

Community Empowerment through the Utilization of the Post- Mining Voids in Kutai Kartanegara Regency and Samarinda Municipality – East Kalimantan Province, Indonesia

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Abstract. The aim of this research was to analyze and describe: 1) The types of community empowerment through the utilization of the post-mining voids 2) Reasons and aspirations of the residents to utilize the voids; and 3) Impacts on the increase of the residents' income. The research findings indicated that: 1) the types of community empowerment included: fish cage, farming business, fish ponds, agricultural irrigation, flood control as well as fulfilling the water supplies for public bathing, washing facilities and latrines purposes. Empowerment through fish cages and agriculture business opportunities revealed significant development with the many residents involved in such business. 2) Most of the residents aspired to utilize the post-mining voids due to the unemployment and the lack of water supplies during the dry season 3) Business of fish cages and farming activity have a significant impact on their income. Meanwhile, the empowerment efforts done by the local Governments were considered as good. However, the empowerment which might have led to being autonomous was yet to be achieved

Keywords: Community Empowerment, Voids

1. Introduction

Open coal mining activities will create relatively deep and wide pits. One of the impacts from the closure of mining activities would be the possible formation of remaining excavation pits that cannot be reclaimed into the initial condition due to the overburden deficits. The leftovers of such post-mining pits will eventually become runoff and rainwater storage or in other words, they will turn into a kind of artificial lakes.

Therefore, sooner or later, the abandoned voids might create a negative impact because they have altered the landscapes or ecosystems from their initial conditions. Nevertheless, the voids might also bring about a positive impact if they are utilized positively, for instance as the fish cage, farming business, rice field irrigation and so on.

The condition of the ex-mine pit that has not been reclaimed by some mining companies for many years in a number of villages in Kutai Kartanegara Regency as well as Samarinda Municipality has also provided an opportunity for the residents to utilize the ex-mine pits for various business attempts. This happens due to the economic conditions of the people as well as the natural condition of the villages. The more difficult economic situations faced by the residents and the increasing number of unemployment have caused some residents to try to

make use of the post-mining pits by doing various business attempts including fish cages, fish ponds and so on. In addition, the natural conditions of the village with difficulties in finding water springs have turned those voids into agricultural irrigation and water supplies for the residents' bathing, washing and latrines purposes. Therefore, seeing these conditions, both the governments of Kutai Kartanegara Regency and Samarinda Municipality, through the local village governments, have tried to empower residents in utilizing the voids by providing physical and non-physical assistance, in the forms of building dikes, repairing and cementing ditches, training assistance as well as providing feeds, seeds, feed makers and so on.

Community empowerment by utilizing the post-mining voids in the forms of fish cage activities, fish ponds, irrigation, water tourism and other economic-related activities is expected to open up more employment opportunities, reduce the unemployment rate as well as increase the residents' income. The empowerment of villager community would be an effort to promote their autonomy and welfare by improving their knowledge, attitudes, skills, behaviors, capabilities, awareness, as well as utilize the resources through the policy making, programs, activities and relevant assistance in accordance with the core problems and the priorities of the villagers' needs.

Moreover, the community empowerment aims at enabling the village to take a common action in unity which involves all parties of interests at the village government level, village community members and also other relevant parties. This is done in order to promote the participation and make use of the capability of the community members in the process of developing their village, formulating the development plan which will benefit the underprivileged groups as well as improving the capacities and qualities of the human resources in the village.

The approach done in the village community empowerment is participatory by making the villagers the subjects of development, utilizing the existing resources and local wisdom. The governmental programs to improve the village economy, which include the empowerment of farmer groups, fish cage farmers as well as other community economic supports, would be the forms of empowerment for the underprivileged residents into autonomous ones. However, the question remains whether with such efforts done by the government the local residents have been empowered and independent. Taking into account this existing condition, the researchers were interested in investigating in an in-depth way the community empowerment in relation to the utilization of post-mining voids. The aim of this research was to analyze and describe: the types of empowerment and the impact on the increase of income and to describe the residents' aspirations and reasons for utilizing the post-mining voids from the social aspect

