

Environmental communication strategy against deep-sea tailings disposal in Morowali

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ABSTRACT

Environmental communication movement against Deep-Sea Tailings Placement (DSTP) permit for nickel mine waste of Indonesia Morowali Industrial Park (IMIP) skyrockets in response of DSTP issue. One example of the Non-Government Organization that pushed this movement is Jaringan Advokasi Tambang (JATAM), especially JATAM Sulteng. This movement is crucial considering the increase of nickel mining operations due of electronics demand, either for transportation or telecommunication purposes. From our initial observations, we concluded that this movement stands on discourse management of nickel mining, waste mangement and its effects to the environment. Thus, this study was done to discern what environmental communication strategy JATAM Sulteng choose to disseminate informations on the effects of nickel mining and processing of IMIP which also included on how they pushed the movement against DSTP on Morowali sea. This study was done through qualitative descriptive – case study approach. Data were collected through observation on publications, in-depth interview with three informants from JATAM Sulteng and document study. The results shows that the main stratagem choosen was to push the discourse of environmental degradation due to DSTP. The environmental degradation was then connected to the livelihood of the communities surrounding the mine and coastal communities adjacent to the DSTP sites. Supporting strategies for information dissemination also included focus group discussion (FGD), various critical essays, fact sheets and organizational press releases through official websites, mass media and social media, natural resources discussion forums, demonstrations and submission of petitions to the government and nickel extractive industry investors.

Keywords: Environmental communication strategy; discourse management; rejecting deep-sea tailing placement; jatam sulteng; environmental communication movement

Strategi komunikasi lingkungan penolakan pembuangan limbah tailing dasar laut di Morowali

ABSTRAK

Gerakan komunikasi lingkungan yang menolak pemberian izin pembuangan limbah tailing dasar laut hasil aktivitas pertambangan nikel Indonesia Morowali Industrial Park (IMIP) meningkat tajam seiring dengan maraknya isu tersebut. Salah satu organisasi yang menyerukan gerakan ini adalah Jaringan Advokasi Tambang (JATAM), khususnya JATAM Sulteng. Gerakan ini dinilai penting, karena dengan meningkatnya permintaan perangkat elektronik, baik yang digunakan untuk teknologi transportasi maupun telekomunikasi, maka meningkat pula aktivitas pertambangan nikel untuk memenuhi permintaan tersebut. Dari hasil observasi awal, peneliti melihat bahwa satu poin yang menonjol terkait gerakan ini adalah pengelolaan wacana terkait penambangan nikel dan dampaknya terhadap lingkungan, terutama pada dampak pengelolaan limbah. Maka dari itu, penelitian ini dilakukan untuk meninjau bagaimana strategi komunikasi lingkungan yang dilakukan JATAM Sulteng dalam menyebarkan informasi tentang dampak dari proses pertambangan dan pengolahan hasil tambang di IMIP, khususnya informasi yang mendorong terlaksananya penentangan pembuangan limbah tailing dasar laut di Morowali. Penelitian ini dilakukan dengan menggunakan pendekatan deskriptif kualitatif - studi kasus. Data dikumpulkan melalui observasi, wawancara mendalam dengan tiga informan dari JATAM Sulteng dan studi dokumen. Hasil penelitian menunjukkan bahwa strategi yang digunakan adalah dengan mendorong wacana kerusakan lingkungan dikarenakan pembuangan limbah tailing bawah laut yang berdampak pada keberlangsungan masyarakat Morowali di sekitar lokasi tambang dan pesisir pantai yang berdekatan langsung dengan situs pembuangan limbah tailing. Strategi diseminasi informasi juga dilakukan melalui focus group discussion (FGD), tulisan kritis, publikasi fakta melalui situs resmi, media massa dan media sosial, membuka ruang diskusi, demonstrasi dan pengiriman petisi terhadap pemerintah dan perusahaan penambang nikel.

Kata-kata kunci: Strategi komunikasi lingkungan; pengelolaan wacana; penolakan pembuangan limbah tailing; JATAM Sulteng; gerakan komunikasi lingkungan

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Submitted: August 2023, **Revised:** April 2024, **Accepted:** April 2024, **Published:** April 2024

ISSN: 2548-3242 (printed), ISSN: 2549-0079 (online). Website: <http://jurnal.unpad.ac.id/manajemen-komunikasi>

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INTRODUCTION

Environmental communication can be defined as the pragmatic (consists of verbal and nonverbal modes of interaction that convey an instrumental purpose) and constitutive (entails verbal and nonverbal modes of interaction that shape, orient, and negotiate meaning, values, and relationships) vehicle for our understanding of the environment as well as our relationships with the natural world and as a symbolic medium that we use in constructing environmental mental problems and in negotiating society's different responses (Pezzullo & Cox, 2018). As such, environmental communication has three main points: (1) communication between humans as a symbolic action; (2) creation of knowledge, beliefs, values, choices, attitudes, and behaviour in dealing with the environment; and (3) public spheres as space that accommodates a variety of scattered environmental communication messages. Thus, environmental communication has two principles: pragmatic, because it consists of verbal and nonverbal modes of interaction that convey an instrumental purpose which in turn greets, informs, demands, promises, requests, educates, alerts, persuades, rejects, and more; and constitutive. After all, it involves verbal and nonverbal modes of interaction that shape, orient, and negotiate meanings, values, and relationships which in turn invites a particular

perspective, evokes certain beliefs and feelings, fosters particular ways of relating to others, and thus creates palpable feelings that may move us (Cox & Depoe, 2015; Pezzullo & Cox, 2018).

