
2	Mine	16
3	Processing industry	40
4	Electricity, gas and water	8
5	Construction	128
6	Trade, restaurant and hotel	1.064
7	Transportation and communication	160
8	Financial, assurance and rental services	8
9	Other services	808

Sources: BPS, 2003

Data of population number by education in figure 1, shows that 11.87% of population does not have elementary school education, and 72.89% of population only has elementary and junior high school education. It gives a clear picture that capacity of human resources in

Kepulauan Seribu is very limited. Lack of human resource capacity has become one of barrier in developing and using technologies. Consequently, community live still depend on extraction of raw material from environment without effort to develop fish culture or fish processing.

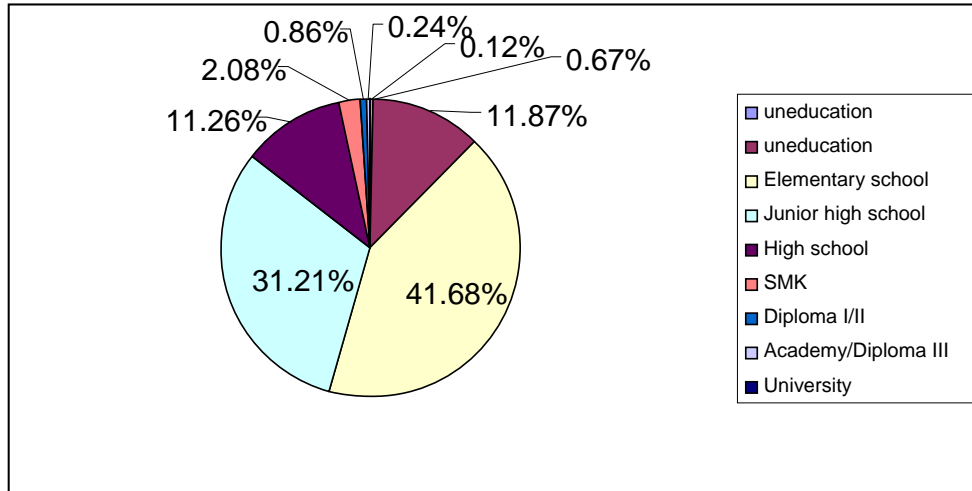


Figure 1. Proportion of Population Number above 15 Years Old, Base on Their Education (BPS, 2003).

1.3. Infrastructure

One of transportation infrastructure that is used by people in Kepulauan Seribu is motor boat. As we could see at table 3, it only serve people trip from Kepulauan Seribu to the other region such as Muara Angke (Jakarta) and Kronjo (Tangerang). Another transportation infrastructure is betok boat that serve people trip intra region (Table 4). Unfortunately, it only serve people trip among Pulau Tidung, Pulau Pramuka and Pulau Harapan. Base on this data and direct observation in Kepulauan Seribu, people trip extra region is more dominant than intra region. It indicates that interaction with outer region is more intensive than intra region. This situation makes population in Kepulauan Seribu less interact each other, especially among people who lived in different island. As the result, population in Kepulauan Seribu is divided into small communities and we have known that small communities could not reach enough economic of scale to develop economy activities.

Table 3. Number of Motor Boat, Passenger, and Tariff in Kepulauan Seribu

No	Route	Number of Motor Boat	Passenger	Tariff (Rp)
1	Muara Angke to P. Pramuka P. Panggang	6 0	2.447 -	15.000 -
2	Muara Angke to P. Kelapa dan Harapan	8	62.900	15.000
3	Rawa Saban to P. Tidung	3	25.232	10.000
4	Rawa Saban to P. Lancang	0	0	0
5	Rawa Saban to P.Panggang	0	0	0
6	P. Kelapa to Kronjo (Tangerang)	2	59.217	13.000

Source: BPS, 2003

Table 4. Number of Passenger of Betok Boat and Tariff

No	Route	Number of Passenger of Betok I	Number of Passenger of Betok II	Tariff
1	Muara Baru ke P.Tidung	0	0	11.500
2	Muara Baru to P. Tidung and P. Pramuka	1.433	0	11.500
3	Muara Baru to P.Tidung, P. Pramuka and P. Kelapa	2.188	0	11.500
4	P. Tidung to P. Pramuka and P. Kelapa	0	0	-
5	P. Tidung to P. Pramuka	0	0	-
6	P. Pramuka to P. Kelapa	0	0	-

Source: BPS 2003

Telecommunication infrastructure is one of limited infrastructure in Kepulauan Seribu (Table 5). Limited information network among small communities would inhibit competitive market mechanism. As the result, economic activities would be segmented to the small scale activities and it gives opportunity to the traders from outer region to develop monopoly market structure (Anwar, 2003).

Table 5. Number of Communication Facilities at Each Sub District in Kepulauan Seribu

No	Sub district	Post Office	Public Telephone	Public telephone (Wartel)	Internet
1	Kep. Seribu Selatan	0	0	4	0
2	Kep. Seribu Utara	1	0	5	0
	Kepulauan Seribu	1	0	9	0

Source: BPS, 2003

The other limited important basic infrastructures are education and health facilities (table 6 and table 7). Lack of those two basic infrastructures has cause low human resource capacity of the community. Unfortunately, the provision of sufficient basic infrastructure becomes expensive since the population is scattered in divided small communities.

Table 6. Health Facilities in Kepulauan Seribu

Facilities	P. Tidung	P. Pari	P. Untung Jawa	P. Panggang	P. Kelapa	P. Harapan
Rumah Sakit	0	0	0	0	0	0
Rumah Bersalin	0	0	0	0	0	0
Poliklinik/Balai Pengobatan	0	0	0	0	0	0
BKIA	0	0	0	0	2	0
Puskesmas	1	2	1	1	1	1
Pos KB	4	4	3	3	0	0
Posyandu	0	0	0	0	0	0
Apotik	0	0	0	0	0	0
Dokter Praktek	0	0	0	0	0	0
Bidan Praktek	0	0	0	0	0	0
Dukun Pijat / Bayi / Tradisional	15	2	1	1	12	7

Source: BPS, 2003

Table 7. Education Facilities in Kepulauan Seribu

Facilities	P. Panggang	P. Kelapa	P. Harapan	P. Tidung	P. Pari	P. U. Jawa
Kindergarten	2	1	1	0	0	0
Elementary school	3	2	2	4	2	1
Junior high school	1	0	1	2	0	1
Senior high school	1	0	0	0	0	0
SMK	0	0	0	1	0	0

Source: BPS, 2003

Energy capacity is the next limited infrastructure in Kepulauan Seribu (table 8). Most of electricity supply is depend on gasoline as resources. Since the gasoline prize is increasing because of limited government capacity to subsidize, the provision electricity becomes more expensive time to time. Lack of electricity causes the processing activities do not developed in Kepulauan Seribu.