2. Method

The design of this study was descriptive, by employing descriptive quantitative analysis method. According to Sugiyono (2000:2), descriptive study is a study done on an independent variable, i.e. without comparing or correlating with other variables. This research was conducted with residents who resided in the surroundings of the post-mining areas in Kutai Kartanegara Regency (Bukit Raya and Karang Tunggal Villages) and Samarinda Municipality (Loa Bahu and Jongkang Villages) with a total number of 5 post-mining voids. The data collection techniques employed in this research were direct Field Observation, Questionnaire distribution Interview and FGD (Focus Group Discussion). The sample in this study was all residents living in the surroundings of the post-mining voids. The data analysis technique used in this research was descriptive statistics analysis, by describing or displaying data in the forms of percentage table through the frequency distribution table. The frequency distribution

table only involves one variable, i.e. one or the number of respondents distributed to the attributes of each variable.

3. Result

3.1 Types of Community Empowerment in Utilizing the Voids

3.1.1. Farming Activity

The Utilizing of remaining voids as irrigation for farm are done by Bukit Raya villagers to the TD C9 Void that irrigates the farms in the neighborhood area numbers : 19, 1, 10, 11, 12, 13 dan 14 and Void TD North (C4 & C5) is used to irrigates the farm in the neighborhood area numbers : 8, 9 , 18, 15, 14, 13 dan 12 and several other the neighborhood area through water channels. The total of farmers is 532 people with 630 ha of farms and 18 farmer groups.

On the other hand, In the area of Karang Tunggal Village, there were only 1 (one) post-mining void namely Void TD North ext (C4 & C5). Void TD North ext (C4 & C5) had been used by the villgers of Karang Tunggal for rice field irrigation purposes. The areas covered the Neighborhood Number 3 and 4, with the approximate width of 100 ha and the total number of 90 farmers.

Table 1: The Number of farmers and area of agricultural land

No	Village	The Number of Farmers	Area of agricultural land
1	Bukit Raya TD C9 and TD NORTH (C4 & C5)	532	630 ha
2	Karang Tunggal TD NORTH EXT(C4 & C5)	90	100 ha

Source: FGD, 2018

Government assistance from the Kutai Kartanegara Regency has been carried out such as the construction of dikes, the irrigation channel repair, seedlings and fertilizer aid and guidance assistance as a form of Community Empowerment. However, both the residents of Bukit Raya and Karang Tunggal in dealing with several problems such as broken irrigation channels and damaged water pumps. Residents still expect help from the government or mining companies

3.1.2. Bussiness of Fish Cages and Fish Ponds

In the surrounding area of Bukit Raya village, there were 2 (two) post-mining voids, namely Void TD C9 and TD North (C4 & C5). These voids had been utilized by the local residents. Void TD C9 had been utilized by the locals for rice field irrigations. Furthermore, Void TD C9 had also been utilized by the local residents for fish pond business. There were three people who used Void TD C9 for their fish ponds, breeding various types of fish such as Nile tilapia, Pangasius, Carp, Catfish and Koi goldfish. While, Void TD North (C4 & C5) had been used for fish cage business by 7 farmers, with the total number of 195 fish cages, sized approximately 3 m x 3 m and 2.5 m x 3 m. These cages were used to breed Nile tilapia, Pangasius and Gouramies.

In the area of Karang Tunggal Village, there were only 1 (one) post-mining void, namely Void TD North ext (C4 & C5). Void TD North ext (C4 & C5) had been utilized by three villagers of Karang Tunggal for fish cage business with the total number of 21 cages, sized 3 x 3 m. These farmers bred Nile tilapia, Pangasius and Gouramies. The fish were bred both for seedings and for sale. Meanwhile, in Jongkang area, there were 3 (three) post-mining voids, namely Void UDC, Void Senong and Void Pit Jongkang. Void Pit Jongkang had been utilized

by the villagers of Jongkang, Loa Bahu and Loa Ipuh. This particular void had been utilized by as many as twenty villagers of the three villages for fish cage business, with 5 farmers from Jongkang, 5 farmers from Loa Bahu and 10 farmers from Loa Ipuh. There were 234 fish cages. The sizes of the cage were approximately 3 m x 3 m, and 2.5 m x 3 m. These farmers bred such fish as Nile tilapia, Carps, Pangasius and Gouramies. The fish were bred both for seedings and for sale. The sale distribution covered the areas of Tenggarong and Samarinda, where there was a direct trading with the buyers or sold to the nearest middle men

