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Rural Muslim Empowerment Through the Development of Applicable Technology

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Abstract: This paper focuses on the process of empowering rural Muslim communities by improving the quality of life through appropriate renewable technology development. The research setting is Muslim community of Sokawera Village, Cilongok District, Banyumas Regency. The background of the problem is the finding of community poverty and general school dropouts, the large amount of manure waste, the lack of funds to buy fertilizer, and the imbalance between low economic capacity and ownership of abundant potential in the form of community culture raising livestock. This research is qualitative research by conducting exploration through interviews, observation and forum group discussions. Data analysis was done by searching and compiling data systematically from the interviews, observation and forum group discussions. The findings of this study were expected to be a model of empowering rural Muslims through the development of appropriate renewable technology. The model is named after the House of Empowerment. House of Empowerment is a concept of the empowerment process from the beginning to the end. In this concept, there are five processes that should be passed. The five processes should be done coherently in order to achieve the target and make it sustainable. The five processes are; 1) Mapping the subject of empowerment, 2) Coordination, 3) Expansion of Empowerment, 4) Evaluation, 5) Improvement.

Keywords: *empowerment, appropriate technology for renewable, home empowerment*

A. Introduction

Based on the Village Law (Law no. 6, 2014), Village is as a legal community unit that has territorial limits that are authorized to regulate and manage government affairs, the interests of local communities based on community practices, origin rights, and / or traditional rights recognized and respected in the system of government of the Unitary State of the Republic of Indonesia. Today the village is a popular word. This word is currently popular because nowadays, village is the subject of empowerment.

Village is currently the subject of empowerment by the Central Government, Provincial Government, District Government, Village Government, and even by the village community itself. Even highest education institutions in villages are made as sexy subjects. By higher education institutions, village is used as a place for research and community service. The existence of village as a place of empowerment and service is a big theme of this era. Especially as an effort to realize autonomous, independent and pleasant Indonesia, based on the Indonesian President's

Nawacita to build the country from the periphery (Didit Praditya, 2016). On the other hand, with the issuance of Law No. 6 of 2014 concerning Villages, villages directly have the right to regulate binding local scale areas. With ownership rights regulating a local scale area that is binding, it is expected that villages and rural communities can resolve problems independently.

This privilege is also owned by Sokawera Village. Sokawera Village is the name of one of the villages in the Cilongok sub-district. As a village, Sokawera Village has problems that arise and grow in the village. The problems are not small in number. It is not only about environmental and social issues, but also in the economic field which is one of the root problems of the village.

Some of problems encountered in Sokawera Village are problem about community poverty and the numbers of school dropouts (not completed 12 years) in general. Poverty occurs in some rural communities, most of whom are labourers and farmers. Most of them work as unskilled labourers, farmers and rice farmers. In addition, some of them have livestock as pets as well as savings if one day they need funds.

Meanwhile, about dropouts, Sunaryo said that the youth of Sokawera Village who have dropping out problems are teenagers, whose their parents have the lack of ability to pay tuition for school. As for those who are able, most are only up to the level of junior high school or equivalent. After graduating from junior high school, migrating to find work in big city becomes the culture there (Sunaryo, 2018). The problem described by the author is actually a problem that might not only occur in Sokawera Village, but also occur in other villages in Banyumas Regency.

In addition to face economic problems as described by the author, another problem that has come to Sokawera village community, especially those who work as farmers and breeders, is pollution caused by livestock manure. Imam Fachrurozi, religious leader in

Sokawera, said that livestock manure was the cause air and water pollution in the community. Pollution caused by livestock manure is found in almost all farms managed by the community there, both goat and cattle breeders.

Although there is a lot of livestock manure from cattle and goats, but the conditions of agriculture and plantations of the livestock owners are still poorly maintained due to lack of fertilizer (Imam Fachrurozi, 2018). The argument that was conveyed by the community was that they did not have the money to buy fertilizer. Sinwani explained, "... that they only buy mediocre household needs, how can they buy fertilizer" (Sinwani, 2018).

Based on the problem and description, it shows that the empowerment needs to be applied. The goal is that they will be able to get primary needs independently. Furthermore, they can be helped by their welfare through empowerment. The empowerment itself is done by utilizing the existing environmental potential to improve the quality of life of the community in Sokawera Village, Cilongok District.