Communication plays a crucial role in efforts to protect and save the environment because messages and names not only direct perspectives, but also determine actions, treatment, and relationships between humans and the natural environment (Pezzullo & Cox, 2018). The relationship between the media and related socio-cultural encouragement which then forms the understanding, opinion, and belief of the community or the public to take action also introduces media framing (Liu & Liu, 2022; Mulyani et al., 2024; Palma & Alcaíno, 2020). The increasingly fragmented realms of media and politics make framing even more important in efforts to overcome the ecological crisis through education to collective action (Burgess & Harrison, 1998; Hansen, 2011; Hird, 2017; Lehotský et al., 2019; Nisbet & Newman, 2015; Yang & Wang, 2021).

Environmental communication is present as an effort to raise awareness of all parties in managing the environment (Cox & Depoe, 2015; Hansen, 2011; Hurlbert et al., 2023; Kpienbaareh et al., 2021; Nisbet & Newman, 2015; Onn & Woodley, 2014). Participation is realized, one of which can be grown through communication because starting from the

elements, the media and the process aim to foster the participation of all parties in managing the sea area to avoid pollution. In other words, environmental communication is a pragmatic and constructive medium for raising awareness and participation of all parties in managing and preventing environmental damage (Chien et al., 2021; Liu & Liu, 2022; Lyytimäki et al., 2021; Maimour et al., 2024; Nisbet & Newman, 2015; Pezzullo & Cox, 2018; Pilgun et al., 2021).

Environmental communication can apply a wide array of media. For example, Anam, Kolopaking & Kinseng's study on social movements against the Jakarta Bay reclamation project showed that social media plays an important role in disseminating information to a wider audience to strengthen the impact of the social-environmental movements by increasing the participation and support rate (Anam et al., 2020). Another study by Lehotský et al. in the Czech Republic discussed the factor regarding public support for decarbonization, media content, the issue of phasing out coal as an energy source, and the cultivation of a discursive environment in which coal mining is separated from coal combustion (Lehotský et al., 2019). On a similar note, environmental communication can also be used to mislead people to think that a product or process is environmentally friendly which in turn creates a new issue called greenwashing. In Torelli,

Balluchi and Lazzini's study regarding the effects of greenwashing and environmental communication to stakeholders, we can see the different levels of impact in different types of greenwashing scandals, especially on the perception of corporate social responsibility (Torelli et al., 2020).

In recent years, nickel has become increasingly popular as the recent issue of the climate crisis developed (Fukuzawa, 2012; Gauthier et al., 2021; Guohua et al., 2021; Hipfinger et al., 2022). Nickel is a key component of lithium-ion battery cells, which are used in some electronic devices (Tang et al., 2021), thus the demand for nickel is increasing rapidly as the popularity of electric vehicles increases due to the vehicles being environmentally friendly compared to vehicles that used fossil fuel (Goetzel & Hasanuzzaman, 2022; Li et al., 2022; Olabi et al., 2022; Zheng et al., 2022). To meet this need, it is necessary to explore areas with large nickel potential, one of which is in Morowali.

Nickel mining in Morowali is spread over several areas, including the Bahodopi, East Bungku, West Bungku and Coastal Bungku areas. Since 2014 in Bahodopi District, an integrated nickel-based industrial area has been established which manages ore mining, nickel processing and production of nickel, stainless steel and carbon steel. Its supporting facilities

range from coal power plants; processing plants for manganese, silicon, chrome, lime, and coke; lithium battery production; special transportation terminals; homesteads; high schools; and health facilities. The industrial estate, known as PT. IMIP (Indonesia Morowali Industrial Park), is a joint venture between Shanghai Decent Investment Ltd., PT. Sulawesi Mining Investment and PT. Bintang Delapan Mineral (IMIP, n.d.; Lampe, 2021; Lampe et al., 2019; Yean & Negara, 2020). The industrial area covers 2.000 ha of the area as per the 2020 environmental permit for expansion. By 2021 the number of employees at the company has reached 40.000 people, 4.500 of which are from China. Through the years, the number is quite impactful, considering Morowali Regency has an area of 3.037 square kilometres and a population of 176.244 with a population growth rate of 5.03% as of 2022 (BPS Kabupaten Morowali, 2023).

