

The Government's communication: Diffusion Innovation or Participatory Approach towards Renewable Energy Development Project

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Komunikasi Pemerintah: Difusi Inovasi atau Pendekatan Partisipatif terhadap Proyek Pengembangan Energi Terbarukan

ABSTRACT

This study focuses on development communication in supporting Government's renewable energy project in Indonesia. Using a case study of the communication in the implementation of a micro-hydro power plant (MHPP) project by Indonesia government, this study examines whether the government's communication aims to encourage community participation in the project or merely diffuse the innovation for community's adoption, or combine both approaches. This project was chosen, since this requires more community participation to maintain it as well as sustained communication to facilitate meaningful engagement. Appreciative inquiry involving six focus group discussions and nine in-depth interviews were conducted to explore communities' experiences in exploiting the MHPP and accompanying communication process. The findings show that project development is divided into five stages: pre-initiation, initiation, adoption, transition and sustainability. Compared to the diffusion and adoption process, this project cycle is comparable to the five stages of the diffusion and adoption process. The information sharing session to introduce the innovation is significant to build awareness among communities. Likewise, the ideas to choose and train communities' representatives as pioneers to the adoption process help communities gain direct experiences about the use of technology. Nevertheless, the domination of diffusion innovation approach with mechanistic communication that prioritises technological change may lead to a lack of participation and empowerment. Participatory approach that acknowledges local values will likely empower communities and build ownership towards the project.

Keywords: *development communication; diffusion innovation; participatory; empowerment*

ABSTRAK

Kajian ini fokus pada komunikasi pembangunan dalam mendukung proyek energi terbarukan Pemerintah di Indonesia. Dengan menggunakan studi kasus komunikasi dalam pelaksanaan proyek pembangkit listrik tenaga mikrohidro (PLTMH) yang dilakukan pemerintah Indonesia, penelitian ini mengkaji apakah komunikasi pemerintah bertujuan untuk mendorong partisipasi masyarakat dalam proyek tersebut atau sekadar menyebarkan inovasi agar dapat diadopsi oleh masyarakat, atau menggabungkan kedua pendekatan tersebut. Proyek ini dipilih karena memerlukan lebih banyak partisipasi masyarakat untuk memeliharanya serta komunikasi yang berkelanjutan untuk memfasilitasi keterlibatan yang bermakna. Metode appreciative inquiry yang melibatkan enam focus group discussions dan sembilan wawancara mendalam dilakukan untuk menggali pengalaman masyarakat dalam memanfaatkan PLTMH dan proses komunikasi yang menyertainya. Hasil penelitian menunjukkan bahwa pengembangan proyek dibagi menjadi lima tahap: pra-inisiasi, inisiasi, adopsi, transisi, dan keberlanjutan. Siklus proyek ini sebanding dengan lima tahap proses difusi dan adopsi. Sesi berbagi informasi untuk memperkenalkan inovasi ini penting untuk membangun kesadaran di kalangan masyarakat. Demikian pula, gagasan untuk memilih dan melatih perwakilan masyarakat sebagai pionir dalam proses adopsi membantu masyarakat mendapatkan pengalaman langsung tentang penggunaan teknologi. Meskipun demikian, dominasi pendekatan difusi inovasi dengan komunikasi mekanistik yang mengedepankan perubahan teknologi dapat menyebabkan kurangnya partisipasi dan pemberdayaan. Pendekatan partisipatif yang melibatkan nilai-nilai lokal akan dapat lebih memberdayakan masyarakat dan membangun kepemilikan terhadap proyek.

Kata kunci: komunikasi Pembangunan; difusi inovasi; partisipatif; pemberdayaan

INTRODUCTION

This study focuses on development communication in supporting Government's development project towards transition from carbon to renewable energy. The project targets remote villages to exploit locally available renewable energy sources that can support their own basic domestic energy needs and creating increased economic activity. To achieve this goal there are challenges. While moving to renewable resources may be a policy goal, changing the attitudes and behaviour of communities is a substantial task in Indonesia. They have become accustomed to using subsidized conventional energy sources over many years. This requires public engagement that encourage active involvement from the communities to gain ownership towards the project (Yudarwati & Gregory, 2022; Yudarwati, 2019). Meanwhile, for the government, they are challenged by the pressure to achieve the target of achieving more renewable energy resources. This study contends to support this initiative and to improve living conditions, including environmental, and economic improvement, as well as infrastructure development cannot be separated from development communication (Servaes, 2020). This is a process of interfering in a strategic manner with either media or education, such as training or schooling, for the purpose of positive social change (McPhail, 2009). This is not merely information transferring process, but this is about using communication to promote new knowledge and agreement that facilitates social change.

Discussion on development communication is normatively about what kind of communication approach is needed to achieve sustainable development (Servaes & Lie, 2020). The key essence of sustainable development itself is to not only meet the present goals of development but also to think about future impacts and generations (Mefalopulos, 2005). The way these approaches are selected and applied usually depends upon three factors (Mefalopulos, 2005, 2008; Morris, 2006; Servaes & Malikhao, 2020). First, it depends on the purpose of the intervention, whether to achieve predetermined development goals or to empower the development beneficiaries. Second, it is shaped by different communication perspectives, i.e. a linear or mechanic model of communication, like diffusion of innovation, or a participatory or organic model of communication to facilitate mutual understanding and trust building. Third, it depends on ways to assess the impact of communication, whether quantitatively or qualitatively.