B. Literature Review

1. Community Empowerment
 - a. Definition of Community Empowerment

Community empowerment is a phrase derived from English. Sukino (2013) stated that the word empowerment is a word consisting of "power" which means "control, authority, dominion". In addition, the word empowerment is a word that begins with "emp". Emp has the meaning "on put to" or "to cover with" or "more power". Thus, the word empowerment means "is passing on authority and responsibility" or becomes more empowered than before in the sense of being more empowered in authority and responsibility. So, empowerment becomes an effort or effort that is

carried out so that it has more power in the form of competency, authority and responsibility in order to improve performance in every business.

In order to interpret the concept of community empowerment, the author tried to interpret based on the notion of community empowerment expressed by the leaders. The figures are; first, stated by Munawar Noor (Munawar Noor, 2011) that empowerment is a situation that aims to strengthen the potential of certain communities through concrete steps. The concrete steps involve providing various inputs and opening up opportunities that make the community more empowered.

Second, Aprillia (Aprillia Tharesia, 2012) Community empowerment is a concept of economic development which in the process of building it always summarizes the existing social values of people who are people-centered, participatory, empowering, and sustainable. In the community empowerment application, there are at least two groups that come into direct contact, namely the community as empowered parties and those who care about empowering a community group. Third, Robbins, Chatterjee, and Canda (Mustangin, et al., 2017) stated that empowerment is a series of processes that describe the means by which individuals and groups gain power, access to resources and benefit from the life they live. Fourth, stated by Shardlow (in Adi, 2008) that the meaning of empowerment is a way for every individual, group, or community to be able to control their lives and be able to achieve the expected future.

Based on the notion of empowerment as described, empowerment means as an attempt

to change the state of an individual or group of people to be more empowered in various aspects and have increased abilities than before. The way to get to a more empowered state is to implement concrete actions as an empowerment process. That is the conclusion in interpreting empowerment based on the information above.

b. Community Empowerment Approach

The principle of empowerment has a meaning as a guideline which becomes the main reference in the implementation of community empowerment. The principle of empowerment must be held firmly so that every step of empowerment can be implemented as a whole, coherently, and on target. The principles of empowerment according to Dahana and Bhatnagar (1980) are namely:

1) Cooperation and participation

Community empowerment can be carried out as desired if participatory cooperation is built. Participatory collaboration must take place between the subject of empowerment and empowerment. If a participatory partnership between the two subjects has been created, empowerment activities can be ensured in a coherent, intact and on target.

2) Use of the right method

In conducting the empowerment process, choosing the right method which is in accordance with local culture is very important. This is because the method is a tool that is used as a medium of communication and motivation from empowering

the subject of empowerment. Therefore, in choosing method, it is very important to learn first about the local culture that develops in the subject of empowerment.

3) Interests and needs

The purpose of interests and needs as a principle of community empowerment is that community empowerment activities must be based on community priority needs. If the raise of the empowerment are the main priority or the main needs of a community group, the results to be obtained from the intended empowerment will be more efficient and effective.

4) Cultural change

This principle needs to be held for those who want to empower. The reason is because in the empowerment process, one must invite and communicate according to reason, knowing the level of knowledge possessed by the subject of empowerment. The goal is for the doctrine of empowerment to be absorbed by the subject of empowerment. Thus, every empowerer must pay attention to changes in empowerment that occur in the community as the subject of empowerment.

5) Leadership

It should be noted that empowering should not only benefit one party. Empowerment must be able to embrace all circles, both those who are loved and hated. The reason is because empowerment is to provide assistance to those in need. Not giving help to those who like it.

c. Empowerment Techniques

Strategy has meaning as steps or actions as a collection of techniques that are taken by someone to achieve the desired goals (Totok Mardikanto and Poerwako Soebianto, 2012). While the technique is a practical step carried out by the empowerment so that the planned strategy can be applied in real terms. The empowerment technique as a form of concrete steps to implement community empowerment is as stated by Suhendra (2008): First, Participatory Rural Appraisai (PRA) techniques. Participatory Rural Appraisai techniques are approaches and techniques that involve the community in the process of community empowerment.

Second, it is the technique of Assessment and Plan Participation. This technique is a way of implementing technical empowerment that goes through 4 steps of empowerment. The four steps referred to are: (a) finding problems, (b) finding potential, (c) analyzing problems and potentials, (d) choosing problem solving solutions. The third, Brainstorming technique; Brainstorming technique is a technique used to bring creativity to the subject of empowerment in solving problems or problems that are being faced. This technique becomes the manifestation of the idea by "button up" or from the bottom up so that the next step raises a sense of belonging and a sense of responsibility for empowerment that is being carried out.

d. Indicator of the Success of Community Empowerment

In a study, indicators of the success of community empowerment are needed to determine the level of

success of an empowerment that has been done to the subject of empowerment. The indicator used by the writer to find out the success rate of an empowerment is as Edi Suharso (Edi Suharso, 2005) stated that a successful community empowerment can be seen from the level of empowerment of the subject of empowerment in improving economic capacity, the ability to access welfare benefits, and cultural and political abilities.

