Communication model of musyawarah and role of traditional leaders in building public acceptance to support nuclear powerplant development plan at Bengkayang Regency

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Abstract. The paper aims to explain communication strategy to increase the public acceptance of nuclear power plant in Bengkayang Regency. West Kalimantan will be the first area to have a nuclear power plant in Indonesia. In order to get the permit to build it, the government need public acceptance. Nevertheless, society divided into pro and cons on the nuclear issue. Government need a new communication strategy to bridge the divided opinion. This study aims to elaborate on the concept of deliberation communication and social perception. The qualitative method used in doing this research. Data analysis conducted by interview and literature studies. Results of the research found that the society of Bengkayang tends to trust their traditional leaders. The best communication strategy to help people understand the message is by having deliberation communication. Within the deliberation, the communicator should be accompanied by the traditional leader. Before that, the expert has to convince those traditional leaders to support the message they wanted to deliver to the people. Others finding of this research was the people only need a simple explanation on the benefit and risk with a nuclear power plant in there area.

1. Introduction

The construction of a nuclear power plant (PLTN) is a strategic development for the future of countries in the world. Currently, 436 nuclear power plants generate 11% of the world's electricity, which are spread across 32 countries and have been operating for decades. A total of 71 nuclear power plants built in 15 states, and 43 of them made in Asia, there is also almost 500 other nuclear power plant planned to be built [1]. One hundred seventy-four are under the plan, and 301 are still in proposing phase. This fact showed that the trend of nuclear power plants usage continues to increase. The security and safety of nuclear power plants are increasingly reliable. The use and choice of nuclear power plants is a wise solution in meeting electricity needs that are correlated with economic (especially industrial growth), increasing welfare and having an impact on environmental sustainability.

In connection with the procedure for building a nuclear power plant project, according to Bennet (1985), a former IAEA official, the decision-making process commonly taken in the construction of a nuclear power plant project is through the following stages: planning preparation, making studies.
Feasibility, and if it is feasible then it is decided to build it, followed by the phase of public acceptance opinion polls, discussion of project financing, preparation of facilities and labour, and finally drafting a contract before project development begins [2]. Based on Bennet’s explanation, the role of public acceptance is an important part that helps determine the realization of a Nuclear Power Plant development plan.

The construction of nuclear power plants seen through a socio-cultural perspective is a negotiation process from and by several parties within their interests of deliberate change to improve the quality of life—a continuous negotiation process accordance with the stages of development that passed. For a successful negotiation process, there are characteristics such as "tension" and "common ground". In this context, the provision of honesty, open and balanced information through appropriate socialization strategies coupled with mutual respect is an ideal condition. If these factors ignored, it is prone to generate prejudice and like-dislike attitudes. In principle, deliberation (musyawarah) is part of democracy.

There are still many people who are not willing a nuclear power plant in their area. The research team suspects that one of the factors causing the low acceptance of the community towards the construction of nuclear power plants is the limited reach and not optimal socialization of nuclear power plants that have been carried out by the government through BATAN. As has been done by BATAN in West Kalimantan, socialization related to technology and nuclear benefits has only carried out in the agricultural sector.

For example, in Bengkayang regency West Kalimantan province, the society where the NPP planned to build had several thoughts on nuclear. Mostly they were divided into the pro-nuclear and opposing nuclear. Misinformation on the impact of nuclear, the story of Hiroshima-Nagasaki bombing, Chernobyl, nuclear weapon, and Fukushima was also frightening the society. Others factor was the information at mass media and social media mostly only highlighted the accident of nuclear rather than the usage of nuclear in industry or daily life. The others also thought about their nation terrible culture, which is corruption. In the last ten years, Indonesia has faced many malfunctions of administration and infrastructure. The biggest one probably the id card corruption that impacted the whole nation.

Those cases showed us that in Indonesia, especially at West Kalimantan, the narrative about nuclear constituted dominantly with the bad stories. Therefore, the communication approach in communicating the NPP is deliberation communication based on the existence of togetherness or communality.