Table 8. Number of Electricity Consumer in Kepulauan Seribu

No	Island	Consumer	Genset	Gasoline (ltr/hour)	
				Min	Max
1	P. Panggang	600	4	80	98
2	P. Pramuka	289	4	55	80
3	P. Kelapa	902	5	90	120
4	P. Kelapa Dua	83	3	17	25
5	P. Harapan	250	4	40	60
6	P. Sebira	98	1	12	18
7	P. Tidung	690	6	90	120
8	P. Payung	47	1	5	9
9	P. Pari	157	4	25	35
10	P. Lancang	282	4	40	60
11	P. Untung Jawa	289	4	45	70

Source: BPS, 2003

1.4. Social Characteristic

Social capital of population in Kepulauan Seribu is still powerful. It could be shown by table 9 that several social organizations is still exist and active. Karang Taruna is organization for the young people, PKK is organization for house wife, and Majelis Taklim is organization for religion activities.

Table 9. Social Organizations of Kepulauan Seribu

No	Village	Karang Taruna		PKK		Majelis Taklim	
		Number	Member	Number	Member	Number	Member
1	P. Tidung	1	60	1	50	1	300
2	P. Pari	1	45	1	35	1	40
3	P. Untung Jawa	1	100	1	50	1	220
4	P. Panggang	1	25	1	47	1	60
5	P. Kelapa	1	42	1	30	1	700
6	P. Harapan	1	35	1	45	1	160

Source: BPS, 2003

Actually, good capacity in social capital is an asset that could be used to create community economy institution. It is very useful because social capital could reduce transaction cost (Anwar, 2004). Work performance of community economy would be more efficient because of mutual trust that already exist and better information flow among population.

Community economy institution becomes important in the situation that competitive market mechanism do not exist. Without competitive market mechanism efficiently resource allocation could not be reached and distribution of value added becomes imbalance. Community economy institution could replace competitive market mechanism by using collective rule of the game to reach efficiently resource allocation and fairly value added distribution. Additionally, community economy could increase economic of scale and economic of scope of community economic activities so that it would reduce cost and increase benefit.

1.5. Economic performance

Base on GDP data without gasoline sector (figure 2), two dominant sectors that make significant contribution are (1) agriculture (fisheries) and (2) trade, hotel and restaurant (tourism). It has mentioned before in previous discuss. The next important sector are (3) construction, (4) electricity, gas and clean water, and (5) transportation and communication. It shows that population in Kepulauan Seribu must expend significant amount of their income for energy, transportation and communication. Once again, it proves that energy, transportation and communication become constrain for economic development in Kepulauan Seribu.

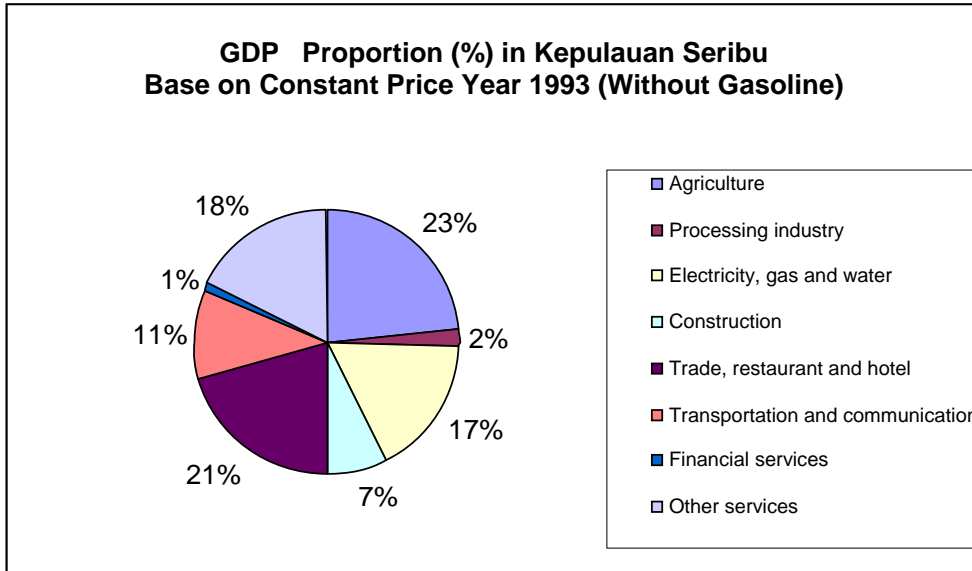


Figure 2. GDP Proportion (%) in Kepulauan Seribu Base on Constant Price Year 1993 (Without Gasoline)

Furthermore, base on GDP data including gasoline sector (figure 3), could be shown that gasoline sector become very dominant sector. It contribution is larger than the other sector. Unfortunately, value added from gasoline sector does not give multiplier effect to the people income. This activity is very exclusive and cause regional leakages.