2. Renewable Appropriate Technology

Appropriate technology is a breakthrough that is used by the Government to be able to empower all local potential within the community in order to provide added value to the intended community. In the Regulation of the Minister of Village, Development of Disadvantaged Regions and Transmigration (Regulation of the Village Minister, Development of Disadvantaged Regions and Transmigration of the Republic of Indonesia Number 23, 2017) it is stated that:

"Appropriate Technology, herein after referred to as TTG, is technology that fits the needs of the community, can answer community problems, does not damage the environment, can be utilized and maintained by the community easily, and produces added value from the economic and environmental aspects."

Looking at the definition of Appropriate Technology above, appropriate technology is a technology made by the community and according to the needs of the community in order to be a solution to the problems that occur in society. The technology must be environmentally friendly and can be made by the community at a low cost, in an easy way and can add to the economic coffers for the people around the technology

users. Therefore, appropriate technology is automatically renewable because it is in accordance with the understanding described above.

In developing tools as appropriate technology, the community environment or empowerment must make a tool that can be sustainable. In the sense that it can be sustainable, which is easy to use and improve with maximum benefits, of course. The hope, every problem that arises in the community can be helped by the solution of the intended technology. At a minimum it can ease the burden. Therefore, every technology manager is obliged to improve the quality and quantity of appropriate technology both in the form of design, function and benefits of the appropriate technology (Regulation of the Regent of Kuningan Number 20, 2011).

It is hoped that the application of appropriate renewable technology can increase the creativity of the community to develop more efficient and effective technologies at the same time. Technology development that is more efficient and effective at the same time is the result of appropriate technology engineering that is integrated with the development of community innovation. Engineering and innovation are obtained through continuous assessment, so that alternative technology as a solution to the problems of society that is of economic value is always born. That is an outline of the renewable technology that the authors adopted in this work.

C. Methodology

The type of this research is qualitative research by taking the research location in Sokawera Village, Cilongok District, Banyumas Regency. Determination of information is done by purposive sampling. The purpose of this study is to describe the process of empowering rural Muslim communities by improving the quality of life through the development of

appropriate technologies for renewable. The researcher explored data through interviews, observation and forum group discussions. Data analysis is done by searching and compiling data systematically from the results of interviews, observation and forum group discussions. The data that has been collected is then analyzed by qualitative data analysis techniques with stages: A) Data reduction or sorting; B) Presentation of data; D) Drawing conclusions on data (Sugiono, 2010).

D. Result and Discussions

1. Sokawera Village, Cilongok District
Sokawera Village, Cilongok Subdistrict is a village located on the top of Mount Slamet. The east is bordered by Sunyalangu Village, Karanglewas Subdistrict, while the north is bordered by Tegal Regency because it is on the top of the western part of Mount Slamet. In the west, Sokawera Village is bordered by Gununglurah Village, Cilongok Subdistrict and in the south, Singasari Village Karanglewas Subdistrict (Warsono, 2018).

The people of Sokawera Village are mostly farming or gardening and raising livestock. This is due to the support of the fertile potential of the environment. In addition to the support of a fertile environment, the culture that developed in the community is the development of the agricultural sector, the development of the plantation sector and the development of the livestock sector. Therefore, the majority of the population is farming, raising livestock and gardening (Imam Fachrurozi, 2018).

2. Community Empowerment through the Development of Renewable Appropriate Technology
a. Philosophy of Community Empowerment
Community empowerment carried out in Sokawera Village is a movement practiced by Imam

Fachrurozi. The priest is a religious figure in the village of Sokawera. He is located at Grumbul Glempang, Sokawera Village, RT 03 RW 05, Cilongok District. The philosophical foundation of the concept of community empowerment which is appointed and developed by the Imam (Imam Fachrurozi, 2018), namely that:

"All of God's creations are creatures that are provided for the benefit of human life. Benefit is created by God so that people can worship Him. Benefit does not have to be expensive and obtained from faraway places, but can be obtained from the surrounding environment. "

The concept of empowerment which became the philosophical foundation of the empowerment movement was always conveyed by the Imam when the writer met and talked about community empowerment. The purpose of the basic foundation as the philosophy of the empowerment movement above is that in carrying out the steps of empowerment, both before starting or being started, the belief that must be instilled that all-natural environments both inanimate objects and living things are objects of God's creation. This belief must be instilled as the foundation of the empowerment philosophy.