West Kalimantan is one of the provinces experiencing a prolonged electricity crisis, which since several years ago and currently requires a large electricity supply for the alumina industry, households, public infrastructure and tourism (even now buying electricity from Malaysia). This condition makes the construction of nuclear power plants as an alternative solution to the right problem. The research by the National Nuclear Energy Agency has observed that West Kalimantan contained a measured uranium content of approximately 35 thousand tons. Besides, BATAN (Nuclear Energy Agency) in its initial study recommended the construction of a 1,000 or 4 x 250 Megawatt nuclear power plant (PLTN) in West Kalimantan. Based on the results of research and recommendations from BATAN, it is possible to build a nuclear reactor in West Kalimantan. If this realized, it means that the province of West Kalimantan will have a solution to get out of the prolonged electricity crisis. However, recognizing a nuclear power plant in West Kalimantan is not a simple matter. In addition to requiring careful preparation in terms of legal, financial, technology, security and so on, the issue of community support expected to be a quite complicated problem to be resolved. It can even be sure that it will get a firm rejection from the majority of the community, especially the general public if not given information and adequate education through the socialization process with the right strategy.

This paper conducted based on several previous types of research. First, research on social perception on Nuclear Power Plant wrote by A.M. Djuliati Suroyo. His study showed that until now, nuclear installations/industries still raise the pros and cons. People tend to worry about the potential dangers of radiation and waste generated by the nuclear industry. They also doubt the capabilities in developing such nuclear power plant [3]. Furthermore, there was a different case of the community's response to the PLTN development plan in the Jepara area.
Second, based on research from Irianto (2005) obtained the following information. First, there are still many informants who reject the PLTN development plan in Jepara (as well as the implications among the community). The people reject because information about NPP development plan was incomplete. People also have a lack of trust in the government. Third, there is a demand that this nuclear power plant project must be "discussed" (discussed) first and be able to involve the community before construction can be realized [4]. The results of the research, as described above, indicate community rejection and reasons for rejection. The results of the following research discuss the psychological impact caused by the Tsunami, which resulted in an accident at the Fukushima Daiichi NPP.

Those previous research found the response of society on the plan of Nuclear Power Plant at those areas. Apart from the reasons for concerns about the potential dangers of radiation and nuclear accidents, reasons for lack of trust in the government in determining development policies and the desire to be consulted and involved in the planning process for nuclear power plant development. Based on the results of this review, there are similarities between the research and the research we propose. The similarity, first, lies in the research variables related to the aspect of community acceptance as a form of response to the PLTN development plan in each region. Second, there is a typical picture of the tendency of the public to reject nuclear due to the psychological aspects of the post-disaster that occurred at the Fukushima Daiichi NPP.

The difference between this research and previous research is that the aspect of community acceptance described in the three studies shows a picture after the socialization of the PLTN development plan to the community. Meanwhile, this paper will be carried out at people's perceptions before the socialization done because this paper aims to build public acceptance in order to support the plan for the development of a Nuclear Power Plant (PLTN).

Currently, the first nuclear power plant in Indonesia planned to build in West Kalimantan. Based on a study conducted by BATAN, the area of Gosong Beach which located in Bengkayang Regency is an area of interest / potential site. Therefore, this research activity focused on the location of Bengkayang Regency, West Kalimantan, with the aim that the results of this study can be of direct benefit to the PLTN development plan in West Kalimantan.

2. Material and Method

2.1. Time and Research Site
Data collection was done from June to September 2020 at Bengkayang Regency West Kalimantan. Bengkayang Regency was located at coastal and hinterland of West Kalimantan Province in Indonesia with the area about 5.396 km² [5]. Their area was almost the same size with Bali province in Indonesia.

Bengkayang Regency was dominated with land area about 5.036 km² and 360 km² was a coastal area. It also has a borderland with Malaysia at their northern border area. Therefore, this area also has a unique characteristic because influenced by the dynamics of their neighbouring states.