The industrial area development of IMIP attracted many investors, for example, Contemporary Amperex Technology (CATL) and Zhejiang Huayou Cobalt. The two investors each have companies operating in the IMIP which are PT. QMB New Energy Materials and PT. Huayue Nickel & Cobalt started smelter construction in 2019. Wahana Lingkungan Hidup Indonesia (WALHI), one of the Indonesian forums for the environment, noted

that PT. HPI planned to dispose of 25.300.000 tons of tailings into the sea annually, with a tailings disposal pipe covering 396,9 hectares of area located in the sea area of Fatufia Village (Lampe et al., 2019; Masrikal, 2021). Thus, the efforts of several companies to obtain a permit to dispose of waste in the seabed have become a hot topic of discussion from various parties, both in the community around Bahodopi and environmentalists in Central Sulawesi (Iswinarno & Tanjung, 2020; JATAM, 2020b; Masrikal, 2021; Redaksi Kaili Post, 2020).

While some actors may argue for the regularization and formalization of easier waste disposal may invite more investors and create more mining operations which in turn became a major source of regional and national income and direct and indirect employment for hundreds and thousands of worker to come, various negative social, cultural and environmental impacts accompany the development of this industrial area including farmers, cultivators and fishermen. The potential for social conflict due to the arrival of migrants also increased both from various parts of Indonesia (Camba, 2021a; Lampe, 2021; Lampe et al., 2019). On the note of environmental impact, any damage caused by the mining process is considered a violation of the law as referred to in Law Number 32 of 2009 concerning Environmental Protection and Management. Environmental damage in

question is a direct or indirect change to the physical, chemical and biological characteristics of the environment (Undang-Undang (UU) No. 32 Tahun 2009 Tentang Perlindungan Dan Pengelolaan Lingkungan Hidup, 2009).

The main issue in Morowali, however, is the more environmentally destructive seabed tailings disposal. Submarine tailings disposal or Deep-Sea Tailings Placement (DSTP), is a form of dumping the remains of mining materials in the form of mud or slurry through pipes into the seabed (Ramirez-Llodra et al., 2015; Stauber et al., 2022). Although DSTP is a common practice in coastal and offshore mining operations, DSTP requires high resource allocation to map geological and hydrodynamics conditions to find suitable locations for tailings disposal with minimum impact on the ecology. If not done correctly, DSTP has high environmental implications due to the toxicity and environmentally destructive nature of the tailings waste (Mestre et al., 2017; Ramirez-Llodra et al., 2015, 2022; Stauber et al., 2022). In Indonesia, The waste was defined as a material that is discarded from a source resulting from human activities or natural processes. Tailings specifically, is residual material in an activity and/or production process which if it exceeds the threshold value, it can harm the surrounding environment. Thus, tailings waste is included in the Hazardous and Toxic Waste classification

(*Bahan Berbahaya dan Beracun*, abbreviated as B3) (Peraturan Pemerintah (PP) No. 22 Tahun 2021 Tentang Penyelenggaraan Perlindungan Dan Pengelolaan Lingkungan Hidup, 2021).

In this context, the tailings disposal issue is relatively sensitive as it is considered inefficient and environmentally destructive waste handling (Beylot et al., 2022; Chen et al., 2023; Williams, 2023). Although in the IMIP case, from our initial observations, there were a series of rejections were made by the Morowali communities, especially coastal communities, when the tailings disposal is still in the permit applications phase. The same thing was conveyed by Taufik Madja, a community leader in Bahodopi, Morowali, that this project will harm the lives of coastal communities, especially small-scale or traditional fishermen whose lives are dependent on marine resources in local waters (JATAM, 2020; JATAM Sulteng, 2020; Redaksi Kaili Post, 2020).

Considering the immense impact on the environment and public attention, one element of the Non-Governmental Organization (NGO) that is actively involved in discussing this discourse is the *Jaringan Advokasi Tambang Sulawesi Tengah* (JATAM Sulteng). To provide awareness and concern for the effects of the mining industry that are continuously occurring, JATAM Sulteng started environmental communication movements which could later be

identified as an environmental communication activity. Thus, this study focuses, describes and explores how environmental communication activity was done regarding the issue of sea-bed tailings disposal.

In conjunction with environmental communication and submarine tailings disposal as the main issue of this study, we also need to explain the concept of tailings. Tailings are waste produced from the process of grinding and extracting ore. Tailings occur because no process is 100% efficient so material that is not recovered or uneconomical will be wasted in the form of slurry (Beylot et al., 2022; Fitton & Seddon, 2013; Williams, 2023). These tailings usually consist of uneconomical metals, minerals, chemicals, organic matter and water discharged from processing (Beylot et al., 2022; Fitton & Seddon, 2013; Williams, 2023). Although tailings disposal can be environmentally destructive, there is a lot of research that discussed other applications and or more environmentally friendly waste management for tailings (Brown, 2019; Kumar et al., 2021; Magdalena et al., 2023; Saldanha et al., 2023; Schatzmayr Welp Sá et al., 2022; M. Wang et al., 2022).