After the philosophy of monotheism was embedded in the foundation of the philosophy of empowerment, the follow-up that was practiced as a form of human endeavor was to find and map all the potential that exists in nature. The potential that is sought in nature does

not have to be from far away. It is enough in the surrounding environment that the value of benefits can be obtained, so that the costs obtained are cheaper, but the benefits are not lost. Well, to process in order to get something whose value of benefits is not inferior to low cost, then humans are required to always learn and develop themselves. That is the basic foundation or basic philosophy of empowerment delivered by the Imam.

b. Community Empowerment Process

In carrying out the process of community empowerment through developing appropriate renewable technology, at least the Imam uses the three-step empowerment movement. The three steps are steps to awareness, steps to capacity building and steps to provide power (Anak Agung Istri Andriyani, et al., 2017). The third mapping of the steps the author wrote to make it easier to understand the empowerment process carried out in the Sokawera Village, Cilongok District.

The author deliberately summarizes it in the three steps referred to because the empowerment process carried out by the Imam is in line with the side of community empowerment expressed by Kartasasmita (in Mustangin, et al., 2017): First, that in carrying out the empowerment process, empowerers try to create an atmosphere that enables the community's potential developing. Second, strengthen the potential or power possessed by the community. Third, empowering means protecting.

In doing empowerment, the facts found by the author point out that the empowerment process carried out by

Imam Fachrurozi in Sokawera Village is in the same direction or in line with the theory revealed by Kartasasmita above, so the authors need to include it as an reinforcement of the importance of empowerment through the development of appropriate technology renewable. The process of community empowerment carried out by the Imam in Sokawera Village through the development of appropriate renewable technology, namely:

1) Step Awareness

The awareness step is the initial step in the movement of community empowerment through the development of appropriate technology to be renewable. In this step, socialization is carried out to the subject of empowerment regarding the importance of developing appropriate technology for renewable. The socialization process is carried out in two ways. The first way is to give uswah or examples. The second way is to motivate.

First, the first way that the Imam does as the subject of empowerment is to set an example. The Imam's attempt to set an example was given to the subject of empowerment when they visited the Imam's residence in Sokawera Village. The empowering subjects who visited the Imam's residence were friends of the profession as animal breeders. Be it cattle or goat breeders.

When visiting, consciously or unconsciously, both parties, namely the subject of empowerment and empowerment, must make a conversation

about the condition of their livestock. Well, this is where the Imam began to socialize to the public both consciously and unconsciously. The socialization carried out was by asking about the condition of the livestock, the number of livestock and how the livestock were dung. Here the Imam starts asking about the pollution that occurs due to the waste manure owned. Following is the statement of the Imam (Imam Fachrurrozi, 2018):

"In making solicitation or socialization to the subject of empowerment, the usual thing is to give an example that I have done. The reason is because humans are the easiest to imitate; imitating things that have been practiced. Therefore, in conducting empowerment through biogas, it can be done by talking in a good manner, then having a dialogue, chatting and visiting each other. From there, there will be a desire to emulate the application of technology that I have done. So the easiest way to do this is to show what has been done."

After the subject is empowered, he will also tell the situation. Almost all residents of Sokawera Village stated that livestock waste caused air and water pollution to the surrounding environment; which states that not only a small number have large land.

For the subject of empowerment who has a narrow land, the statement conveyed is

that cow or goat manure as community livestock causes air and water pollution. Well, hearing the statement conveyed by the subject of empowerment, Imam immediately pointed out the development of the appropriate renewable technology that he had made. The appropriate renewable technology that has been made is the biogas installation.

The biogas installation is a series of waste manure waste into gas and fertilizer. Dirty waste is still converted into gas, which is then channeled through a pipe to the stove and then becomes gas as a daily cooking medium. The fire and gas generated from the biogas processing process does not smell of livestock manure and does not endanger exploding, and so on. This is because the content of the gases from the processing of said manure has low methane content.