Which concepts of development communication practices are shaped by how development is defined, whether based on modernization paradigm or development as a change in human conditions (Lie & Servaes, 2015; Servaes & Malikhao, 2020). Following these development paradigms, the study of development communication is dominated by two conceptual models: diffusion and participation (Morris, 2006; Servaes & Malikhao, 2020). These models have distinct theoretical roots and differing emphases in terms of program designs and goals. The diffusion model was derived from the modernization paradigm (Morris, 2006). Modernization is considered as a process of diffusion in which individuals change from a traditional way of life to a more technically developed and more rapidly changing way of life (Servaes, 2020). Development was described as economic growth. The essential idea in the modernization perspective is the idea of evolution, which suggests that development is regarded as directional and cumulative, predetermined and irreversible, progressive, and, immanent with reference to the nation state (Servaes, 2020).

Within this modernization concept, the diffusion model implies the role of communication to transfer technological innovations from development agencies to their clients and to generate an enthusiasm for change through raising a climate for modernization among the members of the public (Rogers, 2003). This process is acted by inducing change in individuals' attitudes and behaviours towards innovation in a more systematic and planned way. An innovation is an idea, practice, or object perceived as new by an individual or other unit of adoption. An innovation is communicated through certain channels over time among the members of a social system (Rogers, 2003). It is a special type of communication, in that the messages are concerned with new ideas. This approach is therefore concerned with the process of diffusion and adoption of innovations in a more systematic and planned way. The communication process, however, relied heavily on the traditional vertical one-way model: Sender-Message-Channel-Receiver (SMCR).

The process of diffusion and adoption is regarded as a mental process that an individual passes through before adopting or rejecting an innovation. This includes five stages of the diffusion and adoption process (Rogers, 2003), i.e. (a) the knowledge of the innovation itself (information), (b) the communication of the innovation (persuasion), (c) the decision to adopt or reject the innovation (adoption or rejection), (d) implementation, and (e) the confirmation of the innovation by the individual. In the first stage, the individual has not been inspired to find information about the innovation. The communication process, accordingly, aims to inform the innovation to the individuals and help them to understand about the innovation. In the second stage, which is the persuasion, the communication aims to raise individuals' interests and to persuade them to seek details about the innovation. This relates to the individuals' attitude towards the innovation. The third stage is the decision stage, whether to accept or reject the innovation. In this stage individuals assess advantages and

disadvantages of adopting the innovation, which then shapes their decision to adopt or reject. In the implementation stage, the individuals decide to give the innovation a trial. They define the usefulness of the innovation and may look for further information about it. Finally, in the confirmation stage, the individuals decide to finalize their decision to continue using the innovation and may exploit it to its fullest potentials, or to reject the innovation.

Communication process in the early practice of this diffusion model is mostly related to the linear, mass media centric model directed to send information and messages from one person to another or many others, and usually in a vertical or top-down way (Mefalopulos, 2008; Servaes, & Malikhao, 2020). Development communication is linked to the use of media to persuade people to accomplish, sustain, and strengthen development goals, and media's role was dominant (Mefalopulos, 2008). This notion is based on the strong belief that the mass media, when are used properly, are capable of changing people's mindsets and attitudes. In spite of this, the failures of modernization lead to a reconsidering of the power of mass media in the diffusion and adoption process (Servaes, & Malikhao, 2020). Mass media alone cannot change people's attitude, neither behavior. People are eventually are not passive actors, either.

Inspired by Lazarsfield's original idea of the two-step flow of communication, Rogers (2003) proposed that when an innovation is introduced, this innovation passes through a series of stages before being adopted. First, most people aware of innovations from information shared by mass media. Second, a small group of people become early adopters when they start to adopt the innovations. Third, opinion leaders learn from early adopters and try the innovations. Fourth, the opinion leaders take significant roles to encourage other community members, i.e. opinion followers, when they find the innovation useful. Finally, after most people have adopted the innovation, a group of the laggards makes the change. Laggards are groups of individuals who show little or no opinion leadership. They tend to focus of tradition and, accordingly, last to adopt the innovation. Rogers's findings support the formulation of the two-step-flow of communication process, in which ideas often flow from mass media to opinion leaders and from these to less active groups of people (Mefalopulos, 2008). There are two elements are involved: "(a) the notion of a population divided into 'active' and 'passive' participants, or 'opinion leaders' and 'followers'; and (b) the notion of a two-step-flow of influence rather than a direct contact between 'stimuli and 'respondent' (or the so-called bullet or hypodermic needle theory)" (Mefalopulos, 2008, p.16). The role of personal influence has become important in the diffusion and adoption. It is less likely that mass media have a direct effect on diffusion and adoption process rather than interpersonal communication and personal influence. Mass media has a significant role in innovation dissemination. Meanwhile, personal communication is far more likely to be influential to shape individuals' decision to adopt or reject the innovations.

Despite the downgrading of mass media importance and the increasing role of personal communication in the diffusion and adoption process, the one-way mechanistic communication process remains commonly implemented. There are no significant changes of the diffusion innovation practices. It is not difficult to see the manipulative potential of many communication applications within this modernization paradigm (Mefalopulos, 2008). The adopters are treated as objects of modernization process, rather than actors of the social changes. This is an era of sender and media-centric. The communication is about something does to another and has failed to provide an adequate framework to understand the social changes. This leads to the search for a different and better vision in development practices.