2.2. Data Collection and Analysis
Data collection techniques used were interviews (in-depth interview, observation, and documentation). Informants were selected with purposive sampling and snowball sampling. Purposive sampling was done to identify several informants from formal sectors, while snowball sampling was examined to expand the source of data during the interview. The total of informants interviewed in this research was 34 persons, such as Bengkayang Regent, Head of Region Development and Planning Division, Chief and vice-chief of Bengkayang region house of representative, Head of Bengkayang Dayak Council, Head of Bengkayang Indonesian Ulama Council, Head of Dayak Youth Association, Committee of Indonesian Youth National Committee, Committee of Bengkayang Woman Organization, Border Figures, Chief of Dayak Bidayuh Ethnic, representative of society from teachers, housewives, traders, and students.

This paper used a qualitative approach to explain the meaning of the communication process within society [6]. This research procedure produces descriptive data. The in-depth interview was investigating
several themes, such as their knowledge, understanding, and public acceptance on the development of NPP. Most of the interview was done to understand their reason and motivation in accepting the nuclear power plant. The secondary data was obtained from printed or online documents, offline and online references from books, journals, and websites. Data analysis in qualitative research has been carried out starting from the formulation and identification of research problem and following several steps, such as data managing, reading dan memoing, describing, classifying, interpreting, representing, and visualizing [7,8].

3. Results and Discussion

3.1. Deliberative Communication as a Participatory Development Communication Approach

Togetherness in interpreting or perceiving something is essential to the community concerned. Togetherness in perception among society is only possible when preceded by regular, intensive and extensive two-way or circular current communication. Extensive defined as efforts to strengthen relationships with organizations, institutions and figures and people other than their groups. This concept is vital for the sake of friendly cooperation or partnership between groups of different goals and activities which will facilitate communication between groups as well as reduce competition or threats or programs from parties who do not understand or have little interest.

From a cultural point of view, deliberation is a form of culture that is generally shared by various cultures in Indonesia. Deliberation becomes the identity and characteristic of the Indonesian nation. Furthermore, deliberation communication is placed and used as a form of participatory development communication. Hadiyanto explained that there is three primary analysis related to participatory development communication, such as; (a) level of knowledge, attitude and practices, (b) communication behaviour and mass media accessibility, (c) focal problem and another potential resource have been collected [9]. There are at least five characteristics of deliberative communication: (1) the existence of different views being confronted; (2) there is tolerance and appreciation for listening to other people's arguments; (3) there is an effort to reach consensus and respect differences; (4) old views can be questioned and have the opportunity to debate them; (5) coverage for communication and freedom without control [10].

The concept of togetherness is indeed fundamental and even determines the communication process. Communication itself defined as a production of commonness in meaning. The most important thing as a result of communication is togetherness in meaning. Therefore, it is possible to express the participation by the exchange and negotiation of the meaning. It will be done between all parties and the elements. The best communication technique is done by a dialogue which can be interpreted as a process to recognize, compare and bring together the same elements of the logic under discussion. Communication function is to find similarities or compatibility (compatibility) and not to seek and sharpen differences (contrast) [11]. The outcome of this process is to achieve is harmony and compatibility. If it fails to carry out the function of finding equality and harmony, then a communication crisis occurs. Therefore, this exchange and negotiation of meaning are most applicable when it is implemented in an appropriate circumstance.

Indonesian society has this very appropriate circumstance with the existents of the deliberative institution. Deliberation (Musyawarah) as a social institution for communication needs to meet basic requirements, which from the beginning should be understood and lived by the parties involved in the deliberation. The prerequisites include good faith to trust and respect each other (mutual trust and respect) because everyone is aware of their respective goals, interests, personal and group problems. It is clear that these prerequisites and the understanding of the existence and necessity of these broader and higher common goals, interests and problems are closely related to traditions. It also related to their fundamental values and socio-culture rooted in various systems and structures and processes of politics, governance, society, and autonomy. The convergence theory of communication rests on the absolute need to take into account human, political, economic, socio-cultural and social factors [12]. It is necessary to support a participatory communication
approach to build deliberations among community members in local community organizations. The aim is to explore genuine quality participation from communities.