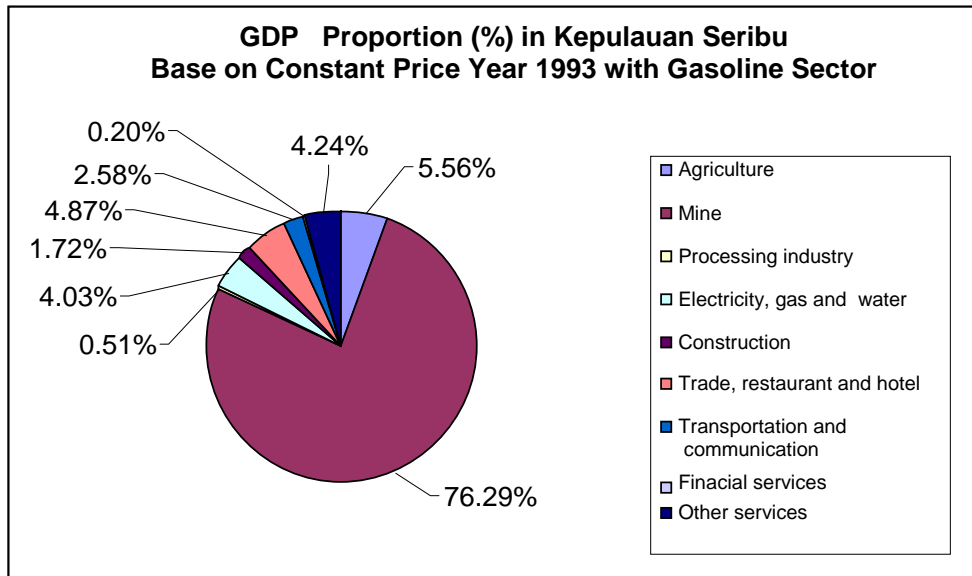
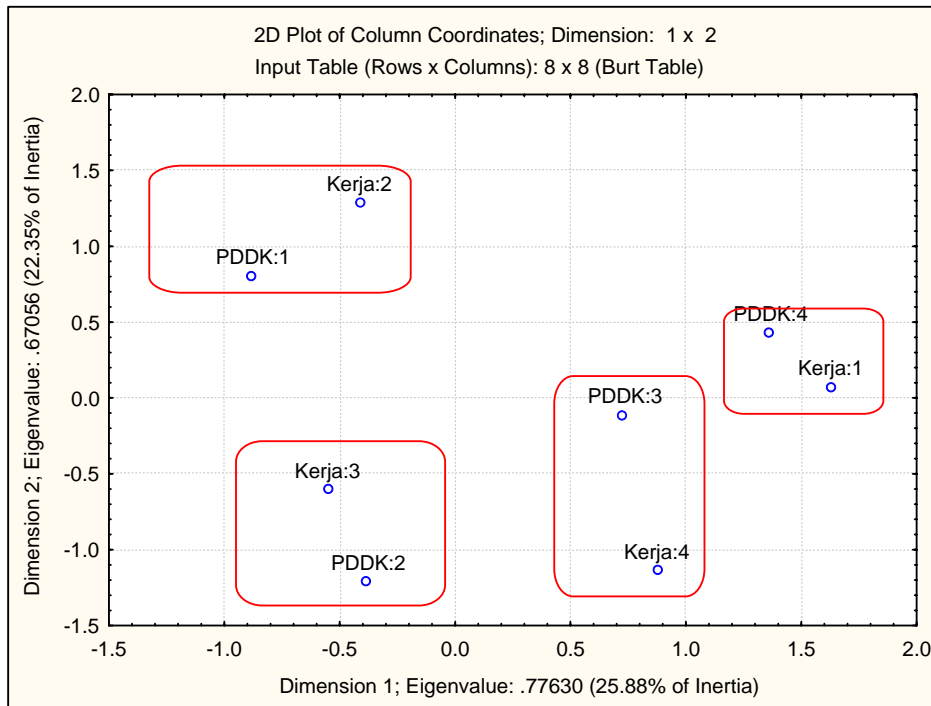


Figure 3. GDP Proportion (%) in Kepulauan Seribu Base on Constant Price Year 1993 with Gasoline Sector

2. Result from Identifying and Analyzing Perception of Development Stakeholders

It is mentioned before that there are four groups of stakeholder such as fishermen, small scale entrepreneur, government officer and PPMK facilitator. The analysis try to describe their perception about existing condition in Kepulauan Seribu and some potencies that could be used to develop community prosperity. For the first question about education capacity, small entrepreneur is associated with elementary school; fishermen are associated with junior high school, PPMK and government officer are associated with high school and undergraduate (figure 4). It shows that lack capacity of human resource in the community become one of constraint to develop prosperity. Unfortunately, when some people could increase their education then they shift from real sector (fisheries and small scale entrepreneur) to government officer. The formal job is more interesting than real sector since real sector do not give an opportunity to develop and to reach a better future. Base on this situation, increasing of human resource capacity through education could not bring a better condition for the community. It just increases brain wash phenomena from the community.



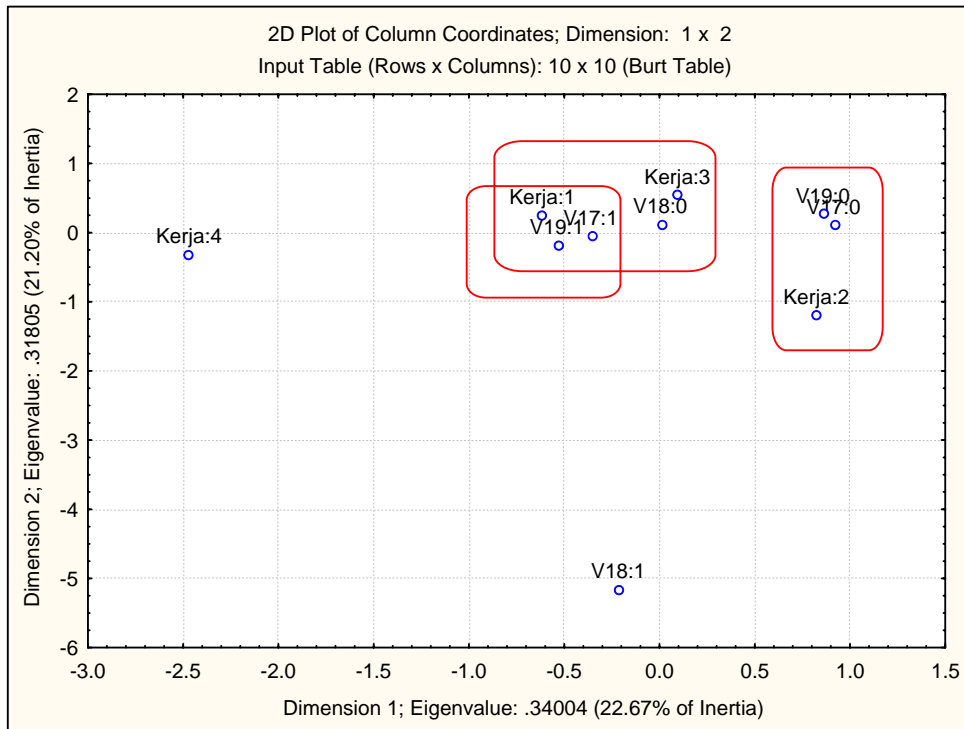
Remark:

PDDK1 : Elementary school
PDDK2 : Junior high school
PDDK3 : Senior high school
PDDK4 : Undergraduate

Kerja1 : Government officer
Kerja2 : Small entrepreneur
Kerja3 : Fishermen
Kerja4 : PPMK facilitator

Figure 4. Perception of Stakeholder about Education

The second question is their perception about natural resources in Kepulauan Seribu (figure 5). Government officer and fishermen, the two important stakeholders who connected with natural resource management have a perception that fish resources could not become potentials source of income anymore. It is because the depletion of fish resources is very large lately. Regrettably, they do not think about fish resources rehabilitation, but see coral and sea sand could become potential assets to replace it. Therefore in the future there is possibilities the environment and natural resources become more damages if there is no appropriate development policy.