Fertilizers produced from the installation of biogas produced by manure waste can also be directly utilized by the community; without having to be processed first. Livestock waste from the processing of biogas plants in the form of fertilizers is in the form of liquid fertilizer and solid fertilizer, so that the community can directly use it to provide nutrients to plantation crops and agricultural crops without buying like buying urea fertilizer.

Second, it is motivation. After the subject of empowerment was shown, an example of the development of appropriate

technology that had been made by the Imam, the next step as a follow-up to giving an example was motivating. Priests motivate education subjects that they can make the same thing. Imam also gave assistance that he would assist in the manufacturing process with free assistance. The benefits of implementing a biogas installation were also delivered by the Imam. The information is based on the following statement from Imam (Imam Fachrurozi, 2018):

"There are many advantages to using biogas, mas. First, is by being free from the cost of buying lemon tube gas in a shop. For those who cook a lot, at least the fulfillment of gas needs is helped. Second, pollution of cow dung is minimized. Third, the availability of cheap fertilizers those have tremendous benefits for plants and families due to savings in buying fertilizers. Fourth, for fish keepers, the biogas plant waste can be used as high nutritional feed."

The benefits presented by the Imam start from; 1) Free cooking costs due to gas are obtained. While still maintaining livestock and still being treated for biogas, the production of methane gas from the biogas installation continues; 2) No more pollution caused by livestock manure; 3) Availability of cheap quality fertilizers not inferior to urea. Even the costs that were used to buy fertilizers can be used for other household needs such as buying daily healthy food and for the school fees for children; 4) Availability of

natural nutrition full of fish for fish because biogas waste can be directly used to feed fish directly.

These are the two stages in implementing the awareness process in the empowerment process through the development of appropriate technologies for renewable. The intended stage is the stage of giving examples and motivation. After the stage of giving examples and motivation as an effort to raise awareness of the subject of education, the next step as a second part of the process of community empowerment through the development of appropriate renewable technology is a step to increase capacity.

2) Steps for Capacity Building

The capacity building step is carried out by Imam Fachrurozi as the community empowerment through the development of appropriate technology to be renewable. The method of capacity building is done by being directly involved in making community-owned biogas installations. Starting from guiding or providing knowledge on how to make biogas installations, directing the materials needed to be purchased to help empowering subjects to assemble biogas installations from the 0% (zero percent) to 100% (one hundred percent) stage.

Guidance is done sincerely. The goal is for the community to be helped by animals to escape from the snares of livestock poaching pollution, and so that the subject of empowerment can save costs that should be used to

buy fertilizer or fish feed to other more useful activities. The cost of assistance and capacity building is carried out by the priest freely or for free. Not charged a penny. Said by the Imam (Imam Fachrurrozi, 2018) as follows:

"We help them as neighbors when asked for fees? They are also our brothers. They have lived just barely. For example, if you want to participate in making biogas installations as a media to break down air pollution and break down the water pollution of the surrounding community, thank you, *mas*. At a minimum, their neighbors do not smell the pollution that is caused by manure is good. At a minimum, they can be helped by saving on the cost of buying LPG materials, but also fortunately, *mas*."

In order to strengthen the information stated by the Imam above, the author also obtained data from Mufuf. Ma'ruf is a Metal cattle breeder at Grumbul Kejubug, Sokawera Village who is the subject of Imam Fachrurrozi's empowerment. The following is information stated by Maufuf regarding the steps to develop community empowerment through the development of appropriate, renewable technology (Ma'ruf, 2018):

"In making biogas installations, which are arranged from start to finish, at most, I only buy the items needed, such as pipes and gas storage

barrels. The wood is already there and just takes it. For example, for example, there are nails that are lacking, the orders of the boys to buy. So what made the series from the beginning to the end was Pak Imam ... The benefits are so many. One of them is saving gas costs because the gas is durable from biogas plants."

A similar statement was also conveyed by Sinwani. He is a Glempang cattle breeder, Sokawera Village. The statement delivered by Sinwani, namely (Sinwani, 2018):

"The one who made the biogas installation is Sir. I am most helpful as needed, such as providing pipe materials, providing hoes to dig soil, and so on. In my place, the installation that is made is minimalist or simple. Who works or becomes a foreman, sir, Imam. He is the architect. We help ourselves."

3) Steps for Giving Power

The final step as the third stage is the step of giving power. In this step the position of the subject of empowerment is to wait for the results of the process of developing appropriate technology for renewable production. At this stage of giving power the empowering position becomes the companion who evaluates and improves the empowerment process which will show the results. The purpose of the evaluation and improvement of the empowerment process which will show the results is to wait for the results of the

installation of biogas installations that have been arranged 100% (one hundred percent).