While some theorists accept development as primarily the increase in production and distribution of capital, this modernization paradigm has been criticized for its ethnocentric nature, since it is about imbedding Western mechanisms and institutions in developing countries and neglecting any alternative routes to development (Melkote & Steeves, 2015; Servaes, 2020; Servaes & Malikhao, 2020). Development communities are treated as objects of the modernization process, rather than actors in the social change. This is a sender and media-centric approach. Further, this modernization approach has been criticized for being technocratic. This leads to the development of an alternative theoretical model, i.e. the dependency theory, which is rooted in a political-economic perspective. Dependency theorists emphasize the significance of the connection between communication and culture (Mefalopulos, 2008; Servaes, 2020). This theory suggests a more balanced and reasonable exchange of communication and cultural programs among developed and developing countries (Servaes, 2020). The communication process, however, remains in a linear one-way, model and loses its relevance gradually due to its failure to offer an alternative economic model as a response to modernization.

The second model of development communication is participatory model which follows the paradigm that perceives development as a change in human conditions. This model focuses on people's participation in the development (Waisbord, 2020). This participatory model is less concerned with the political-economic perspective and more embedded in the cultural aspects of development (Mefalopulos, 2008). This participatory model of development communication focuses on indigenous knowledge, participation, and empowerment

(Waisbord, 2020). There is a shift of the development focus from economic purpose to approach that embrace other social dimensions needed that ensure meaningful and sustainable impacts. Accordingly, sustainability and people's participation become core foundations of this new approach of development communication (Mefalopulos, 2008). Meaningful participation cannot transpire without communication. Participation needs to be supported by the application of interactive two-way communication principles and practices.

The participatory model emerged in part as a reaction to the underlying assumptions of the diffusion model (Morris, 2006). Participation is a concept that receives an increasing recognition and status in the development studies. Participatory approach compels a shift from seeing individuals as passive recipients to active agents of development efforts (Mefalopulos, 2008; Waisbord, 2020). As agents, individuals are capable of analyzing their own situations and developing their own solution. This shift is important to ensure that it is people's interest, not other parties' interest, which is served through the development. The essence of this model is the importance of working with communities to define their needs and to design and implement programs to fulfil these needs, rather than imposing an intervention on a community (Morris, 2006).

There are many conceptions of the term "participation" and its purpose within the context of encouraging development. Participation concept can be apprehended and practiced in different levels. Pretty, et.al. (1995) proposes different types of participation ranges from passive participation to self-mobilization, where people not only hold power to make decisions but also start the process. Another classification proposed by World Bank (Aycrigg, 1998) is developed based on its involvement level, i.e. information sharing and consultation which are considered low-level forms of participation, and collaboration and empowerment which are considered high-level forms. These types are consistent with Mefalopulos's classification (2008, p.11), which includes

"passive participation, when stakeholders attend meetings to be informed; (2) participation by consultation, when stakeholders are consulted but the decision making rests in the hands of the experts; functional participation, when stakeholders are allowed to have some input, although not necessarily from the beginning of the process and not in equal partnership; and (4) empowered participation, when relevant stakeholders take part throughout the whole cycle of the development initiative and have an equal influence on the decision-making process" (Mefalopulos, 2008, p.11).

Duraiappah, Roddy and Parry (2005) state that following functional or passive perspective, participation becomes a way of retrieving information from stakeholders to achieve an effective implementation of a project. Meanwhile, seeing from proactive perspective participation can empower less powerful groups of people to engage in decision-making and practice their democratic rights (Duraiappah, Roddy & Parry, 2005)

Participation is repeatedly related to power as well. Arnstein (1969) proposed eight levels of participation which can be categorized into three categories of participation, i.e. non participation, tokenism, and citizen power. The levels are organized in a ladder pattern following the level of citizens' power in defining the end product. The non-participation, which includes manipulation and therapy level, merely aims to enable power holders to 'educate' or 'cure' the participants" (Arnstein, 1969, p.217). In tokenism category, which includes informing and consultation, and placation level, participation aims to provide avenue for people to hear and to have a voice. Meanwhile, in the citizen power category, which includes partnership, delegated power and citizen control, participation stresses shared responsibility between citizens and power holders "joint policy boards, planning committees and mechanisms for resolving impasses" (Arnstein, 1969, p.217).

Despite of varieties in defining participation, the participatory model holds that development communication is not a vertical process of information transmission from the knowledgeable to the less knowledgeable, but rather a horizontal process of information exchange and interaction (Morris, 2006). There is a consensus on the need for grassroots participation in development and on the essential role that communication plays in promoting development. This model suggests that the purpose of development is to empower people to have greater control over decisions that affect them and, in this way, to foster social equity and democratic practices. Empowerment is complex, multi-dimensional and multi-level concept which necessitates people, groups or communities gaining control and power over their own lives in their life contexts (Martínez, Jim'énez-Morales, Mas'ó & Bernet, 2017; Yudarwati & Gregory, 2022). In line with this, the development communication is defined as "the art and science of human communication applied to the speedy transformation of a country and the mass of its people from poverty to a dynamic state of economic growth that makes possible greater social equality and the larger fulfilment of the human potential" (Srampickal, 2006, p.3). This includes participatory action for learning and sharing of powers: social (human rights and the emergence of

the civil society), economic (egalitarian society) and political (democratization), within specific cultural contexts (Srampickal, 2006).