The mining industry are related to many aspects of the sustainable development goals (SDGs). For example, mining industry is publicly debated to be tied to environmental

sustainability which is correlated to SDG #6, #7, #13 and #15; social inclusion which is related to SDG #1, #5, #10, and #16; and economic development which is related to SDG #8, #9, and #12 (Agusdinata et al., 2023; Alves et al., 2021; Amirmokhtar Radi & Shokouhyar, 2021; Ballestar et al., 2020). Thus, in short, the discourse of mining and waste disposal specifically is generally categorized into two general discourse, one narrative focuses on the economic impact from providing jobs to raw materials to regional wealth or income and the other focuses more on critical towards mining operations by spotlighting the harmful effects such as impacts, accident, and risk on the environment and social sphere (Hird, 2017; Lyytimäki et al., 2021; Maimour et al., 2024). Those aforementioned discourse of mining and waste disposal also reflects and shapes public opinion regarding DSTP in Morowali. Based on the introduction above, this study aims to explore and describe the discourse against DSTP with two primary questions: What is JATAM Sulteng's environmental communication strategy against DSTP in Morowali?; and how is JATAM Sulteng achieve said communication strategy?

RESEARCH METHOD

This study uses a descriptive-qualitative and case study approach related to environmental

communication regarding the rejection of submarine tailings disposal in Morowali. We decided to use this approach considering this research approach can be used to obtain in-depth data (Rakhmat, 2005; Yusuf, 2017). The focus of this study is the environmental communication strategy of JATAM Sulteng regarding the issue of DSTP in Morowali. This focus also includes how JATAM Sulteng manage the discourse of environmental degradation and its effects to the communities. Thus, to aid us in describing, categorizing and explaining the collected data, we refer our thought process to the three main points of environmental communication: (1) communication between humans as a symbolic action; (2) creation of knowledge, beliefs, values, choices, attitudes, and behaviour in dealing with the environment; and (3) public spheres as space that accommodates a variety of scattered environmental communication messages (Cox & Depoe, 2015; Pezzullo & Cox, 2018).

Subjects in this study were determined based on non-probability method using purposive sampling referring on certain considerations. In this study, we establish three primary considerations to filter out the informant candidates: the informant has direct involvement in the environmental communication movement against DSTP; the informant is an internal stakeholder and has

direct involvement with JATAM Sulteng; and the informant is knowledgeable regarding the JATAM Sulteng structure and the environmental services. The three chosen informants who met the aforementioned criteria are Moh. Taufik (Author and Executive Director of JATAM Sulteng), Ramadhani (Research and Database Executive of JATAM Sulteng), and Susanti Idris (Education and Networking Executive of JATAM Sulteng).

Primary data were obtained by observation, in-depth interviews with the three informants from JATAM Sulteng, and document study. Observations were used to collect data in an active and selective process on matters related to JATAM Sulteng's environmental communications regarding the rejection of DSTP in Morowali without actively participating in the said process. Observation is also used to understand and determine not only how JATAM Sulteng pushed the discourse on the media but also how the informants feel on certain subjects and how JATAM Sulteng interacts with the communities. Primary objects of the observation including the published materials such as JATAM's sites and social media, how the informant behaves while interviewed, and how JATAM Sulteng interact with the impacted communities. Both data categories collected through observations and in-depth interviews are considered primary data. Secondary data were

obtained from document study on the report and archived draft, idea and goal map, campaign reports and other unpublished materials from JATAM Sulteng and also published journals and other literature deemed relevant for this study.

The collected data were categorized into several groups: media observations, interaction observations, interviews talking points, and supplementary documents. Then we condense or reduce the data from said groups to obtain and understand the main points of each data entry on each groups. The condensed data then displayed and compared to each other for verification. Then we analyze the data, draw conclusion and verifying it with existing concepts and research results from other published studies. The process of data analysis is carried out interactively and continuously in accordance to Interactive Analysis Model of Miles & Huberman to achieve completion and data saturation (Miles et al., 2014).

RESULTS AND DISCUSSION

Based on JATAM data, around 8.588 mining business permits were granted to around 44% of Indonesia's land area, totalling 93,36 million hectares area or about four times the area of East Kalimantan and North Kalimantan Provinces. These permits have had a major impact on human rights and the environment. At the end of 2020, JATAM reported that 45

mining conflicts occurred, and 22 cases were cases of pollution and environmental damage. In addition, the effects of the presence of the nickel industrial area are destructive which result in ecological disasters that occur every year (Camba, 2021b; Camba et al., 2020; Hudayana et al., 2020; Jaringan Advokasi Tambang, 2020; Lampe, 2021). JATAM Sulteng stated that the government should start restoring both mined and waste disposal areas to stop the expansion of destruction into the sea area as a result of the presence of extractive industries (Jaringan Advokasi Tambang, 2020).

Based on data for 2020 that we gather from various sources, the number of Mining Business Permits (*Izin Usaha Pertambangan*, abbreviated as IUP), especially Nickel minerals, is spread across Morowali Regency as many as 40 IUPs, North Morowali as many as 30 IUPs and Banggai Regency as many as 21 IUPs. Then, there are about 20 smelters spread across eight regions in Central Sulawesi, including PT. Indonesia Guang Ching Nickel and Stainless Steel Industry; PT. Tsingshan Nickel Iron Indonesia; PT. Tsingshan Billiton Stainless Steel; PT. Indonesia Ruipu Nickel Chrome Alloy; PT. Indonesia Tsingshan Stainless Steel (Kementerian Energi dan Sumber Daya Mineral, 2022; Komisi VII DPR-RI, 2020). Some investors who want or are currently building a smelter in IMIP and some of them applied for

DSTP permits. Nickel processing companies that have applied for the permit include PT. QMB New Energy Materials; PT. Sulawesi Cahaya Mineral; and PT. Huayue Nickel Cobalt (JATAM, 2020b; JATAM Sulteng, 2020).