Imam as the empowerment is tasked with repairing any irregularities or errors in the operation of biogas plants as a medium for developing appropriate technology to be involved. Suppose there is a problem as the gas does not come out because the gas supply pipe is filled with water, then the Imam as the empowerer fixes it. If there is a leakage of reservoirs of biogas waste as a medium for biogas production, then the priest as the empowerment is also improving. In practice, the Imam is usually assisted by one empowering assistant named Warsono. The following is the reinforcement statement from Warsono (Warsono, 2018):

"... yes, for example, there is water that clogs the gas installation so that the shelter is not distributed to the stove, the one that fixes it is Mr. Imam. I usually help. For example, the biogas installation located at the residence of Mr. Maufuf leaked, sir, Imam and I were there to repair it."

The problem that occurs in this step — the step of giving power — is not just about the practice of evaluating the series of biogas installations that have been made. But the step of giving power is also applied to the psychological dimension of the subject of empowerment. This is done because the psychological condition of the subject of

empowerment usually decreases due to fear of failure. The following is the statement given by Maufuf as reinforcement or motivation in the step of giving power (Ma'ruf, 2018):

"It happened in the biogas installation circuit that the gas would not come out. It seems like it's clogged with water or why I'm not that understand. Finally, because I knew and was confused, yes, sir, sir, Imam, to fix it. The results are complete and correct. After finishing, we donated together while drinking coffee."

In the step of giving this power, Imam as the empowerer does not give up his hands. He always corrects if there is something needed for the smooth operation of biogas. So, in the stage of giving power, Imam not only gave power in the form of technical assistance to run the operation of the biogas plant alone, but he also helped give encouragement in the form of motivation to keep the spirit in making the development of appropriate technology for renewable.

c. Community Empowerment Constraints

In implementing the community empowerment process through the development of appropriate renewable technology in the form of installation of biogas installations, the obstacles that arise can be grouped into two. First is the obstacle that comes from empowerment. Second is the obstacle

that comes from the subject of empowerment. The explanations from the two groups are:

1) Constraints of Empowerment

One of the obstacles that prevents empowerment from carrying out the process of community empowerment through the development of appropriate renewable technology in the form of installation of biogas installations is the constraint of the busyness of empowering. Since Imam is a religious leader and the backbone of the family, the Imam needs to spend some time in the empowerment process. Priests need free time starting from the socialization step, the capacity building step up to the step of giving power.

Because what makes the Imam need to find free time or leisure in carrying out empowerment steps as the writer mentioned is because he is a religious figure, sometimes unexpectedly the arrival of a person or group of people who visit or stay in touch, guests who come not only one time, but one after another. If the guest has gone home, the priest goes to the rice fields, to the garden and fish pond to care for the pet plants and take care of the fish livestock that are kept.

After caring for caring for pet plants and caring for fish animals that are kept, he will immediately teach the children of the community to study religion at his residence. Not to mention if there is an invitation to lead a prayer or lead a prayer. So you

really need to spend special time to do the empowerment steps as mentioned earlier. As for the Imam's statement delivered by Imam (Imam Fachrurozi, 2018) related to the above article, namely:

"Constraints that sometimes arise in doing empowerment are when the mas. Finding free time is very difficult and needs carefulness. The reason is because sometimes guests go back and forth to the house. Yes, I am still grateful for the relationship that is worship. On the other hand, the arrival of guests will reduce sin too ... after the guest returns home, I go to the garden, to the rice fields, to the pond and sometimes look for grass for livestock. Going home in the afternoon is usually the imam of the jama'ah prayer, taking a short break and leaving for the rice fields again. For example, there are guests. Yes, glorify guests. Afternoon teaches Koran — delivering the knowledge of religion — to children. Yes, it is necessary to spend a special time which is free."

2) Constraints of Subject Empowerment

First, it is material constraints. Material constraints that usually occur in this case, is namely the inability of farmers to provide tools and materials for making biogas installations. Many farmers have pets and

have rice fields, but do not have enough money to buy biogas installation materials. It is highly recognized that the benefits of biogas installations for empowering subjects, namely farmers, are very large.

The benefit of developing appropriate renewable technology in the form of biogas installation is saving the cost of purchasing gas fuel because it has been able to produce itself, saving the cost of obtaining fertilizer because it can produce its own natural fertilizer, providing fish feed because it can be obtained from biogas installation waste, and free from livestock manure pollution. It is a tremendous benefit for yourself and the surrounding community if the process of community empowerment through the development of appropriate renewable technology in the form of installation of biogas installations can be carried out. However, not all farmers can afford to buy materials to build the intended biogas installation.