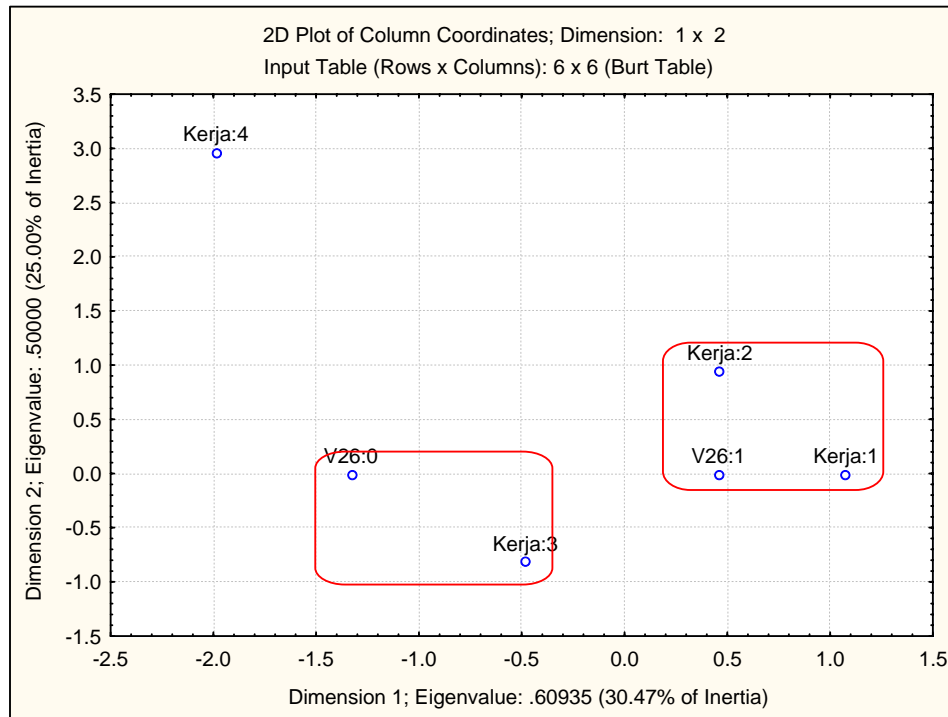
Remark:

- | | |
|----------------------------------|---------------------------------|
| Kerja1 : Government officer | V17:0 : Coral and sea sand (no) |
| Kerja2 : Entrepreneur | V18:1 : Fish (yes) |
| Kerja3 : Fishermen | V18:0 : Fish (no) |
| Kerja4 : PPMK Facilitator | V19:1 : Land resource (yes) |
| V17:1 : Coral and sea sand (yes) | V19:0 : Land resource (no) |

Figure 5. Perception of Stakeholder about Environment and Natural Resources in Kepulauan Seribu

The third question is their perception about population capacity to increase their wealth (figure 6). Government officer and small scale entrepreneur have the same perception that their community still has sufficient capacity to increase community prosperity. But fishermen who live depend on catching fish; their community has limited capacity to increase their wealth. It is important perception since most of people in community work as

fishermen. This situation describes how fishermen have less expectation on catching and selling fish as source of income in the future.



Remark:

Kerja1 : Government officer

Kerja2 : Small entrepreneur

Kerja3 : Fisheries

Kerja4 : PPMK Facilitator

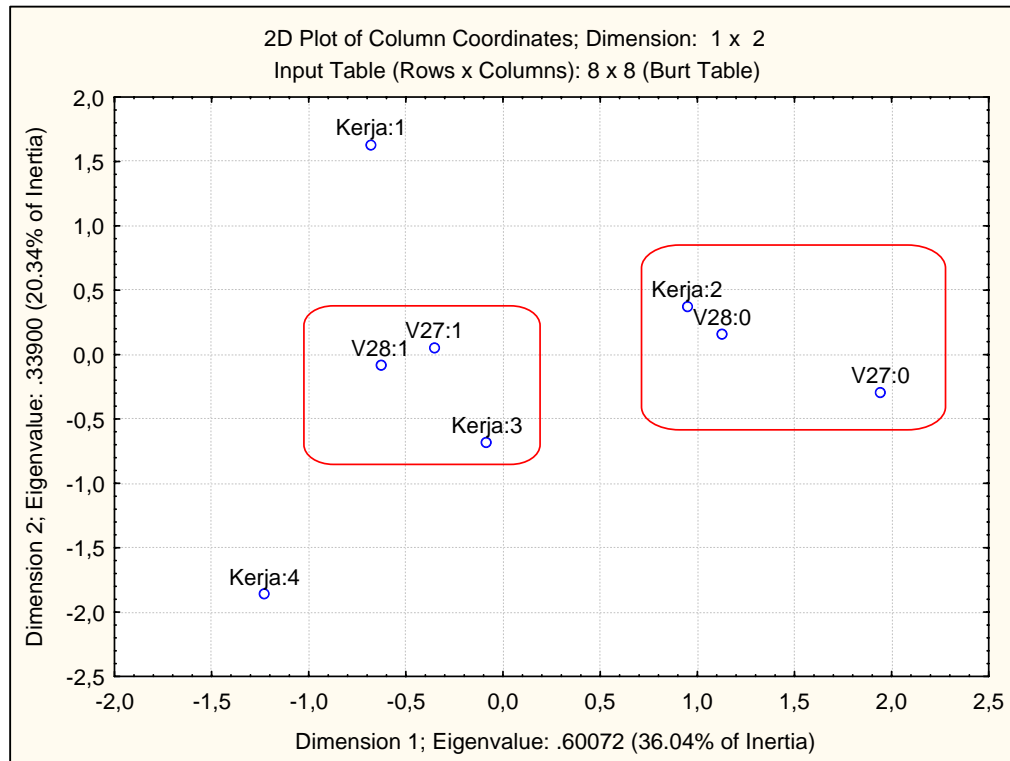
V26:1 : Population capacity to increase community economy (sufficient)

V26:0 : Population capacity to increase community economy (limited)

Figure 6. Perception of Stakeholder about Population Capacity to Increase Community Economy

The fourth question is their perception about the contribution of government institution and private industry in community economy development (figure 7). Fishermen have perception that there is a lot of contribution that has been given to them all this time. Unfortunately, base our direct observation; the aid did not develop fishermen economy activities since it was given by top down approach without consider community needs. Furthermore, it also created community dependency to their government because it was given without responsibility to repayment. It was happen because government gives the aid without applying participation approach and build capacity of community institution. But small entrepreneur has a different perception that all this time they are less given aid by government yet. It might be happen because of two possibly reason: (1) the small number of small scale entrepreneur was not seen as priority of the government, (2) government did not concern to these sector. Consequently, this sector does not develop and it should be noticed

since the small scale entrepreneur is an embryo of industrial people. If the people do not have entrepreneurship, they would live in poverty forever.