Deliberative communication is a form of communication that allows all those involved in a communication process to interact and participate. Deliberation itself defined as a process in which other people relate to each other and get messages. Meanwhile, communication here plays a role in helping the process of a deliberation process because there are elements of communication, namely in the form of sources, messages, media, and message recipients who prepared to provide feedback. Some distractions can block the flow of information [13]. When connected, between technology and deliberations that we often do, there is both a communication process in it.

In this case, the deliberation communication is considered suitable for communicating about nuclear to provide information, knowledge, understanding, and public acceptance regarding the development plan of a Nuclear Power Plant (PLTN) project. Public acceptance is one of the factors that must be met as an absolute requirement to build a Nuclear Power Plant in a democratic country.

3.2. The Role of Community Acceptance in Realizing the Development of NPPs in Indonesia

Thus, the most formidable challenge for the government as the implementer of the law is how to increase the acceptability of nuclear electricity through increasing public trust. Therefore, socialization through available information and education needs to be strengthened, so that wrong perceptions about the risk of nuclear hazards change. So far, the PLTN socialization has been carried out by the government through BATAN. They did collaborate with the Ministry of Communication and Information and Research and Technology. The dissemination is done by providing information and education through lectures, public dialogue and talks in various forums, both through radio and television. Looking at the socialization strategy carried out by the government, it has not reached the wider community. Say it only involves specific society, in certain areas (Jepara, Bangka Belitung) and has not reached the wider community in other areas that have the potential to build nuclear power plants. Like the people of West Kalimantan at the grassroots level who will be in direct contact with the nuclear power plant construction process.

Several experiences in promoting save nuclear in Indonesia done by BATAN. Socialisation, campaign, seminar, and publication became their main instrument to achieve the society acceptance of nuclear power plant. Muharromah found in online media, coverage of nuclear issues done by Detik, Tempo, Antara, Tribun, Kompas, Viva, Jawa Post, Republika, Liputan 6, and Media Indonesia. The central issues that media covered was socialisation, nuclear technology application, health sectors, nuclear accident, and food sectors [14].

The necessary community acceptability undoubtedly expected to grow from all levels of society, especially those around the PLTN construction. In general, the characteristics of grassroots communities consist of those with low education, still adhering to local culture and traditions, the limited reach of the mass media and having strong social solidarity. Therefore, in socializing nuclear power plants, it is necessary to consider aspects that are characteristic of local communities so that the communication approach will be effective and efficient.

In line with the problems raised and reinforced by information on the results of previous research and theoretical studies, the problem to be solved through applied research activities for the past three years is how to build public acceptance through deliberation communication activities to support the PLTN development plan, as an effort to help the performance of the government (BATAN) in socializing and promoting nuclear power plants to the people of West Kalimantan.

The public acceptance of the PLTN development can be pursued through the socialization of the NPP by using an appropriate communication approach according to the characteristics of the target community. The communication process will determine community perceptions which are built on information and analytical power which will be used as the basis for them to decide whether or not they support or do not support the NPP development project. Based on these arguments, the team proposed activities for three
years to carry out public understanding activities for PLTN in West Kalimantan province to build public acceptance regarding the PLTN Kalbar development plan.

Based on the experience in several countries that have implemented the construction of nuclear power plants (PLTN), the public acceptance factor requires serious attention to sought in connection with the unbalanced dissemination of information from opposing parties, including anti-nuclear NGOs. Therefore, a communication, information and education approach about nuclear technology needed to build nuclear power plants to the public. Making the public understand new technology, let alone advanced technology, requires a wise and prudent way so that the "transfer of knowledge" to society can run well with an attitude of mutual openness and trust [15]. Openness means that it is necessary to explain what are the benefits and risks that can be caused according to the real facts. So that the public's knowledge becomes balanced and in turn, the community can judge fairly without any influence and pressure from any party.