JATAM resistance on DSTP was based on the example of DSTP in other places that not only affected nature but also social environment. As quoted from the interview with Moh. Taufik and Ramadhani below:

JATAM's response to why this rejection was chosen is based on the fact that there are already examples of how tailings impact humans in Buyat Bay, North Sulawesi. DSTP would displace the community from their village and the impact would be huge. They now experience diseases uncommonly occurred, and some have lost their livelihoods (interview with Moh. Taufik, 14th June, 2022).

Tailings are dangerous based on our experience so far. We can take the example of Freeport in Papua, precisely the Ajkwa River. The flow ends up in the sea and pollution runs along the river to the sea. The poorest tribes affected by the tailings, namely the tribe that lives along the river. This practice should not be repeated in Morowali. There are concrete examples that these tailings are dangerous and damage the ecosystem (interview with Ramadhani 16th June, 2022).

From the interviews with Moh. Taufik and Ramadhani, we found out that the main underlying issue used as the basis of the rejection is the impact of DSTP on environmental and social conditions. In the environmental aspect, the impact was the damage to the ecosystem, as they both bring forth the damage in Freeport

and Ajkwa River's case as an example as past studies showed (Fajri et al., 2012; Paull et al., 2006). The increase in environmental damage cases ranging from minor to serious stages in Indonesia is the result of the accumulation of environmental damage over a relatively long period. Various factors cause environmental damage, ranging from individual behaviour to larger but environmentally destructive profit-seeking. Interconnected with the environmental aspect, the damage to the ecosystem will also affect the livelihood of the coastal communities, most of which are dependent on marine resources which aspect also strengthened by the findings of past studies (Burritt & Christ, 2018; McKinnon, 2002; Seftyana et al., 2020).

When we asked both Moh. Taufik on how views the positive impacts of the existence of mining operations in Morowali, he stated that socio-environment sustainability needs to be the main concern during the active period as quoted:

I understand that the investment on nickel and other raw materials is important as it generates income for the region, but there has to be a limit. For example, 30-50 years active investment limit. But each operator from raw material mining to processing needs to prioritize the sustainability for the environment and surrounding areas. We don't want what happened in other mining sites also happens here. That would be dreadful for the upcoming generations (interview with Moh. Taufik, 14th June, 2022)

Ramadhani also added on the issue as

quoted:

...investment on mining operations can also increase our regional income, sure, but the operators have to have commitment to environmental sustainability because it will affect the communities in Morowali long term (interview with Ramadhani 16th June, 2022).

The three informants agreed and stated that everyone in JATAM Sulteng and NGOs collaborated with JATAM Sulterng are aware to both positive and negative consequences of mineral processing investments. But the three of them also stated that the majority of the data presented to the community and other external stakeholders often shows only the positive side of said investments. While the negative aspects of it often are glossed over or omitted entirely. This leads to imbalance in understanding the positive and negative consequences.

Moh. Taufik and Ramadhani both also stated that each community has its own values, norms and ethics as a civil society. Different with urbanized community which often indirectly connected with the surrounding geological environment, rural area community is directly connected to it. Thus, they argued that a massive change in the environment will also massively change the community's values, norms and ethics. For them, NGOs exists as a check and balance that monitors not only the mining operators of IMIP in this instance but also the regional government of Central Sulawesi.

NGOs also can be used to help the community to pressure the government. This collaboration impose a significant amount of political power. The example of the application of this political power was the withholding of PT. HPI's permit for DSTP. PT. HPI's permit for DSTP was initially withdrawn due to the lack of space for waste disposal according to the Coastal and Small Islands Zoning Plan (*Rencana Wilayah Pesisir dan Pulau-Pulau Kecil* or abbreviated as RZWP3K), but planned to reapply because the government still giving mining operators chances for DSTP. But the permit was held after the government were pressed by both the NGO itself but also the community through the NGO.

The movements against the discourse on DSTP in Morowali were accompanied by several demonstrations from March 2020 to the end of December 2021. The demonstrations were carried out in several related government institutions. One of the movements incited by JATAM Sulteng to communicate the environmental impact related to DSTP in Morowali was the petition submitted to the Central Sulawesi provincial government. Through this petition, they hoped that it can communicate the need for more environmentally friendly waste management and alleviate the impact on the coastal communities in Morowali, because unfit policies implemented by the government may results in ecological disastrous

events. As quoted from the interview with Moh.

Taufik and Ramadhani below:

We did a few direct confrontation. For example we petitioned Chinese investors through Chinese ambassador while we attend the biodiversity protection activity as a part of the United Nations Biodiversity Conference in Kunming, China. We also petitioned both regional government and regional house of representatives (*Dewan Perwakilan Rakyat Daerah* or abbreviated as DPRD) on December of 2021 (interview with Moh. Taufik, 14th June, 2022).