To develop appropriate technology for renewable use in the form of installing biogas installations with self-help workers, at least the cost is needed between Rp. 5,000,000 to Rp. 10,000,000. The cost is to build cattle dung storage into biogas, for the cost of building a biogas waste collection tank, to buy biogas installation pipes, to buy and modify biogas plant stoves, and to build gas storage from biogas installations. Although labor costs are self-help and the assistance costs of

empowering are free, not all farmers want and are able to collect that much money. Presented by Imam as follows (Imam Fachrurozi, 2018):

"There are very large benefits from biogas installations for the environment. It is starting from saving the cost of buying gas, saving the cost of buying fertilizer because it has produced itself. Even the gas can be shared with neighbors. The next benefit is minimizing air and water pollution from livestock manure and manure waste can be used to feed fish animals in ponds ... The cost for materials is only around 5 to 10 million. That's good."

Second, it is Non Material constraints. The second obstacle as a non-material constraint is in the form of doubt. As a psychological dimension, doubt arises because of consideration of the costs that will be incurred when making a biogas installation. In addition to the constraints on the costs incurred, Ken's problems with the results of the biogas installation will succeed or not become an obstacle for people who have not tried or want to try to develop appropriate, renewable technology in the form of installing biogas plants. This was conveyed by Mahrudi Dirin as one of the goat breeders in Sokawera Village, Cilongok District. Expressed by Mahrudi (Mahrudi, 2018); "What would it be like that, did you make a bigas

installation like that? Is the fire burning and harmless? "

d. Empowerment Results

First, the community as the subject of empowerment through the development of appropriate renewable technology in the form of installation of biogas installations can minimize pollution due to manure. The intended pollution is air and water pollution. Second, the community as the subject of empowerment through the development of appropriate renewable technology in the form of installation of biogas installations is able to save on gas procurement costs as one of the cooking media. The community as the subject of empowerment can divert the original costs for the supply of cooking gas to other more needed costs such as financing healthy food needs and meeting school needs (Ma'ruf, 2018).

Third, the community as the subject of empowerment through the development of appropriate renewable technology in the form of installation of biogas installations is able to provide natural fertilizer needs independently. Provision of these natural fertilizers independently as a substitute for meeting the needs of urea fertilizer. The budget, previously used to buy urea fertilizer can be transferred to improve family welfare. Fourth, the community as the subject of empowerment through the development of appropriate renewable technology in the form of installation of biogas installations is able to provide high nutritional fish food from the results of biogas processed waste (Imam Fachrurozi, 2018). So, funds that were originally used to buy fish food can also be transferred to meet family needs, both for food, clothing, shelter, and education for children

from the subject of empowerment through the development of appropriate, renewable technology in the form of installation of biogas installations.

e. Home of Empowerment: An Empowerment Model

The empowerment house is a model for implementing community empowerment born from this research. The empowerment house contains concepts about the ways that must be taken in conducting community empowerment. The method that must be picked up by the writer describes from the beginning, starts the empowerment process to the way to end the empowerment process.

At the house of change, the author divided it into five parts. The five parts must be practiced in a coherent manner so that the target of empowerment is achieved in its entirety and can run sustainably. The five processes referred to, namely;

a. Subject Mapping Empowerment

Mapping is a process that makes an empowerer able to recognize the elements of knowledge, the dynamics of the subject of empowerment, reciprocal dependence and interactions that occur in the community as subjects of empowerment (Tupan, 2016). In this mapping, the initial step of the empowerment process is carried out. The initial step is to study the existing community environment starting from studying the culture of the community, learning the character of the community, studying the people who are leaders in the community to grouping the subject of empowerment which will support the empowerment

process and reject the empowerment process.

At this stage, the data obtained must be valid. The reason is because the mapping phase of the empowerment subject is the door to the empowerment process. The results that must be obtained from this stage are the description of existing community leaders, community character data in undergoing social activities, data on activities that are liked by the community, and so on, which data is needed in the implementation of the empowerment process.