In the Gold Star area in Loa bahu village, there were only 3 (three) post-mining voids, namely Bendang, Gold star A6/A7 and Panorama. Out of these three voids, only Void Gold star A6/A7 was utilized by the local residents. This void Gold star A6/A7 was utilized by the residents of Loa Bahu, Samarinda Municipality and Tenggarong Seberang for fish cage business. There were 24 farmers, divided into two groups namely Rawa Bening I and Rawa Bening II.

In the area of Galaxy Bendang, there were two voids, namely Void CD2 A5 and Void Galaxy Bendang Ph 6/7/8. These voids belonged to Loa Bahu village. However, from these two voids, only Void Galaxy Bendang Ph 6/7/8 which had been utilized by the local residents. There were two owners of fish cage business with 153 cages. The specifications of the cage were different, with the sizes of 4 m x 4 m and 8 m x 8 m.

Table 2 : The Number of Fish Cage Farmers and Cage Ownerships

No	Village / Voids	Owner	Number of Cage
1	Bukit Raya (TD C9 and TD North (C4 & C5)	7	195
2	Karang Tunggal (TD North Ext(C4 & C5)	3	21
3	Jongkang (Pit Jongkang)	20	243
4	Loa Bahu (Gold Star)	24	457
5	Loa bahu (Gb Ph 6/7/811)	2	153

Source : FGD, 2018

The support from local government is so little and so with the assistance for the fish farmers of Gold Star, Loh Bahu village. From the interview with informans and field observation, almost all covered area (desa loa bahu, jongkang, Bukit raya dan Karang Tunggal) have received the assistance but the vallagers still feel it is not enough. For that reason, the fish farmers from Loa Bahu (void GB 6/7/8), Jongkang (Fit Jongkang), Bukit Raya Void TD C9 and TD North (C4 & C5) and Karang Tunggal TD North Ext (C4 & C5) choose to learn from themselves and from google, except from the farmers of Gold Star area (Loa Bahu) visited regularly by the local government staff and also received assistance in the form of fish seed, fish food, road etc.

All of the study areas (Villages of Loa Bahu, Jongkang, Bukit raya and Karang Tunggal) had obtained the supports in the forms of extension in fisheries. However, the fish cage farmers still felt that it was lacking. Therefore, the fish cage farmers in the villages of Loa bahu (void GB 6/7/8), Jongkang (Fit Jongkang), Bukit raya (Void TD C9 and TD North C4 & C5) as well as Karang Tunggal TD North Ext (C4 & C5) learned more from their friends and google, except for the gold star fish cage farmers (Loa bahu village) who were frequently visited by the relevant officials of Samarinda Municipality for the assistance and extension purposes. Moreover, they had also obtained some supports in the forms of seeds, feeds, road repairs, feed makers and prayer rooms (*mushola*). Meanwhile, Bukit Raya and Karang Tunggal areas had obtained the governmental supports in the forms of dikes and irrigation ditch constructions. Yet, the fish cage farmers in the Villages of Jongkang (Fit Jongkang), and

Loa Bahu (void GB 6/7/8) had not received any physical supports, except for the extension program which seemed to be very minimum as well.

3.2 The water of Voids is used as daily Water requirement

In addition to being used for irrigation and fish ponds, the water of Voids was also utilized by some of the local residents for bathing, washing and latrines purposes. This was due to the limited access for public water and the water shortage during the dry season.