...because we did a few confrontation like the act of protest or demonstration. We also petitioned the governor of Central Sulawesi in 28th December 2021, asking not to give any permit or recommendation for the mining operators to use sea bed as tailings disposal location (interview with Ramadhani 16th June, 2022).

Susanti Idris, the Education and Networking Executive of JATAM Sulteng, (interviewed on 21st June 2022) explained that

...There are collaboration with other NGOs such as AEER and KIARA. We also form local network between NGOs to mobilize the community (interview with Susanti Idris 21st June, 2022).

When asked further, she explained that other than demonstrations and petitions, the mobilized mass were also educated using environmental campaigns, both which also disseminated through social media and websites, along with the collaboration with other NGOs. She further explained that since the beginning of this discourse, JATAM Sulteng was the first to voice its rejection of DSTP in Morowali. Starting from the aforementioned

actions, in the next action JATAM Sulteng collaborated with other environmental NGOs and the Morowali communities represented by students through the Student Youth Association Morowali (*Ikatan Pemuda Pelajar Mahasiswa Morowali* or IP2MM). The platform for this collaboration is called the Morowali Ocean Care Alliance or *Aliansi Peduli Laut Morowali* (APL-Morowali). The alliance consists of several organizations including JATAM Sulteng, *Yayasan Tanah Merdeka* (YTM), *Ikatan Pemuda Pelajar Mahasiswa Morowali* (IP2MM), *Pemuda Pelajar Mahasiswa Morowali Utara* (IP2MMU), *Aksi Ekologi dan Ekonomi Kerakyatan* (AEER), *Koalisi Rakyat Untuk Keadilan Perikanan* (KIARA), Student Executive Board of Muhammadiyah University of Palu, *Forum Pengawasan Pembangunan Indonesia* (FPPI), Central Sulawesi Legal Aid Institute or *Lembaga Bantuan Hukum* (LBH) of Central Sulawesi, *Sekolah Hijau Indonesia* (SHI) of Central Sulawesi, and other student organizations.

One of the demonstrations by APL-Morowali was carried out at the Central Sulawesi Provincial Office for Fisheries and Maritime Affairs on 2nd July 2020. The demonstration was received by the Head of the office, Arif Latjuba. During the demonstration, Arif Latjuba stated that the provincial government was ready to accommodate the aspirations that

had been voiced during the action and become material for joint study (Sulteng Raya, 2020). The environmental communication movements carried out by JATAM Sulteng have become quite effective control for several cases, ranging from the issue of mining in protected forests and mineral, oil and gas sector corporations conducting exploration and exploitation in Morowali (Lampe, 2015; Lampe et al., 2019; Silamba et al., 2015; Siombo, 2014).

The increasing cases of environmental degradation in Indonesia, from small-scale to large-scale and critical degradation, is the accumulation of long term environmental damage and exploitation. The small cases of environmental damage such as littering can also become large scale if done by large amounts of people accumulated in a long term, while profit seekers who exploited the nature can do it in a fraction of a time. As explained, environmental communication exists to incite understanding in environmental issues. The participation on environmental communication in a large scale

involve many communicator and audiences using different kinds of media and information process. From the interview with Susanti Idris, we can see that JATAM Sulteng collaborate with other NGOs in managing the public opinion against DSTP. From said interview, we also identify, compile and categorize what discourse were used, what channels were utilized, who the actors were, and the impact of the conducted environmental communication against DSTP in Morowali in Table 1.

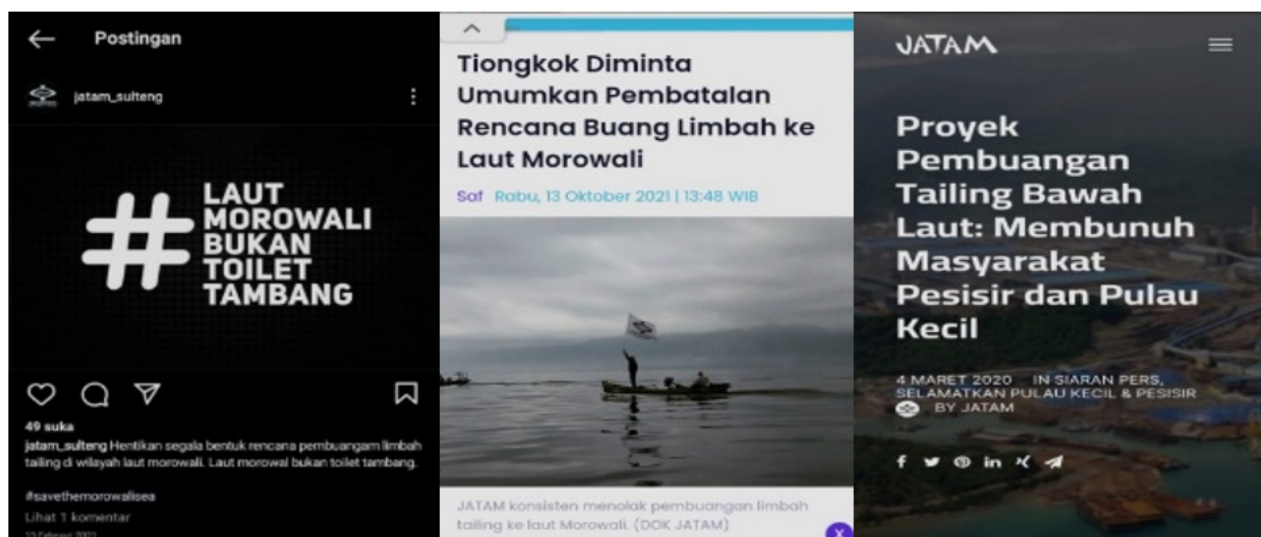
The informants agreed that mass media is crucial for informing and educating others of the environmental crisis. Because they stated that for providing education for the communities and advocating the community, the need a means to spread the information widely and quickly, both internally and externally.