This participatory communication is described in contrast to the more traditional diffusion model. In spite of this, Morris (2006) noted that the two are not polar opposites. The gap between these approaches is often connected by followers of both models, who intentionally or unintentionally have borrowed elements from one another. The diffusion model has grown in a participatory direction since its initial formulation, and participatory projects essentially contain some element of information transfer. The acknowledgment towards both participatory and diffusion approaches provide a shared groundwork for further understanding about development communication.

Based on this background, this article aims to discuss the communication development process in the implementation of a micro-hydro power plant (MHPP) project, a renewable energy project, conducted by Indonesia government in Kulon Progo. This article addresses the following research question from the perspective of communities, as the recipients of the government communication:

“How is the government’s communication process in the development of Micro-Hydro Power Plant (MHPP) in Kulon Progo, Indonesia?”

This article examines whether the government’s communication approach aims to encourage community participation in the project or merely diffuse the innovation for community’s adoption, or combine both approaches to achieve a sustainable development. MHPP is part of the Indonesia Government initiative towards renewable energy community to support the energy independence. While achieving more renewable resources may be a policy objective, this necessitates not only technological intervention, but also participation, support, and continuing ownership from the community. Community engagement is a significant factor in getting support from communities and achieving renewable energy goals (Urmee, 2016). Community engagement reflects collaborative working among groups of people who are connected by geographical proximity, special interest and or similar situations to address issues affecting their well-being (Yudarwati, 2019). This article, accordingly, provides a perspective on how government as the policy makers, energy developers, as well as communities, pursue communication solutions together. This study is also important because infra-structure projects are crucial to developing countries which their success depend on both by the Governments who initiate. The development and the communities who are affected by them. The study contends that this practical insight can be undertaken by incorporating values drawn from development communication, which accentuates the significance of community participation and empowerment

METHOD

A qualitative approach using exploratory case study was chosen to explore the communication process in the development of MHPP in Kedungrong Hamlet, Kulon Progo, Indonesia. This power plant project is part of the Indonesian government's plan to electrify remote rural area. The main goal of this project is to encourage rural communities to adopt and exploit MHPP. Qualitative approach is an effective methodology for exploring real life in natural situation and context bound and uses thick description about social life (Neuman, 2014). Using this approach, the researcher explored the communication development process conducted by the government and explored the communities’ experiences and opinions regarding this communication development process.

This study employed the exploratory case study method to capture the unique communication experience in Kedungrong Hamlet. A case study was chosen for this study since the phenomenon of how communication conducted by the government could not be separated from its context. The case study allows the researcher to get a comprehensive understanding of the phenomenon studied within their setting, understand it from the participants’ points of view, identify factors that influence the process and understand how those factors relate to each other (Yin, 2018). The Kedungrong Hamlet, which was chosen as the case study, was already at the sustainability stage of the project cycle of MHPP. In this stage, the community already had full authority to exploit and maintain the power plant. The power plant had been handed over to the communities, and they had full ownership and responsibility for its current and future use and development. They were therefore able to offer informed reflections of the full MHPP adoption and ownership life-cycle and the existing communication process.

Appreciative inquiry (Cooperrider, Whitney & Stavros, 2008) has been adopted to assist communities in identifying the best things they have and the best way for them to change and participate in the micro-hydro power initiatives introduced by the government. Appreciative inquiry focuses on the best things rather than problems the communities have experienced and to the discover of what could be, rather than to fix what

the problem is. This approach supports the participatory engagement, which views communities as actors rather than objects of study (Yudarwati, 2019). The storytelling approach of appreciative inquiry is also in line with an oral culture of communities. It motivates communities to engage more in the topic and helps them to uncover their experience relating to the MHPP project.

Data were collected through three focus group discussions (FGDs) with male community groups and three focus group discussions (FGDs) with female community groups. Each FGDs consists of 10 – 15 Participants (see Table 1). In rural communities, individual interviews are regarded as personally challenging, meanwhile FGDs are more acceptable because it aligns better with their collective culture. The FGDs were conducted with existing community groups' structures and was scheduled following their existing forums. In addition to the FGDs, there were individual semi-structured interviews with representatives of MHPP organisation, who is responsible for the operation of power plant and the pioneers, i.e. community members who were chosen by the hamlet leader to champion the use of the power plant and to support home industries. In respect to Indonesian culture, individual interviews were conducted conversational and undertaken in informal settings or in interviewees' homes and in the local language, thus interviewees were comfortable to speak. The interviews with them aimed to capture their experiences in exploiting the power plant and accompanying communication process.