There are several theories to formulate the public attitude regarding this nuclear power plant, including those proposed by T. Ohnishi and Y.S. Choi et al. who tried to formulate a public attitude regarding the plan to build nuclear power plants in each country, namely in Japan and Korea. In conclusion, Ohnishi emphasizes the importance of balanced positive and negative information so that people can determine their attitudes. In line with Ohnishi, Y.S. Choi et al. describe the Korean experience in formulating public perceptions of nuclear power plants qualitatively. He uses the latent class analysis and logistic regression method to map public perceptions using the input of opinion polls conducted by a survey company [16]. Choi concluded that there is a strong tendency if the more people get precise information about nuclear power plants, the public acceptance of nuclear power plants will be higher. Otherwise, risk perception will be low. Thus, it becomes clear that the role of delivering information is very decisive in building public awareness and public acceptance of the presence of NPP.

BATAN itself released their research in 2018 regarding the public acceptance with their center of nuclear science at Serpong, Indonesia. Almost 75% respondents agreed on the plan to build experimental nuclear reactor for electricity, 7% disagreed, and 18% not answering. For those who agreed, they believe it will be beneficial to push the electricity price into a lower level, to increase job vacancies, and it will not pollute the environment. Meanwhile, the disagree groups aware on the worst scenario of nuclear accidents [17]. To compare with our findings, this condition also occurred within the Bengkayang society. The idea of accidents still the first issues to come up, not to mention they also aware of the positive impact from nuclear power plant.

Based on our research finding, the social perception of NPP divided into pro and cons. The communication on this issue was complicated, mainly caused by several technical terms and negative perception of nuclear accidents. Therefore, the communication process to increase public acceptance should provide this particular issue to change societies mindset on how they perceived NPP before actually sending the messages.

We also found that several media, such as leaflet, speech, radio, television, or even internet broadcast, tend to be not effective because they only provide one-way communication. They did not give any chances for both communicator and communicant having a proper conversation to settle down the differences. It also proved to be hard for society to understand the messages on the one-way communication pattern. This condition also caused by a low level of education and low literacy rate. Besides, the flow of information flooding the society, whether it is true or even false information also affecting the negative perception of NPP. People were difficult to process all information with less room for dialogue.

3.3. Role of Masyawarah and Traditional Leaders

We found a specific type of Bengkayang Regency's people. They were divided into two groups of society based on their location, which are the coastal and hinterland society [18]. Both also have different characteristics. The coastal society is easy to adapt and also open-minded. The high traffic alongside their area as it is the hub to Singkawang or Sambas city from Pontianak affect their mindset. Meanwhile, the
hinterland society is more traditional and rarely accept new values. Nevertheless, in general, as mentioned by our informants, both group of society is welcome to new visitors.

Another characteristic of Bengkayang society was their high level of trust to their leaders, such as traditional leaders, religious leaders, and education figures (headmaster). Most of the people in Bengkayang believe what their traditional leader's statements. Even if they lied, they would hardly believe them as their primary source of information. This factor also influenced by lack of information access toward society. Although there are television and radio, they still can get Malaysian broadcasters. In the era of the internet, they were also facing trouble within the network. Most of the area was a blind spot or with a low signal of internet. Therefore, they believe the best way to communicate is by discussion face to face. It will also be beneficial if their traditional leaders led the dialogue or musyawarah. It has already become their custom and values. It is also mentioned by Husna and Yusuf that one factor of successful cultural communication was the issue of values within the society [19].

This information inspired us to formulate a communication model as the solution to overcome misperception of nuclear within the society of Bengkayang. This model will be elaborated into several units, such as communication, message, communicator, and communicant strategy. By this model, we believe it will best suit the condition of Bengkayang society. The people of Bengkayang with their infrastructures obstacle will be not comfortable to download any information from BATAN website. The BATAN publication within their repository will be rather useful for the society secondary source of information if they already accept the nuclear power plant plan. As mentioned by Noeraida and Sungkono, BATAN library archive already provided much informations regarding nuclear that can be traced down through internet [20].