The mass media has a very important role, especially in today's technology-based era where quick delivery of information is a necessity. As such, mass media often used by JATAM Sulteng to disseminate environmental

Table 1 Categorization of the environmental communications discourse, actors and the impacts

Problem	Issue	Media	Actor	Impact
DSTP permit application in Morowali	Impact on fisherman livelihoods	Mass media	IP2MM	Petition against DSTP directed
	Impact on biodiversity	Social media	IP2MMU	towards provincial governments and
	Environmental and social impact	Petition and critical essays	KIARA	the corporations
	comparable to Buyat Bay	Demonstrations	AEER	PT. HPI draws back the DSTP permit
		FGD	YTM	
			SHI	
			LBH ST	

Source: Processed data, 2022



Source: JATAM, 2020a; @jatam_sulteng, n.d.; Saf, 2021

Figure 1 Compilation of media campaign against DSTP

communication. Through the official websites of JATAM Nasional and JATAM Sulteng as well as official accounts on various social media such as Facebook, Twitter and Instagram, information in the form of text, and audiovisuals regarding the discourse on DSTP is spread. The emphasis on the use of the public sphere, in the form of mass media, accommodates a variety of environmental communication messages (Dispensa & Brulle, 2003; Fan et al., 2020; Hansen, 2011; Nisbet & Newman, 2015; Pezzullo & Cox, 2018; Zhang & Zhong, 2020).

The use of the hashtag #lautmorowalibukantolettambang in each post against DSTP is one of the symbols that is expected to attract the attention of every reader on JATAM Sulteng's social media timeline as an effort to raise awareness of DSTP and its social and environmental impact. The use of symbols in these posts is a form of persuasion

that actively creates certain understandings and meanings related to the environment (Cox & Depoe, 2015; Dispensa & Brulle, 2003; Pezzullo & Cox, 2018; Zhang & Zhong, 2020).

Environmental aspects that are closely related to the interest in protecting biodiversity are considered to be incompatible with economic aspects originating from the production of mining products. Not only that, but sustainability also involves social aspects which, as is well known, have not been widely discussed. Concern for the environment in both development and preservation is not only through saving, preserving and managing the environment. However, concern for the environment can also be done through the dissemination of information and news through the media (Anam et al., 2020; Hansen, 2011; Lehotský et al., 2019; Nisbet & Newman, 2015; Schoenberger, 2016; Yang & Wang, 2021).

The demands include cancelling the discourse on DSTP by several mining corporations and guaranteeing corporate and government commitments to prioritize aspects of sustainability. Although one of the companies, PT. Huaa Pioneer Indonesia (PT HPI), cancelled their request for DSTP due to insufficient space allocated for DSTP in the Central Sulawesi Regional Regulation No. 10 of 2017 (Perda Provinsi Sulawesi Tengah Nomor 10 Tahun 2017 Tentang Rencana Zonasi Wilayah Pesisir Dan Pulau-Pulau Kecil Provinsi Sulawesi Tengah Tahun 2017-2037, 2017). However, the government still has several regulations which open opportunities for corporations to continue disposing of mining waste into the sea.

JATAM Sulteng environmental communication is also carried out in various discussion forums, both at the internal and external levels. This discussion forum opens the prospect to share concerns and attitudes towards resources and

environmental issues. The implementation of discussion forums, and focus group discussions (FGD) specifically, is in line with the pragmatic function of environmental communication which is to greet, inform, demand, promise, request, educate, warn, persuade, refuse, and many more (Pezzullo & Cox, 2018).