3.3 Impacts on the Increase of Local Residents' Income

Business opportunities gave further positive impact in the forms of the increase of local residents' income. For the villagers of Bukit Raya, from the utilization of Void TD North (C4 & C5) and TD C9, there were approximately 532 farmers. Based on the obtained information, 1 ha of rice field could produce \pm 5 tonnes of dried unhulled rice or \pm 3 tonnes of rice. Currently, the price of 1 kg of rice is IDR10,000. Suppose there were 1 ton of rice (1000 kg), it would be equivalent to approximately IDR 10, 000,000,- Thus, if there were 630 ha which utilized the void water, it would produce 630 ha x 3 tonnes of rice, resulting in 1,890 tonnes of rice. This would be equal to IDR 18.9 billion in one harvest (two times of harvest in one year). On average, the ownerships of rice fields in Bukit Raya village covered the areas from 1 ha to 2.5 ha. Therefore, if a villager owns a 1 ha field which could produce 3 tonnes rice with the price per 1 kg of IDR 10,000, it would generate income as much as IDR. 30,000,000 for one time harvest. If the farmer owns a 2.5 ha field, the amount of income generated would approximately be IDR 75,000,000 for one harvest time.

Moreover, for the fish cage business, mostly the villagers bred such fish as Nile tilapia, Carps, Pangasius, Catfish and Gouramies. Since the predominantly bred fish was Nile tilapia, the income level for this particular fish cage business could be taken as a sample, as follows: according to the information given, the harvest production would highly depend on the fish seeds and fish feeding. If the seeds to breed were of the super quality (normally bought in the areas of Loa Kulu or in Bogor) with the price of IDR 250 – 350 /fish (seed), then bred as many as 1000, the capital needed would amount to IDR 350,000. If these 1000 fish seeds were put inside the fish cage and fed twice a day with the protein content above 30/kg, in less than 4 months the first batch of Tilapia fish could be harvested. The Tilapia fish harvest would proceed in three stages. Stage I occurred in the first 4 months with \pm 300 fish, estimatedly 1 kg = 3-4 Bogor super quality fish seeds (4-5 seeds for 1 kg of Loa Kulu super quality). Therefore, one cage would produce around 100 kg from the Bogor super quality seeds. If the price of 1 kg Tilapia fish was IDR 35,000, the amount of money generated would be equal to IDR 3,500,000,-. Generally, if the treatment was done properly, out of 1000 Tilapia fish, \pm 900 could be harvested whereas \pm 100 would certainly die. However, if the treatment was not properly done, it would be possible to harvest only \pm 500 fish.

From 1000 Tilapia fish seeds, the harvesting process would normally be done in 3 stages, in which the first 4 months produced \pm 300 fish, then in Stage 2 around 5 months \pm 300 fish and the rest 300 fish would be harvested in the next 6 months. Thus, in the first 4 month harvest time, the size of the fish would be sorted out. 5 months afterwards, it would be sorted out again; hence for 1000 fish seeds, 2 cages to sort the fish out would be necessary. Since there would be three harvest times for 1000 Tilapia fish in a period of 6 months, the income level of the fish cage farmers could be calculated as follows: 3x harvest X IDR 3,500,000,- = \pm IDR 10,500,000/6 months.

For 1000 Tilapia fish seeds, 7 sacks of fish feeds would be needed, with a price of IDR 315,000/ sack, hence 7 sacks x IDR 315,000/ sack resulted in the amount of ± IDR 2,205,000,- for a period of 6 months. Therefore, if the gross revenue was ± IDR 10,500,000 /6 months – the feed expense was ± IDR 2,205,000,- the obtained net revenue would be around ± IDR 8,295,000.-/6 months or around ± IDR 1,382,500.-/month (excluding the cost of medications, net repairment, etc). Moreover, when calculated generally, for the fish cage farmers in Bukit Raya Village who utilized Void TD North (C4 & C5), there were 195 cages presumably used optimally. In 6 months, there were approximately 98 cages for harvest/ production and the rest 97 cages for sorting the fish size out which would generate the net revenue amounting to around ± IDR 812,910,000.- /6 months or ± IDR 135,485,000.-/ month (excluding the cost of medications, net repairment, etc).

On the other hand, there were a total number of 90 Karang Tunggal villagers who utilized the Void TD North ext (C4 & C5) for irrigating approximately 100 ha rice fields. Based on the obtained information, 1 ha of rice fields could produce ± 5 tonnes of dried unhulled rice or ± 3 tonnes of rice. Currently, the price of 1 kg rice was IDR 10,000. Therefore, if there was 1 ton of rice (1000 kg), the amount of revenue generated would be approximately IDR 10,000,000,-. If there were 100 ha of rice fields which utilized the void water, it would produce 300 tonnes of rice (100 ha X 3 tonnes), which would be equal to the income of approximately IDR 3 Billion in one harvest time.