Communication model to achieve shared understanding about nuclear issues could be done through musyawarah. The musyawarah set as a forum to have a dialogue between communicator and communicant, there will be a question and answer session. People of Bengkayang told us through musyawarah they also may ask for promises from the speakers/government/traditional leaders. As our informants mention this type of communication will be better received by society rather than by leaflet.

We also asked the informants opinion on who should talk about nuclear to the society of Bengkayang regency. Most of our informants believed that it should be an expert on nuclear or a well-educated person in nuclear issues. Those people need to send their message through dialogue to the traditional leaders first. Furthermore, after the traditional leaders agree on the message, they may together deliver to musyawarah with society.

Messages strategy, in this case, is related to what information that the people of Bengkayang want to know regarding the plan of the Nuclear Power Plant. The people desire a piece of superficial information about nuclear. What is the benefit of nuclear to society? How risky if there is NPP around their neighbourhood? They do not want to know the technical matters about the nuclear power plant. Only that simple, how is their life after there is a nuclear power plant? If there will be any risk, how they will be equipped to overcome the problem? They also want to know what industry will be growing in their surrounding in the future. It should be done with a down to earth term so it will be easier for them to understand.

The last is the communicant strategy. As we mentioned previously, the society will prefer that information firstly delivered to their traditional leaders, for example at the community of ethnicity, the council of tradition, the council of the religious preacher, and teachers. This first-class society needs to learn and understand the messages first. With the understanding and acceptance of the representative of society, it will be easier for BATAN or nuclear expert to gain more trust from other groups of society.

We tried to compare this communication based on traditional leaders with other local community in Indonesia. We found that the role of traditional leaders in the society existed in Cijambe, Minangkabau, and Kajang.

In Cijambe, the stability of traditional authority can be achieved due to internalized values, or the value of an intense process of socialization of traditional leaders in instilling values authority sacred to the
community [21]. Although this sacred authority does not happen in Bengkayang, we found that socialization of the value of traditional leaders was well preserved. Compared to Cijambe and Bengkayang, traditional leaders in Minangkabau were being respected and even gathered a high authoritative power before the colonization of Japan in Indonesia [22]. The fact that Japanese used these traditional leaders as their primary tool to attract the support of people in Minangkabau. It was mainly the same model that we proposed in Bengkayang by accommodating the traditional leaders as the mediator to the society in delivering the issue of the nuclear power plant.

Meanwhile, in Kajang, they did forest preservation based on territoriality with the coordination of Ammatoa authority and fully supported by the society. The people of Ammatoa respect and trust the ethnic authority to save their environment. By this method, Hijjang mentioned it would prevent the dualism of management in the forestry issue because the formal government keep struggling to coordinate within their ministry [23]. This best practice could also be implemented in Bengkayang as we found they fully trust their traditional leaders.

4. Conclusion

Nuclear communication always contains pros and cons between parties who have differences in knowledge, understanding, interests and desire to accept and support a PLTN development plan. The issue that is continuously debated is the impact of economic benefits and possible security risks because many are still traumatized by the accidents of several nuclear reactors that have occurred before (Chernobyl, Three Mile Island and Fukushima). Comprehensive two-way communication (dialogue) needed in order to change wrong perceptions and foster public understanding and trust to support and accept an NPP development plan. In a society that is still traditional in style, the role of community leaders determines how ideas, ideas and innovations can be accepted by the community.

Recommendation: Therefore, deliberation communication is seen as one of the most effective forms. This type of communication aims to seek public acceptance of the PLTN development plan in the Bengkayang area because through this communication it is possible to involve community leaders and provide space for dialogue in order to reach an agreement to participate. The role of traditional leaders within a society already become integrated values of the local community in several areas of Indonesia.

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