It should be underlined that NGOs, civil society coalitions, and other organizations and communities are important to support the process of experience sharing, expertise, insights and even new approaches as a follow-up to the implementation of efforts to tackle the climate crisis inclusively and collaboratively. All forms of activities that involve individuals, NGOs and other institutions in a wide network are actualized in collective action and aim to gain benefits for the environment and become an environmental movement. Thus, this wide community-based collaboration is formed based on consensus, to deal with certain issues, is voluntary, and there are no legal sanctions or

Table 2 Application and comparison to environmental communication indicators

Environmental Communication	Application
(1) communication between humans as a symbolic action	Using hashtag #lautmorowalibukantolettambang to symbolize the idea to reject DSTP
(2) creation of knowledge, beliefs, values, choices, attitudes, and behaviour in dealing with the environment	Focus group discussion, environmental degradation and livelihood information dissemination and understanding
(3) public spheres as space that accommodates a variety of scattered environmental communication messages	Anti DSTP discourse dissemination through mass media

Source: Processed data, 2022



Source: JATAM Sulteng archive, 2022

Figure 2. Focus group discussion with the community

binding regulations concurred as the constitutive function of environmental communication (Pezzullo & Cox, 2018).

The environmental communication strategy implemented by JATAM Sulteng is not only communicating sustainability and create collaboration in the community regarding the environment, but also for the mining operators, government and any other stakeholders to realize a sustainable environment. Negligence and incomprehension of said matter will result in over exploiting the nature and forgoing sustainability. Concerns on the environment in regard of utilization of nature and preservation of nature can be achieved not only by saving, preserving and utilizing geological environment on where a person lives, but also can be raised by

information spread using the media. The goal of this environmental communication movement is to make the communities understand and further educate them that environmental exploitation en masse not only will give them work opportunity but also will create environmental crisis that will directly impacted them. As emphasized by Moh. Taufik as the closing statement he made during interview as quoted:

We incite this movement primarily due to the environmental degradation crisis in Morowali which resulting in annual flooding. We have enough of this. Enough with the destruction of our land in the name of investment for the better future, don't expand it to our beloved sea (interview with Moh. Taufik, 14th June, 2022).

Environmental communication in the form of direct education, environmental campaigns through the media, environmental advocacy,

dissemination of environmental facts, banners, billboards, and posters as well as persuasive efforts aimed at changing actions, generating new understanding or building public awareness, inviting all the public to care about environmental issues about the environment, not only for the issue for DSTP in Morowali but also for other environmental issue in other parts of the world (Ha et al., 2023; Junsheng et al., 2019; Kleinberga et al., 2023; Sampei & Aoyagi-Usui, 2009; J. Wang & Zhou, 2021; Yenrizal, 2017).

Environmental communication directed at the community is given to educate the public about tailings waste, the impact they will feel, influence actions and generate new knowledge about the mining industry. It is hoped that the environmental communication that is routinely carried out by JATAM Sulteng will have an effect on community actions and understanding regarding the adverse effects of DSTP as well as warning mining corporations to utilize more environmentally friendly waste management.

CONCLUSION

Based on the results of research we concluded that environmental communication exists to protect and preserve both the environment and the affected communities. In the issue against DSTP in Morowali, JATAM Sulteng as an environmental NGO firmly

rejects this discourse. The rejection was based on previous cases of environmental damage as a result of policy products that were not in favour of protecting the environment, corporations that were only concerned with profit, ecological disasters that occurred as a result of natural resource exploration and exploitation, as well as local impacts in the form of poverty among coastal communities, especially fishing communities. The larger impact on the environment can be seen in the coral reefs in the Morowali Sea area as a carbon sink and the world's coral triangle. The rejection was channelled through various environmental communication efforts such as demonstrations, campaigns, and active critical essays through various communication platforms such as mass media, social media and the official website of JATAM Sulteng and submission of petitions and letters of protest to the government and investment investors.

The JATAM Sulteng's environmental communication strategy against DSTP is mainly divided into two categories: direct pressure to mining operators on IMIP by using direct confrontation, critical essays published on several media, and pressuring the Central Sulawesi government as external stakeholders of the mining operations not to give permission for DSTP; and indirect pressure by inciting impacted communities surrounding the mining

area and coastal communities adjacent to DSTP sites which was achieved by managing the discourse between environmental degradation issue and community livelihood issue and spreading information load to other NGOs to create wider peer pressure against DSTP.

We have several recommendations based on our finding. First, although the information was widely disseminated through mass media, it's was not enough to incite interest of the wider public in addition to the lack of publication in more widely-known media. This in turn made the environmental communication movement not gaining traction and create chain reactions and not gaining enough momentum and mass to significantly pressure against DSTP. Second, while by utilizing the discourse of environmental degradation and livelihood to direct the opinion of the communities surrounding the nickel mining and DSTP sites was considered enough by JATAM Sulteng, it creates a gap with the wider audiences who are not directly impacted by said issues. Third, while managing relations with the Central Sulawesi government can be beneficial to hold back the permit for DSTP, a pressure from higher governmental bodies is still needed. Thus, JATAM Sulteng should not just rely on JATAM relations with the Indonesian governmental bodies but also needs to manage their relations with the Indonesian Governmental bodies. For future studies, we also

recommend taking on a more focused approach in less discussed parts in this study such as the engagement and response of the social media users regarding this topic, or the survivability of the communities going forward. Because, although in this study we observe the interaction between JATAM Sulteng and the communities and the initial response in the media following the campaign published by JATAM Sulteng, we lack long term observations on social media users regarding this issue considering we also were limited by the chosen method of this study.

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