Moreover, according to the information gathered, the number of fish cage farmers in Karang tunggal village who utilized the void for business purposes was only 3 people. Each of them owned 8, 5 and 8 fish cages respectively, with a total number of 21 fish cages.

Because the predominantly bred fish was Nile tilapia and the harvest as well as the fish price were assumed to be similar to the Bukit Raya fish cage farmers, the income calculation of the fish cage farmers in Karang tunggal could be explained as follows. When calculated as a whole for the fish cage farmers in Karang Tunggal who utilized Void TD North ext (C4 & C5), there were 21 cages presumably used optimally. In a period of 6 months, there were 10 cages for harvest/ production and the rest 11 cages for sorting the fish size out. Consequently, the net income generated would be around ± IDR 82,950,000.-/6 months or ± IDR 13,825,000.-/ month (excluding the cost of medications, net repairment, etc).

Furthermore, for the local residents who utilized the water of Void Jongkang namely the villagers of Jongkang, Loh Ipuh dan Loa Bahu, the ownerships of fish cages included different sizes of cage, i.e. 3 m x 3 m, 2 m x 3 m and 2.5 m x 3 m. These fish cage farmers bred such fish as Nile, Carp, Pangasius and Gouramies. The number of fish cage farmers was 20 people with different number of fish cage ownerships, ranging from 8 to 40 cages (these 40 cages were owned by the middle man for breeding and growing the fish) and the total number of fish cages was 243. Considering that the predominantly bred fish was tilapia and the price was assumed to be the same as the farmers in the other areas under study, the calculation for the income of Jongkang Pit farmers could be illustrated as follows. For the fish cage farmers in Karang Tunggal Village who utilized the Void Jongkang, there were 243 cages which were assumed to be used optimally. Therefore, in a 6-month period, there were 121 cages for harvest/ production and the rest 122 cages for sorting the size out, which would generate the net income around ± IDR 1,003,695,000.-/6 months or ± IDR 167,282,500.-/ month (excluding the cost of medications, net repairment, etc).

There were 3 voids located in the Gold star area, namely Bendang, Gold star A6/A7 and Panorama. From these three voids, only Void Gold star A6/A7 had been utilized by the local residents. Void Gold star A6/A7 had been utilized primarily for fish cage business, net installation, fishing, and sanitation purposes. Moreover, for the fish cage business, there were

24 farmers who belonged to 2 groups namely Rawa Bening I and Rawa Bening II. These 24 farmers came from Bandang (RT 17) Loa bahu Village, Samarinda Municipality, Tenggara Seberang/L2, and so on. The fish cage ownership of each farmer was different, i.e. 4, 10, 20, 30 and 39 cages with the total number of 457. The sizes of the cage were normally 3 m x 2.5 m, 3 m x 3 m and 3 m X 4 m. The Gold Star A6/A7 fish cage farmers bred such fish as tilapia, Carps, Pangasius and Gouramies. Considering that the predominantly bred fish was tilapia and the harvest as well as the price would presumably be the same as the farmers in the other areas under study, the calculation for the income of Gold Star farmers could be illustrated as follows. In total, there were 457 fish cages owned by the Gold Star fish cage farmers which were assumed to be used optimally. Therefore, in 6 months, there were 228 cages for harvest/ production and the rest 229 cages for sorting the fish size out, which would generate the net income approximately ± IDR 1,891,260,000./6 months or about ± IDR 315,210,000/month (excluding the cost of medications, net repairment, etc).

There were two voids in the area of Galaxy Bendang namely void CD2 A5 and void Galaxy Bendang Ph 6/7/8. These voids were located in the area of Loa Bahu village. However, out of these two voids, only Void Galaxy Bendang Ph 6/7/8 was utilized. There were two fish cage farmers there with helpers of 3 and 2 people respectively. The total number of fish cages was 153, with each farmer owning 80 and 73 cages with different sizes of 2 m x 3m, 4 m x 4 m and 4 m x 8 m.