Table 1. List of Participants

Method	Participants	
FGD	FGD 1 (household leader groups – all male)	15 participants
	FGD 2 (household leader groups – all male)	10 participants
	FGD 3 (household leader groups – all male)	12 participants
	FGD 4 (female group)	10 participants
	FGD 5 (female group)	10 participants
	FGD 6 (female group)	12 participants
Interview	Community leaders	4 participants
	MHPP Community organization	3 participants
	Pioneer of the MHPP	2 participants

All the data were transcribed and analysed using thematic analysis. Thematic analysis was conducted to identify themes and patterns according to the definitions used by participants themselves (Patton, 2014). The researcher linked the patterns to the research question and aims of the study. The conclusions can be drawn by identifying regularities, patterns, explanations, possible configurations, causal flows, and propositions (Miles, Huberman, and Saldana, 2014). Accordingly, the patterns identified helped the researcher to understand communication process in the MHPP project initiative.

RESULT AND DISCUSSION

Contextual background: Kedungrong Hamlet

There are 50 households live in Kedungrong Hamlet, who mostly rely on farming and some of them owned home industries, such as ice making, hatchery, workshop, and craft industry. All of them embrace Javanese culture. As collective communities, they have a strong community bond and togetherness. A patriarchal system within communities leads to a male-dominated power structure throughout the communities' structure. Javanese language, with its *unggah ungguh*, has a strong influence in the way they communicate with other people including with government officials, who are perceived as groups of people with a higher social structure.

In Kedungrong Hamlet, there are three key community groups in hamlet social life. The first one is *Kelompok Kerja Lembaga Pemberdayaan Masyarakat Dusun/ KKLPM* (Working Group of Dusun's Community Empowerment Institute) Forum. This is the main forum to accommodate and channel community's aspiration in developing the hamlet, planning the development of the hamlet, growing the spirit of collectiveness of the community, including the efforts to mobilise communities' participation and self-reliance. The forum is attended by household heads, most of them are men, religious leaders, women groups' leaders, farmers group representatives, and other community figures. The second group is neighbourhood group, which gathers 10-15 household heads within the hamlet, who are mostly men. This group discusses any common neighbourhood life issues, such as collective neighbourhood cleaning, neighbourhood security, and also the use of the MHPP in their neighbourhood. The third key community group is women group. At hamlet level, women are organised under *Kelompok Pembinaan Kesejahteraan Keluarga/ PKK* (Family Welfare Empowerment group), and at

neighbourhood level, they are organised under *dasawisma* group. Both groups aim to empower women in improving community's welfare. There are still other groups to facilitate communities' needs, which are farmers group, sewing group, and micro-hydro power organisation.

In running the MHPP, KKLPM and MHPP organisation take important roles. MHPP organisation was initiated by communities to support the MHPP management. Its main responsibility is to sustain the MHPP function and to manage money collected from communities. This organisation also acts as the liaison officer between the government unit at Province level, who is responsible for renewable energy initiative at province level, and the hamlet. KKLPM forum has also become the main communication channel to discuss any issues related to micro-hydro power. *Getok tular*, which is a Javanese term for word of mouth, is also another channel to share information about MHPP among communities.

Communication Process in the Development of Micro-Hydro Power Plant (MHPP)

This paper focuses on the installation and existing communication processes adjoining the development of MHPP in Kedungrong Hamlet, Kulon Progo Regency, Indonesia. The development of MHPP can be divided into five stages, i.e. pre-initiation, initiation, adoption, transition and sustainability, as shown in Table 2.

Table 2. Project Stages

PROJECT STAGES	ACTIVITIES
Stage 1: Pre-initiation	<ul style="list-style-type: none"> ▪ The PUPESDM appointed a consultant to conduct feasibility study (FS) for a particular hamlet using only secondary data. ▪ This stage aimed to assist the government obtain a picture of the potential for MHPP construction and to decide where it should be located. ▪ PUPESDM conducted socialization to inform the FS results to the targeted communities.
Stage 2: The initiation	<ul style="list-style-type: none"> ▪ PUPESDM initiated the installation of the MHPP. ▪ Three to five individual volunteers from the communities were chosen to gain technical training, so that they could maintain the MHPP on a daily basis, including undertaking simple repair activities.
Stage 3: Adoption	<ul style="list-style-type: none"> ▪ Three to five households were chosen as early adopters to the micro-hydro power. ▪ The community tried out and adopted the MHPP technology, with PUPESDM supervision. ▪ The community learned to operate and used the MHPP and its output. ▪ The community also began to expand its ambitions and usage of MHPP to support economic activities. ▪ At this stage, PUPESDM still had responsibility for the overall maintenance of the MHPP and monitored its use and performance to ensure it is adequate for the community
Stage 4: Transition	<ul style="list-style-type: none"> ▪ The community started to prepare the management and operational infrastructure to run the MHPP independently. ▪ The community created an independent MHPP organisation, who took responsibility for the MHPP management. This organisation also needed to operate independently for at least three-years before the community took the MHPP over. ▪ At the end of this stage, the government handed over responsibility for the plant and its operations to the MHPP organisation as the representative of communities.
Stage 5: Sustainability	<ul style="list-style-type: none"> ▪ The community exploited MHPP usage and strengthens community ownership so that its long-term sustainability and on-going and developing use were assured. ▪ The community had self-determination in making decisions about the MHPP.

Source: primary data

The communication process in each project stage is described as follow:

Stage 1: The Pre-Initiation

In Kedungrong Hamlet, the MHPP was firstly introduced to communities by students of one public university in Indonesia, who undertook student social service program in this hamlet. A group of electrical engineering students conducted an experiment to produce a small-scale electricity supply using water resources. Communities support the project by providing local materials, such as bamboo for building the network of public lighting, as well as workforce for building it. Although it was built with very simple tools, the community had enjoyed the benefit of the public lighting.