Remark:

Kerja1 : Government officer

Kerja2 : Small entrepreneur

Kerja3 : Fishermen

Kerja4 : PPMK Facilitator

V27:1 : Increasing of local community capacity by the government (exist)

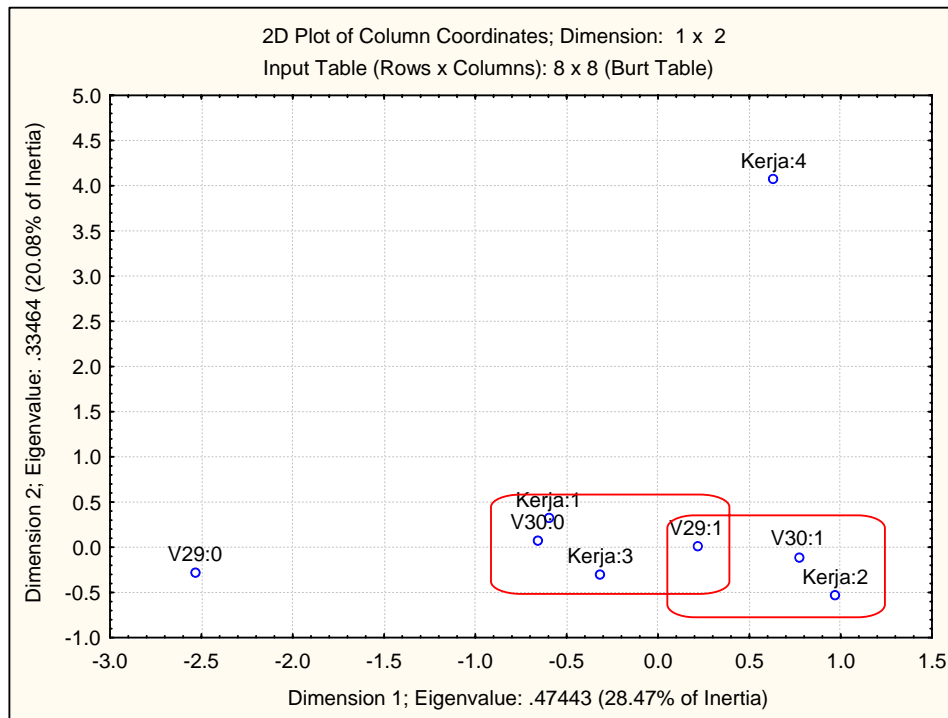
V27:0 : Increasing of local community capacity by the government (no exist)

V28:1 : Increasing of local community capacity by private company (exist)

V28:0 : Increasing of local community capacity by private company (no exist)

Figure 7. Perception of Stakeholder about Increasing of local community capacity by the government and Private Community

The fifth is this perception about information and technology accessibility (figure 8). All stakeholders say that they could access information easily. It is because the close distance with Jakarta as information center. But mostly the information is useless since it does not cover specific information about fishing economic activities. So information about market, production and prices is still limited. According to technology accessibility, government and fishermen have perception that it difficult to access. Consequently, they still use traditional way and equipment to catch fish. In the contrary, small scale entrepreneur has perception that technology is easy to access. It is because they just use low and simple technology for making product.



Remark:

Kerja1 : Government officer

Kerja2 : Small entrepreneur

Kerja3 : Fishermen

Kerja4 : PPMK Facilitator

V29:1 : Accessibility to information (yes)

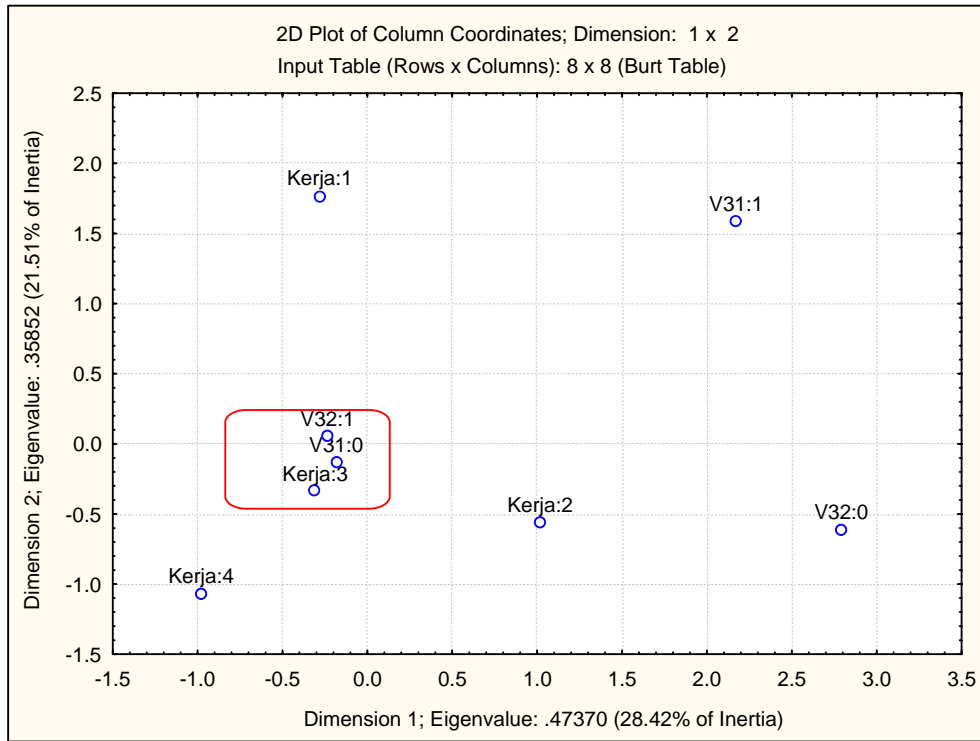
V29:0 : Accessibility to information (no)

V30:1 : Accessibility to technology (yes)

V30:0 : Accessibility to technology (no)

Figure 8. Perception of Stakeholder about Accesibility to Information and Technology

The sixth is the perception about job opportunities and unemployment (figure 9). Fishermen are the only one who has perception that there are no sufficient job opportunities for them. They also say that there are more people become unemployment because the depletion of fish resources. It implies that government should prevent unemployment increasing by facilitate the development of alternative economic activity, protect fishermen from monopoly market and fish resource rehabilitation.