These fish cage farmers bred tilapia, Carps, Pangasius and Gouramies. Since the predominantly bred fish was tilapia and the harvest as well as the price would presumably be the same as the farmers in the other areas under study, the calculation for the income of Void Galaxy Bendang Ph 6/7/8 farmers could be described as follows. At the Void Galaxy Bendang Ph 6/7/8, there were 153 cages which were assumed to be utilized optimally. Therefore, in 6 months, there were around 76 cages for harvest/ production and the rest 77 cages were used to sort the fish size out. This would generate the net income of around ± IDR 630,420,000./6 months or approximately ± IDR 105,070,000/month (excluding the cost of medications, net repairment, etc).

3.4 People's Perception to the Voids

Based on the results of FGD and questionnaires concerning the local residents' aspirations towards the post-mining voids TD North (C4 & C5) and TD C9 which were located in the areas of Bukit Raya, the post-mining voids of TD North Ext (C4 & C5) which were utilized by the villagers of Karang Tunggal, the post-mining voids galaxy Bendang Ph 6/7/8/ and Gold star A6/A7 located in the area of Loa bahu as well as the Pit Jongkang Void which belonged to the Loa bahu area yet being utilized by the residents of Jongkang, Loa Bahu and Loa Ipuh, most of the local residents would like the post-mining voids to be utilized.. The following table illustrates the aspirations of local residents towards the utilization of the voids.

Table 3: The respondents' perception towards the Post-Mining Voids surrounding the Village Areas

No	Perception	Kr. Tunggal (TD North (C4 & C5)		Bukit Raya (TD North Ext (C4 & C5) dan TD C9		Jongkang (Pit Jongkang)		Loa bahu (Gold star A6/A7)		Loa bahu (galaxy Bendang Ph 6/7/8/)	
		F	%	F	%	F	F	F	%	F	%
1	Closed	0	0,00	0	0,00	0	0,00	0	0,00	0	0,00

2	Utilized	30	100,0	29	96,67	30	100,0	29	96,67	5	100,0
3	No Response	0	0,00	1	3,33	0	0,00	1	3,33	0	0,00

Source : Primary Data, 2018

From the data, it shows that for the villagers of Bukit Raya, Karang Tunggal, Loa Bahu, Jongkang, and Loa Ipuh, largely agree to utilize the voids (> 96%). Meanwhile, the voids located near the villages which had not yet been utilized were expected to be revitalized.

4. Discussion

Based on the above mentioned data, the empowerment by promoting the potentials of local residents in terms of developing knowledge, attitudes, skills and capacities of fish cage farmers and fish pond owners was not yet optimally done. Sumodiningrat (Sumodiningrat, 2000 in Ambar Teguh, 2004: 78-79) states that the empowerment process refers to a real action which is done sequentially to improve the condition of underprivileged community, in terms of *knowledge*, *attitude*, and *practice* (KAP) which would lead to the mastery of knowledge, awareness as well as good skills and capacities. The knowledge and skills-capacities owned by the fish cage farmers based on the data were mostly obtained by autonomous learning with fellow farmers and google (youtube), with an exception of the residents around the void gold star in Loa bahu village, who benefited from the assistance from the government of Samarinda Municipality. Elsiva Sadan (1997) states that “community empowerment requires : resources of its own in order to be realized. It draws these resources from two sources which must be available with a certain coordination between them:

1. Individuals who have come to recognize that they are interested in acting not only to realize their own personal desires, although still in the framework of improving their quality of life.
2. External change agent – professionals and others who are involved in a planned change process and contribute rules and resources to it – meaning, legitimation, and power— which support the creation of a community”

Related to the importance of power for the local residents being assisted, Lukes (in Anu Kasmel, 1974) argues that “The essence of the concept of empowerment is the idea of power”. According to Lukes (1974), power may occur in several levels and this clarifies the understanding of the term and also its relationship to community organization. At the level of individual, power refers to the ability to make decisions, at the organization level power involves the shared leadership and common decision making. The possibility of empowerment depends on two things – empowerment requires that power can change and expand (Czuba, 1999). Meanwhile, Cornell states that Power is defined by the Cornell Empowerment Group as the "capacity of some persons and organizations to produce intended, foreseen and unforeseen effects on others" (Cornell Empowerment Group,1989, p.2). Empowerment is a process that fosters power (that is, the capacity to implement) in people, for use in their own lives, their communities, and in their society, by acting on issues that they define as important (Czuba, 1999).