A further feasibility study was then conducted by a consultant appointed by PUPESDM. The study aims to explore the economic, social and environmental impacts of the project. The study, however, mostly relied on secondary data. Fieldwork was only conducted to survey the physical condition of the area to gain data to support engineering design and develop project cost, rather than to explore communities' supports, hopes, or needs. To quote participants of FGDs: "We saw some officers surveyed our river. But we did not ask what for... and they did not communicate with us either." (Participant FGD)

The only direct communication with communities during this phase was conducted during socialisation process. This socialisation process is required by local government in order to gain feedback for the feasibility study from communities. The socialisation was conducted during KKLPM meeting and attended by PUPESDM and representatives of local authorities of district, regency and village levels. To quote FGDs participants:

"The officer explained about the government plan to build MHPP in this hamlet."

"They showed us the map, thus we know the location of MHPP and the area covered by the MHPP services."

"They asked us our support to the project."

The main message distributed by PUPESDM was the plan of the government to build the MHPP in the hamlet and its benefit for the communities, rather than to invite feedback from communities. This socialisation process was merely an activity to fulfil requirement as mandated by local government, and must be included into a document of Environmental Management Effort and Environmental Monitoring Effort.

Stage 2. The Initiation

Once the operational permit to develop MHPP in Kedungrong Hamlet was released, PUPESDM informed the hamlet leader in order to gain support from the community. The installation of MHPP involved community members as paid employees and some of community members work voluntarily to support their work. To quote FGDs participants:

"Some of us who did not have jobs then became paid workers for this project"

"We, the women groups, also supported the project by cooking and providing food for workers."

While the installation was being undertaken, PUPESDM asked the hamlet leader to appoint three persons from the hamlet to attend technical MHPP training. As stated by Hamlet Leader:

"We chose three representatives who are familiar with electricity system. We also chose our community member who has background in mechanics. Their background helps them understand better about MHPP."

These three representatives were appointed through a KKLPM meeting based on their experience and background in mechanics. Further communication then came from PUPESDM with the head of Kedungrong and the technicians which mainly concerned preparing the community for the development of MHPP.

Stage 3. The Adoption

Adoption stage starts when the communities try out and adopt the MHPP technology with government supervision. "During this stage, we started to try out the MHPP to provide electricity." (Hamlet Leader). During this trial period, communication was mainly between PUPESDM and the technicians. They used mobile phones as their main communication channel with content of communication being mainly about technical aspects of the MHPP operation and its regular maintenance. There some expectations and concerns addressed by communities during the FGDs:

“There was insufficient information on how to maintain the MHPP equipment and insufficient technical training on how to fix the machine when there were broken parts.”

“We, want to get information on how to manage the MHPP organisation and on how to optimise the use of the MHPP in the future. Thus, we could benefit from its potential.”

“We, the women’s groups also want to have direct information to and from PUPESDM and to be involved in discussions about the MHPP. We do not want to hear it from our husband.”

During this adoption stage PUPESDM also asked the hamlet leader to choose five community representatives who run home industries such as carpentry, egg farming and a mechanical workshop, to be pioneers to demonstrate the benefits. Gradually, the number of households who were connecting to MHPP increased. The community understood the benefits of the MHPP:

“This reduced our electricity costs and power basic home appliances”.

”This has increased our productive activities, not only during the day, but when it was dark. “Street lighting in Kedungrong makes us feel secure when we have evening activities and need to travel at night.”

The initiative to form an MHPP organisation came from a KKLPM meeting, when the community realised that they needed to manage the operation. The main duty of this organisation is monitoring the usage of MHPP and its maintenance, as well as managing the money collected as fees from their community. The community also noted that the maintenance of MHPP requires certain skills and knowledge so not anyone can give support.

Stage 4. The Transition

This stage aims to prepare communities before the MHPP is handed over to the communities. To quote FGDs participants:

“The MHPP has been installed in our hamlet, we need more skills to manage its usage and maintenance.”

“we need to think how we get funding in case the MHPP is broken and we need to fix it.”

“We can build a home industry using electricity access from MHPP, but we need more funding to buy the equipment”

In this stage, however, there were no significant efforts to improve the skills of the communities, neither the MHPP organisation, that enabled them to maintain and exploit the MHPP further. Communication in this stage was therefore, about maintaining the routine operational management of MHPP, but there were no further discussions at the KKLPM meeting on how to expand the utilization of MHPP.

Stage 5. The Sustainability

The sustainability stage starts after the MHPP is handed over to the community. According to the PUPESDM, the MHPP has been handed over to the community through the village leader as the village representative. In spite of this, the communities still perceived that the MHPP was still part of the government’s responsibility. Regardless this unclear ownership status, communities’ leaders as well as MHP organisation stated that they were not ready yet to manage MHP independently due to lack of managerial and technical skills as well as financial ability. To quote the FGDs participants:

“If the infrastructure was fully handed over to us without any supports from local government, we cannot afford it... It is very expensive.”

“We still want PUPESDM’s support to cover this MHPP expenses.”

In spite of this, since formally the MHPP has been handed over to the community, PUPESDM cannot provide an allocated budget and support. The communities should manage the MHPP independently.