In other words, mapping the subject of empowerment is an initial effort carried out empowering before carrying out the empowerment process. The end result of this process is data about the subject of empowerment. The data covers various aspects of life, ranging from economic aspects, social aspects, religious aspects, educational aspects, and so forth. Thus, at this stage the empowerment builds the initial foundation of empowerment. Like a foundation, the more valid the data collected, the stronger the foundation of empowerment that will be carried out.

b. Coordination

The definition of coordination as delivered by Stoner is a process of integration of separate goals and units to achieve certain goals (Adi Hartono, 2016). The essence of the efforts made in coordinating empowerment activities is the union of perceptions and understandings between two or more communication subjects so as to create a shared perception or understanding to achieve the desired goals. In coordination of empowerment, this coordination is

carried out by empowerers to the subject of empowerment.

The subject of empowerment can be in the form of community leaders and other empowering technical actors. The purpose of this coordination is to create a shared perception and atmosphere regarding the final target to be achieved. Therefore, efforts to obtain support from every element of the community and efforts to minimize risk or minimize resistance in the empowerment process become one of the important parts of the practice of coordinating community empowerment. The community coordination phase is divided according to the scope of empowerment, the nature of empowerment and the direction of empowerment.

c. Empowerment Expansion

Expansion implies the need for an area of authority that was originally narrow and then expanded. The territory can be in the form of economic, government, education and so on. The purpose of expansion empowerment is that in empowering, empowering must expand the area of communication empowerment. The goal is that the empowerment process that is being carried out is increasingly solid and embedded in the community.

Therefore, the empowerment process that is being carried out is getting stronger and embedded in the community, empowering to communicate to various parties so that they are willing to practice the same empowerment. With the presence of various parties who are willing to practice empowerment as well as they are positioned as subjects of empowerment and as empowerers,

then support for the idea of empowerment that is being carried out will be increasingly widespread. With the widespread support, resistance is also increasingly minimal. With widespread support and minimal resistance, the empowerment target is achieved and can be sustainable.

d. Evaluation of Empowerment

The step or step of empowerment evaluation is a process that must be passed when doing empowerment. At this stage, the empowerment is tested with the results of empowerment that has been obtained. At this stage, the process of determining follow-up empowerment is considered.

If the empowerment and empowerment subjects are able to pass the empowerment evaluation stage, then the results of empowerment will be carried out by an evaluation or self-assessment and can go to the next stage or stage of improvement. The reason is because empowerment evaluation is defined as a stage where empowerment and empowerment subjects make an effort to reflect themselves or evaluate the results of empowerment that have been obtained (Bambang Sugeng Dwiyanto and Jemadi, 2013). Therefore, if the results obtained are satisfying and empowering as well as the empowering subject who wants to improve the results of empowerment that has been obtained, the empowerment process continues to the next stage, namely the stage of improvement. Thus, empowerment evaluation is a self reflection or evaluation of the results of empowerment that has been obtained.

e. Repair

The improvement phase is the final stage of the community empowerment process. This stage takes place continuously, continuously and without stopping. The process of improvement in a continuous, continuous and nonstop manner is carried out as long as the empowerment and empowerment subjects want the intended step. If the empowerment and empowerment subjects want the empowerment activities to be ended, then the repair process will end as well.

So, it can be said that the stage of improvement as one of the steps to apply empowerment in this paper is as a continuous process of innovation. The process of relentless innovation is carried out as a form of empowering creativity and the subject of empowerment that works together so that the results of empowerment always go hand in hand with the times. In conclusion, the stage of improvement of empowerment is an effort carried out jointly by the empowerment and the subject of empowerment so that the results of empowerment that have been obtained always have added value to the community and in accordance with the needs of the times.

E. Conclusions

Empowering rural Muslims through the development of appropriate renewable technology is empowerment that is practiced by empowerers and the subject of empowerment together. The main stimulus in the process of empowering rural Muslims through the development of appropriate, renewable technology comes from empowerment. Starting from the stimulus, then the subject of empowerment is invited to improve the quality of life experienced to be more increasing and

prosperous. Therefore, both parties become subjects that complement and inform each other so that empowering subjects are able to fulfill their life needs independently and their quality of life is improved.

The findings presented in this study are models of rural Muslim empowerment through the development of appropriate technologies for renewable. The model is called the House of Empowerment. This model is a concept in carrying out the empowerment process from the beginning to the end. In this concept, there are five processes that must be passed as a way to empower the community. The five processes must be carried out coherently so that the target of empowerment is achieved and can be sustainable. The five processes referred to, namely; 1) Mapping the subject of empowerment, 2) Coordination, 3) Expansion of Empowerment, 4) Evaluation, 5) Improvement.

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