The empowerment of individual capacity by providing training was not done optimally by the respective local governments, since based on the data obtained, there were only a few of fish cage farmers who had undergone trainings, in Java and in South Kalimantan. Moreover, the assistance was not done as intensively, except for the fish cage farmers of void gold star in Loa bahu village. Developing the individual capacity is categorized by Israel as a form of psychological empowerment. Israel et al., (1994) makes the distinction between psychological, organizational and community empowerment. Whereas psychological

empowerment is concerned with individuals gaining mastery over their lives, the organizational empowerment focuses to collective capacities and community empowerment on 'the social contexts where empowerment takes place' (Wallerstein and Bernstein, 1994).

Meanwhile, the organizational empowerment had been done by the farmers together with the local government by establishing the farmer groups. In Bukit Raya village, there were 18 farmer groups whereas in Karang Tunggal village there were 5. Furthermore, for the fish cage farmers at the post-mining void Gold star, there were two farmer groups namely Bening I and II, while for the post-mining voids Fit Jongkang and Galaxy Bendang Ph 6/7/8, there had not been any. Looking at data, the organizational empowerment by improving the organizational collective activities, leaderships and collective decision making had not optimally established. Likewise, the community empowerment had not been reached properly since the data showed that the fish cage farmers had not optimally utilized the existing resources in the areas such as repairing the access to the roads.

Moreover, the empowerment process towards independence/ autonomy had not fully reached. The data indicated such problems faced by the local residents as the damaged facilities e.g. dikes, irrigation ditches in Bukit Raya village, water pumps in Karang Tunggal village as well as access to the road in Jongkang Village. Both fish cage farmers and rice field farmers still had to depend on the support or assistance of the company, in this case PT. Bukit Berduri Energi, to do the repairment. Thus, the concept of autonomous or independent empowerment among the farmers had not been well formed. Tri Winari (1998: 76) argues: the empowerment should not trap the local residents into charity, yet it should deliver the people into the autonomous process. Autonomous community is a condition where the community members feel capable of think, decide and do something which is deemed as appropriate to solve the problem by using the capacity and resources existing in their surroundings.

From the above mentioned descriptions, it could be seen that the community empowerment in four domains had not been fully reached. Bush, et al. (2002) state that: Domains consist of four components, 1) activation of the community, 2) competence of the community in solving its own problems, 3) program management skills, and 4) ability of mobilizing resources (political, social, intellectual and financial). The activation of the community is understood as community members' participation in community problem solving process, creation of community groups, leaders, and networks, and their involvement level and relationship quality. Competence of the community is defined as the knowledge and skills the community has to solve its problems, also problem-specific awareness, information dissemination skills, and communication skills within and between groups. Program management skills are understood as the ability of the community groups to use evidence-based methods in identifying and solving their problems during program development, implementation and evaluation. Mobilizing resources is defined as the ability to invest in social, intellectual, political and financial capital.

While from the data above, the local residents' aspiration to change by utilizing the post-mining voids as fish cage business, irrigation and sanitation purposes based on the questionnaire results revealed an approximate of > 80 %. This indicated the empowerment process that was initiated by the local residents was quite high, which later was supported by the respective local governments.

5. Conclusions

1. The utilization of post-mining voids were initiated by the residents living around the areas, who were encouraged by the possibilities of business opportunities, the high

level of unemployment and the lack of water resources for irrigation and sanitation purposes.

2. The utilization of these voids by the residents has opened up employment opportunities
3. The utilization of the voids has an impact on increasing people's income.
4. The empowerment concerning the fish cage/ fish pond business has not been optimized yet unlike the empowerment for rice farmers.
5. The empowerment of individual, organizational and community has not been successfully achieved because it has not led to the autonomy yet.

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