This paper aims to discuss the communication development process in the implementation of a MHPP project, a renewable energy project, conducted by Indonesia government. The findings show that project development is divided into five stages, pre-initiation, initiation, adoption, transition and sustainability. Compared to the diffusion and adoption process, this project cycle is comparable to the five stages of the diffusion and adoption process (Rogers, 2003). The first stage of diffusion and adoption model (Rogers, 2003)

indicates that the development process is initiated through the exposure to the new idea, having understanding of it and how it works. The individuals have not been inspired to find more information about the innovation. This stage is often facilitated by mass media, which make people aware of the existence of the innovation informed. In the case of Kedungrong Hamlet, mass media did not have a significant role to introduce the innovation to the communities. They have already been introduced to the innovation, i.e. MHPP, by a group of students who did an experiment to develop a small-scale micro-hydro power. The communities not only gained initial knowledge about MHPP but also started to experience the benefit of this innovation. This should be a valuable capital for the government, who then decided to conduct the feasibility studies to obtain a picture of the potential for MHPP construction in this hamlet. This can become the stage to map communities' social networks and assess participatory potential from them. The findings, however, show that the feasibility study mostly relied on secondary data and lack of direct interaction with communities.

The only communities' involvement during this stage was during socialisation process. This socialisation process, however, was merely an activity to fulfil requirement as mandated by the government rather than to gain feedback from communities. The process was mainly one-way communication process from the government to the communities informing the results of feasibility study. This community's involvement is passive. Passive participation positions communities as receivers of information from the government, does not expect feedback from neither negotiation with them, and is largely tokenistic (Arnstein, 1969; Pretty, Gujit, Thompson, & Scoones, 1995). Such communication approach significantly limits the opportunities for communities to actively participate in the project or contribute to its development. Meanwhile, communication for development requires active support, involvement, and participation from communities. Prior involvement would provide opportunities for communities to build awareness, develop their willingness to participate and begin to envisage a new future. This initial involvement can serve as the communities' investment in the project and they will have a tendency to support and sustain the development projects.

In the initiation stage, the government informed communities about the MHPP implementation plan and started the installation process of the MHPP. This is the stage in which the government needs to gain support from the communities, such as a support in the installation process of MHPP. The innovation, i.e. MHPP, has become more obvious to the communities. They begin to build their attitudes towards the innovation. Referring to diffusion model (Rogers, 2003), this stage needs persuasion approach to shape the attitude of communities to the innovation. They can be interested in the innovation and seek details information about it. Communication, accordingly, should not only aims to persuade them but also enable them to be more knowledgeable and involved in the development project. The finding, however, shows that there was not sufficient information from the government to communities. Communication was mainly about the installation process and technical aspects of MHPP. The orientation of development project here tends to be 'program done for communities' rather than 'program done with and or led by communities' (United Nations Development Programme et al, 2016). The communication is at the informing stage: "we tell you what is happening and what to do" (Yudarwati & Gregory, 2022). Communication becomes an organisational delivery system, which is in line with the project approach (Melkote & Steeves, 2015).

Good participative communication is not just about the government informing communities so that it can achieve its own goals, but allows communities to set their own goals. This is a process of dialogue through which people define who they are, what they want and how they can get it (Morris, 2006)". Co-ownership in setting goals and development plans will secure a sustainable process with significant outcomes and long-term impact. This study found that top-down communication resulted in limited participation, but when they engaged with the hamlet communities in thinking through the potential that electricity brought, horizons and ambitions were considerably expanded. By actively engaging communities from the start and by seeking a broader consensus around development initiatives, many conflicts and obstacles can be prevented. Moreover, genuine participation increases the sense of project ownership by communities and further enhancing its sustainability (Yudarwati & Gregory, 2022).

In the adoption stage, the government conducted trial process. There were five households who were chosen and assisted by the government to exploit the usage of MHPP. The trial process should not only aim to identify technical problems and provide solution or adjustment needed to make sure the plant works well, but also to enable communities try out the innovation, assess its advantages and or disadvantages of using the innovation, and decide whether to adopt or reject the innovation (Rogers, 2003). This trial process allows communities to get valid information on how to access it and get experienced of the MHP plant's benefits. This process helps community to gain direct experiences. Knowledge requires a practical value to help community gain a better understanding. Only when communities know how to make use of this knowledge combined with their local knowledge and values as well as meaningful direct experiences, there will be a capability to act as part of social learning (Kulundu, 2014; Laininen, 2019). The five households become the early adopters, from

whom other communities can get details about the innovation. This study shows the power of personal communication among communities in shaping communities' behaviour towards innovation and indicates the two-step flow of communication. In addition, it is important to identify key actors within communities to gain acceptance and active participation from communities (Urmee, 2016). To get critical support from the communities, the government also needs to identify suitable community members in decision-making and target group.