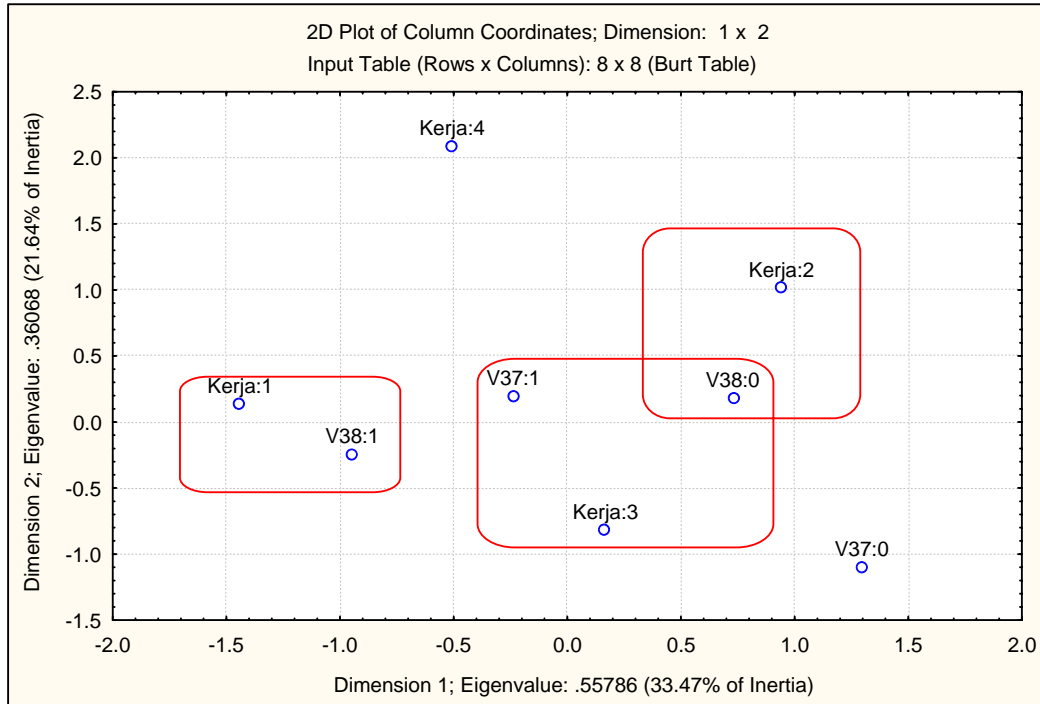


Remark:

- | | |
|-----------------------------|--------------------------------------|
| Kerja1 : Government officer | V31:1 : Job opportunities (exist) |
| Kerja2 : Small entrepreneur | V31:0 : Job opportunities (no exist) |
| Kerja3 : Fishermen | V32:1 : Unemployment (exist) |
| Kerja4 : PPMK Facilitator | V32:0 : Unemployment (no exist) |

Figure 9. Perception of Stakeholder about Job Opportunities and Unemployment in Kepulauan Seribu

The seventh is perception about the contribution of informal institution such as religion group, fishermen group, etc (figure 10). Fishermen believe that such institution could facilitate their economic activity and reach community prosperity. But, government has an opposite perception that it is impossible to happen. Because of these different perceptions, there are potential conflicts that inhibit development process. It is not easy to change government mindset from authority owner to public servant.

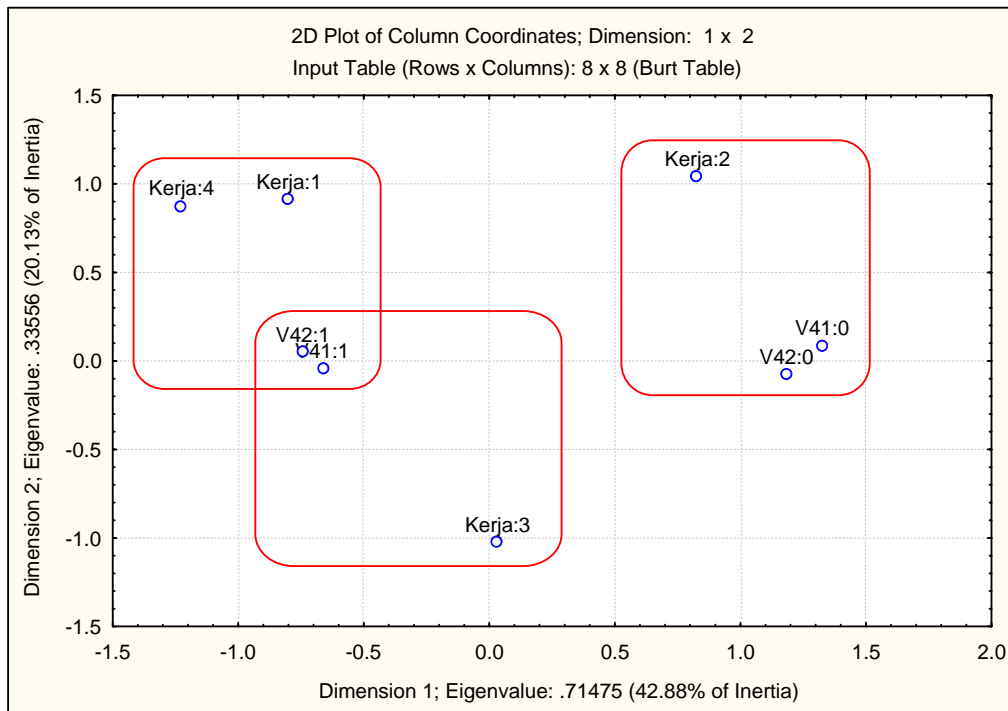


Remark:

Kerja1 : Government officer	V37:1 : Positive contribution of informal institution (exist)
Kerja2 : Small entrepreneur	V37:0 : Positive contribution of informal institution (no exist)
Kerja3 : Fishermen	V38:1 : Negative contribution of informal institution (exist)
Kerja4 : PPMK Facilitator	V38:0 : Negative contribution of informal institution (no exist)

Figure 10. Perception of Stakeholder about Contribution of Informal Institution in Kepulauan Seribu

The eighth is perception about the contribution of norms to the community economy activity (figure 11). All stakeholders, except small scale entrepreneur have perception that community development activity could be build by using norms. Base on our observation, population in Kepulauan Seribu still use norms as an informal rule of the game in community live.



Remark:

Kerja1 : Government officer

Kerja2 : Small entrepreneur

Kerja3 : Fishermen

Kerja4 : PPMK Facilitator

V41:1 : Norm influence to the community economy activity (exist)

V41:0 : Norm influence to the community economy activity (no exist)

V42:1 : Traditional rule influence to the community economy activity (exist)

V42:0 : Traditional rule influence to the community economy activity (no exist)

Figure 11. Perception of Stakeholder about Contribution of Norm and Traditional Rule in Kepulauan Seribu

3. Result from identifying and analyzing existing condition base on community aspiration in each village

Base on focus group discussion in six villages at Kepulauan Seribu, there are some important issues that became serious problems for the community as follows:

1. The depletion of fish resources
2. Degradation of sea because of bomb, poison and excessive pollutant
3. Low price of fish
4. Limited and expensive gasoline for boat and electricity fuel
5. Limited access to financial capital
6. Limited access to technology
7. Monopoly market by some traders

According to those issues, it could be resumed that there are two main problems which are connected each other. The first one is environment and natural resources degradation, and the second one is limited community prosperity. These two problems must be solved simultaneously if we want to increase community prosperity and save the environment and natural resources.