During this trial period, the communication should enable communities to build consensus and strengthen their supports towards innovation. Communication is also more effective when using local language and communities' knowledge that are more culturally proximate to the communities. Local wisdom and social capital are vital knowledge that are essential to determining the feasibility of development projects and are frequently taken into account to avoid mistakes in project design and to ensure project's sustainability (Parahita, 2018). Oral communication is more dominant in the rural communities in Indonesia. Face to face meetings and *getok tular* (word of mouth) are their main communication channels. Local language is also commonly used in their daily conversation. *Gotong royong* (collective working) and customary practice of consensus decision making, called *musyawarah mufakat* (deliberation and consensus) are local customs that mostly work well in solving communities' issues. These culturally and locally approaches can be used, for example, to spread information and explain about MHPP that is considered as a highly technology using languages that can be easily understood and accepted by communities. In essence, recognising culture as a supportive factor rather than as a barrier to support positive change, combined with identifying local solutions within communities are essential elements of sound development communication strategies.

In the transition stage, the communication should prepare communities to have adequate capability to take over the MHPP. Even though the MHPP has been handed over to the community, this study found a lack of preparation program from the government. Meanwhile, the communities felt that they were not ready to manage the MHPP independently. Similarly, in the sustainability stages, the communities cannot exploit the MHPP further, due to the lack of capability and knowledge. Meanwhile, in the development project, the communities should be the main actors of the development, not the government as the initiator of the development program.

What the findings found was the dominant communication to support the local government to achieve the renewable energy target rather than to encourage community's participation. The one-way directional diffusion model is more dominant compared to the participatory model of communication. The process applies a mechanistic approach that prioritises technological change (Parahita, 2018) with communication is practiced as a complementary element. Nevertheless, there is no rejection from the community towards the project. This may be due to community's value of *amanah* (integrity) practiced by Muslims, Indonesia's largest religious group (Ratriyana, Setiawan & Yudarwati, 2021). When communities are introduced to a development project, they perceive it as accepting an *amanah* from the government which need to be embraced and implemented. This is part of local wisdom of the community that can be used as an initial entrance to engage and gain from the communities. Nevertheless, this should not be used to exploit the communities due to power imbalance.

The one-way directional communication model still can contribute in this development process for informing the innovation and persuading communities to adopt the innovation. However, development communication should empower the communities to own and become the main actors of the development itself. Empowerment here is not only at the personal level, in which individuals gain self-confidence and improve their self-esteem to make decision and become active participants in project activities; but also at the community level, in which communities become empowered and they have access to information and participate as decision makers (Yudarwati & Gregory, 2022). The use of local language and incorporate local values in engaging communities can support effort to empower communities (Parahita, 2018). Accordingly, understanding social and cultural factors is particularly vital when considering the context of empowerment.

This study contends that meaningful changes for community requires participation that facilitates the creation of understanding that is grounded in cultural meanings and everyday understandings of communities (Dutta, Jayan & Elers, 2021). Community participation can support government to comprehend problems that is experienced by communities and propose solutions that are significant to the communities. Participatory communication can facilitate this process through dialogue for sharing information, perceptions and opinions among the various stakeholders. This aims to empower those who are most marginalized and vulnerable. This enables stakeholder interaction that is both active and horizontal. The process emphasizes the importance of cultural identity of local communities as well as participation at all levels (Servaes & Malikhao, 2020). There is a need for mainstreaming communication for development that supports the structural transformation in rural areas and to open more opportunities for communities to actively involved as agents in the development

initiatives (Balit & Acunzo, 2020). Participatory communication is not just the exchange of information and experiences, but also the exploration and generation of new knowledge towards better situations.

Further, participation is never free from power issues (Carpentier, 2016; Waisbord, 2020). Equal power relationships between organizations and publics is unlikely happen when hierarchy, castes, or inequality are socially and culturally accepted (Kent & Taylor, 2018). Referring to ladder of participation developed by Arnstein (1969), this study found that the communication process is considered as non-participation category under manipulation and therapy level. The communication does not lead to participate in planning or conducting programs, but rather provides avenue for power holders to "educate" or "cure" the participants (Arnstein, 1969). Even though the communities already aware about the MHPP before the government formally initiated its development in the community, the government is still considered as a power holder whose aims are introducing MHP to cure electricity and energy problem in the villages.

CONCLUSIONS

This paper examines the communication development process in the implementation of a MHPP project, conducted by Indonesia government. The top-down nature of the MHPP project, in which the government provides a technological intervention to the community, affects the communication strategy. In this top-down type project, the diffusion innovation approach is more dominant. This reflects 'the project approach', which is the common mode of operations in development that is characterized by specific activities designed to address and solve a specific problem or set of problems. Development is managed and operated in a business-like manner and following the development project cycle. This approach is still dominant since this is considered as a more reliable approach and feasible to fulfil the interests of major decision makers as the initiator of development. Communication, when included, is often considered in the implementation phase, very seldom considered in the project formulation and almost never in the identification of the needs. The success of the process is measured by the implementation of the project, rather than how and what the communities feel and expect about the project. There is hardly an emphasis on participation, or that participation is only tacked on for the project image but not integrated into the overall design. The communication process is thus one-directional. The government played the key role in the design and communication of the project while selected community members only become implementers without any ability to provide feedback. There is only limited possibility for active and horizontal communication between community and government.

Finally, this study contends the influence of power relations that lead to the development communication model. The cultural norms and hierarchies of power, however, should not be perceived as threats in achieving development goals. Instead, they should be encompassed, as they shape individual and community behaviours that promote communication outcomes. Transfer of knowledge and participatory approach that acknowledge local values will likely empower communities and build ownership towards the project. The structure of communication process, accordingly, should be resulted from co-creation process between government and communities.

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