4. Result identifying and analyzing appropriate development program for short and long period of time, especially to enhance community economy

We have already discuss the existing problems in Kepulauan Seribu that are connected each other. Geographic condition of small islands gives significant influent to the community live characteristic. On the other way, community live determine the quality of environment and natural resources.

New local government policy that prohibit fisherman to use bomb and poison does not work since fishermen really need a lot of fish just for limited income. In addition, the aid from government is useless because it was not suit with community necessary. Finally, it stimulates potential conflict between government and their own community. Government says they already spend a lot of budget to develop community economy but it does not success because of community mistaken. In the other side, community says they become more suffer because of government policy.

Actually, it is happen because government not tries to understand that all the problems are connected each other. Therefore, partially development program fail to solve the problem. Because of that, considering all problems comprehensively in the formulation of problem solver is much better. We think required condition to solve existing problem is increasing community prosperity through community economy institution. That thought is based on several reasons as follows:

1. Community economy institution could increase economic of scale and economic of scope of community economy activities, therefore it could increase efficiency and benefit.
2. Community economy institution could increase bargaining power of fishermen to face the trader, accordingly it could give better prices for the fish
3. Increasing of efficiency, benefit, and fish prices, could reduce fish resource exploitation and rehabilitate the capacity of environment and natural resources
4. Community economy institution could create network with other institution so access to the market and technology become possible

5. Community economy institution could develop some business activities that could maximize their local potency and increase people participation such as ecotourism, cultural tourism, sea education, etc.

But surely, it could not be built if there is no sufficient infrastructure. Base on above result, there are four important infrastructures that become constraint to development of community economy institution. The first is accessibility to the financial capital. Lack of financial capital has inhibited opportunities for community to develop their economic activities. All this time they only could access financial capital from traders. Unfortunately the interest is too high so they difficult to return. Then, accumulated debt makes people become poorer than before.

The second is accessibility to the technology. All this time catching fish technology in Kepulauan Seribu is still limited. Additionally, limited technology also cause processing industry does not develop. Technology is needed to increase efficiency in using of natural resources. It could reduce fish exploitation since the value added from fish increase because of processing technology. Surely, people could use technology if they have sufficient capacity. Therefore, education aspect becomes important to increase skill, creativity, knowledge and work ethics.

The third is provision of information and transportation infrastructure. These two infrastructures could enhance community interaction among islands intra region and with other region. Community interaction among islands could empower community economy institution since it could increase economic of scale and economic of scope of economic activities. Besides, it reduce monopoly power belong some traders and give opportunities to develop competitive market.

The fourth is provision of energy including gasoline, gas and electricity. It becomes one of important problems because energy supply in Kepulauan Seribu very depends on gasoline. Since the increasing of gasoline prices by government of Indonesia, fishermen are more difficult to reach enough income. Besides, limited and expensive gasoline has reducing electricity capacity. As the result, other economic activity such as processing industry does not develop. Actually, Kepulauan Seribu has a lot of kind potential energy resources such as wind, sea waves, etc. Unfortunately, it is not used until now.

Base on those necessities, we discuss with related stakeholder and then formulate appropriate development program for short and middle period of time to enhance community economy and save environment and natural resources. The program could be seen as follows (Table 10):

Table 10. Short and Middle Development Program Base on Existing Problems

EXISTING PROBLEMS	SHORT PERIOD DEVELOPMENT PROGRAMS (5 YEAR)	LONG PERIOD DEVELOPMENT PROGRAMS (15 YEAR)
<p>Physical Aspect:</p> <ul style="list-style-type: none"> ▪ Small scattered islands ▪ Environment and natural resource degradation ▪ Lack of infrastructure ▪ Lack of energy (electricity and gasoline) ▪ Lack of clean water and sanitation 	<ol style="list-style-type: none"> 1. Development of transportation and communication infrastructure 2. Development of alternative energy resources 3. Environment and natural resource rehabilitation 4. Arrangement of housing region along the beach 	<ol style="list-style-type: none"> 1. Utilizing of transportation and communication infrastructure 2. Utilizing of alternative energy resources 3. Environment and natural resource conservation 4. Arrangement of housing region in the island
<p>Economy aspect:</p> <ul style="list-style-type: none"> ▪ Typically depend on catching fish product ▪ Low technology of catching fish ▪ The quantity of catching fish depend on weather condition ▪ Limited development of processing industry ▪ Market and fish price are determined by some traders ▪ Low income ▪ Community do not know how to arrange sea and cultural tourism 	<ol style="list-style-type: none"> 1. Development of local community economy institution 2. Development of financial access 3. Development of small scale industry base on fish product as an input 4. Development of fish culture 5. Development of sea and cultural tourism base on community management 	<ol style="list-style-type: none"> 1. Development of professional community economy enterprise 2. Development of professional local financial institution 3. Development of processing industry 4. Development quantity of fish product from fish culture 5. Development competitiveness sea and cultural tourism in Kepulauan Seribu
<p>Social and institution aspect:</p> <ul style="list-style-type: none"> ▪ Limited community participation in development ▪ Good relationship among ethnics ▪ Religion institution has significant influence ▪ Lack of community economy institution development ▪ Lack of Law enforcement ▪ Lack of good governance 	<ol style="list-style-type: none"> 1. Increasing community participation in development 2. Utilizing religion institution to stimulate community economy institution 3. Enhance law enforcement 4. Increase transparency, accountability, and public servant. 	<ol style="list-style-type: none"> 1. Make use of participatory planning and development 2. Development of trusted community economic institution 3. Implement law enforcement 4. Implement good governance
<p>Human Capacity Aspect:</p> <ul style="list-style-type: none"> ▪ Lack of education ▪ Lack of skill ▪ Lack of marketing and management capacity ▪ Lack of ethics and competency 	<ol style="list-style-type: none"> 1. Development skilled people in fish culture, production technology, management and marketing 2. Development curriculum of environment and natural resources management 3. Small scale industry empowerment 	<ol style="list-style-type: none"> 1. Increase investment that need skilled people 2. Development leadership and entrepreneurship 3. Development of professional small scale industry

5. Evaluation Result of Community Economy Institution that has been formed Under Our Facilitation.

Base on above logical framework, we have been facilitating community economy institution building which is named LETS (Lembaga Ekonomi Tidung Sejahtera). The process starts at October 2003 when Sea and Fisheries Department of Republic of Indonesia (DKP) has a program called PPMP (Coastal Community Empowerment). They give some fund with the target to empower coastal community economy in Kepulauan Seribu. Unfortunately, they still don't understand how to reach the target by using this fund since many similar programs in other region has failed. Therefore, we propose our idea to develop community economy institution.

Base on Tidung Island community meeting, LETS was formed at 10 October 2003. LETS is a community enterprise belong to people of Tidung Island. They decide together the vision, mission, goals and rule of the game of the institution. One of the main goals in the short term, they want this institution could manage many kinds of fund and community development programs from government or other institution. It is because most of fund and development programs are useless since it did not suit with community necessary. Furthermore, the other main goal in the long term is this institution could develop a lot of community business activities in the future.

In that discussion, they realize that right now they do not have capacity yet to use fund to develop some business activities. Therefore, in the early step of LETS, they use the fund for develop financial services institution. By arrange rule of the game together, they agree that every lender must return the money and if they don't do it, the manager could give a punishment. It was a good agreement, because all this time they usually do not return the fund from government or other institution. They thought the money is a gift, not a loan. Therefore many credit from government do not return and fail to increase community development. In some cases, the fund from government has stimulated conflict between people who get fund and who did not.

After one a half years, work performance of LETS give an interesting picture. As financial services institution, financial capital of LETS has developed starting from Rp.871.400.000 become Rp.1.024.750.000. Although there are some members do not return their credit yet, but punishment mechanism is working and give significant force to the bad lender. The punishment is given in term of moral punishment. The bad lender would be ashamed if they do not pay their debt.

Unfortunately, in the same time LETS has stimulated conflict. Some members feel that the distribution of credit is unfair since it is only given to certain person. But the manager says that they have responsibility to manage the money, so they must channel the credit carefully. It is interesting phenomena because they learn to manage their problem by them selves.

However, the conflict make the previous plan to develop some community business has failed. They realize that develop institution is not easy. Managing financial services as one of business activity actually need a lot of effort. Therefore, they recognize that they need sufficient skill and capacity to develop other community business.

Beyond that conflict, LETS has give an alternative financial access to the community. So they could increase their bargaining power to the traders. In some cases, it could increase the prosperity of some people as member of the community. They are not depending on traders anymore. Surely, it could not see as significant result yet, since the age of LETS still one a half year.

Because the community economy institution do not working well yet, so the impact to the environment and natural resources rehabilitation is not significant enough. But, in the last yearly LETS members meeting, consciousness to conserve and rehabilitate environment and natural resource is growing. When they could escape from the traders the people could think more freely and wisely. They feel could take over the control on environment and natural resources, so they have sufficient motive to conserve it for their better future. In the last meeting they conclude there are three important aspects to attain better community prosperity. These three aspects are: (1) better environment and natural resources condition, (2) better economic activities performance, and (2) better social capital.

Since we facilitate and evaluate that process, we believe that community economy could give positive impact to the environment and natural resources management. According to Rose, 2002, the characteristic of community, social-economic activity, and environment and natural resource in Kepulauan Seribu are suit with his thinking about the advantage of community base management regime in managing environment sustainability. He says the comparing characteristic and advantage between Tradable Environmental Allowances (TEA) and Community-Based Management Regimes (CBMR) are:

Table 11. Characteristic and advantage of Tradable Environmental Allowances (TEA) and Community-Based Management Regimes (CBMR)

	TEA	CBMR
Scale	Larger	Smaller (unless “nested” or coordinated)
Resource complexity	Simple, single focus	Complex, interactive
Practices encourage	Security of investment, innovation	Adaptation, long term stability and risk sharing
Social structure	Loose, stranger relations	Close knit
Adaptation to shifts in natural environment	Less adaptive	More adaptive
Adaptation to shift human in human demand	More adaptive	Less adaptive
Typical resource application	Pollution (putting in)	Extraction (taking out)
Relation to commerce	Accommodates commerce	Vulnerable to commerce

However, there are still limited stakeholders who understand about it. Like in Kepulauan Seribu, there is unclear and overlapping authority in managing environment and natural resources. There are three existing stakeholder as follows: government, private sector (market mechanism), and community. Because community usually have less bargaining power, so the other two has determine the management of environment and natural resources. As the result, sustainable environment and natural resource management in Kepulauan Seribu is difficult to attain since it ignore community participation and local specific resource characteristic. Ignoring community participation by local government has put the resources in open access situation and domination of traders in monopoly market mechanism has push resource exploitation.

Unfortunately, when we analyze LETS performance, there are some aspects that must be noticed if we want to make successful community economy institution. Those aspects are:

1. Leadership
2. Participation
3. Rule of the game

They are connected each other, so it must develop simultaneously. Leadership is important to give a right direction to the institution development. Participation is important to create trust building among members of the institution. Rule of the game is important to keep the agreement and make the institution sustainable.

Furthermore, the form of community economy should has some unique characteristic such as the business must be specific, focus, and it could create network system among

groups that have small members. Specific and focus are important to develop quality of product and services. With limited capacity, a good quality would be attained if they could focus in specific product. Furthermore, groups with small members are important because community economy institution is build base on trust, so trust building would be easier when its members are small. Then, each small groups would be connected each other as a network.

CONCLUSION

Base on above discuss, there are several conclusion that could formulate as follows:

1. The provision of infrastructure in Kepulauan Seribu becomes expensive and inefficient due to the scattered small communities caused by the scattered small islands
2. Lack of infrastructure cause competitive market does not work and replaced by monopoly market controlled by some traders from outside islands who could pay information and transportation cost
3. The traders usually use their monopoly power to pressure community for getting enough income by exploiting their resources. As the result, resource exploitation by using bomb and poison become arise since lack of infrastructure in this region cause difficulties for implementing law enforcement.
4. Community empowerment could reduce resource exploitation and increase their consciousness and capacity to reach sustainability use of environment and natural resources
5. Government policy that ignore community participation would not give appropriate impact and create some other problem such as inefficient use of public fund and conflict among stakeholders.
6. Environment and natural resources depletion and community poverty could be reduces simultaneously by : (1) forming community economy institution, (2) increasing financial access, (3) increasing capacity on using technology, (4) increasing infrastructure especially for information and transportation, (5) increasing energy supply to support economy activities
7. There are three aspects that must be considered to make successful community economy institution such as: (1) Leadership, (2) Participation, and (3) Rule of the game

8. The form of community economy institution has some unique characteristic such as: the business must be specific, focus, and create network system among groups that have small members.

References

- Anonim. 2003. Kepulauan Seribu Regency by Numbers. Central Statistic Bureau of Republic of Indonesia. Jakarta.
- Anwar, Affendi. 2003. An Analysis of Agriculture Contract System in Rural Area. Post Graduate Program of Rural Planning and Development. IPB. Bogor.
- Anwar, Affendi. 2004. Rural Organization System. Post Graduate Program of Rural Planning and Development. IPB. Bogor.
- Anwar, Affendi. 2005. Unbalanced Rural and Regional Development. P4W Press. Bogor.
- Rose, Carol M. 2002. Common Property, Regulatory Property, and Environmental Protection: Comparing Community-Based Management to Tradable Environmental Allowances. Chapter in Books: The Drama of the Commons. National Academy Press. Washington DC.

