Communicating Science to South Central Mindanao's Indigenous Cultural Communities-in-Transition: Challenges and Opportunities

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"The general objective of an effective science communication is to re-construct a climate of reciprocal knowledge and trust between science and society and establishing an authentically open and not just cosmetic dialogue with the public." – Giovanni Carrada

Introduction

Making science intellectually accessible is important in fostering greater understanding among people coming from diverse backgrounds and contexts. In this study, I investigated how Sagittarius Mines, Inc. (SMI), a local mineral development company with majority foreign ownership, communicates science and negotiates meanings with the *Blaan* indigenous cultural communities (ICCs) living within its project area and how the *Blaan* ICCs engage and negotiate meanings with SMI. My investigation of science communication practice is in the context of an impending development-driven change courtesy of a large-scale mineral development project, the Tampakan Copper Gold Project (TCGP).

I used W. Barnett Pearce and Vernon Cronen's (1999) Coordinated Management of Meaning (CMM) Theory. The theory's basic proposition is that "persons-in-conversations co-construct their own social realities and are simultaneously shaped by the worlds they create." For the CMM proponents, "organizations, families and individuals are deeply-textured clusters of persons-in-conversation." They argued that "there is an afterlife to conversations and the social interactions people make at present influence the social reality of the future" (Griffin, 2013). I shall deal with this later in the discussion section of my paper.

I have written this paper from the perspective of an information professional and a development communications practitioner, using information and insights drawn from my experience working as a third party documenter of the key community consultation/project disclosure activities of SMI.

I begin with a brief background on SMI and its flagship initiative, the TCGP. I then proceed to outline the different regulatory requirements, both local and international, that SMI seeks to comply with and provide a background on the project area and the indigenous peoples (IPs) and the indigenous cultural communities (ICCs) that will be impacted by the project.

In the succeeding sections of my paper, I will rationalize the need for science communication and discuss SMI's science communication practice. I would like to underscore that my focus is on the process, limited only to those that I have personally

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observed or have been involved in. My intention is to surface how a well-planned science communication program can provide platforms for gaining full understanding of an extractive development project's impacts on ICCs.

Research Objectives

In writing this paper, my objectives were:

1. to find out how science is being communicated to the affected indigenous cultural communities by a mineral development company;
2. to determine whether these processes contribute to an understanding of science and how science contributes to/impacts on indigenous cultural communities;
3. to explore whether current approaches for science communication are aligned with and adhere to relevant provisions of regulatory documents such as the Philippine Constitution, the Indigenous People's Rights Act (IPRA), the Philippine Mining Act of 1995 (Republic Act No. 7942), the Local Government Code of the Philippines (Republic Act No. 7160), the International Council on Mining and Metals (ICMM) Principle 04, and the International Finance Corporation Performance Standard No. 5; and,
4. to document the challenges and opportunities for science communication for community development in the Philippines.

Not much has been written in this field, at least in the libraries and information centers in Southern Mindanao that I have visited. Online, a run over Google also revealed a dearth of studies investigating the science communication practice of extractive industries, particularly in the Philippines. This may partly be attributed to the nature of business information mineral development companies hold which are mostly proprietary, and therefore, prohibits public disclosure.

One related study worthy of citing, however, is that of Ronilda Co (2008) which investigated the implementation of the Free, Prior Informed Consent (FPIC) process for two ICCs namely: the Mamanwas of Taganito and Urbiztondo of Claver, Surigao del Norte and the Manobos of Rosario, Agusan del Sur, both from Mindanao. Her findings showed that the concerned mining companies framed their messages on the financial benefits of the project to cut short the mandatory FPIC process.

It is not my intention to discuss FPIC implementation. Studies of FPIC implementation are more extensive compared with studies on science communication practice.

Through this study, I hope to contribute to this dearth in literature. I also hope that science communication programs will finally be accorded its due place in the hierarchy of priority and mandatory processes, particularly for extractive industries who engage ICCs and whose projects will entail significant environmental and physical alterations and cultural and psycho-social impacts.

I also hope that this study will facilitate recognition of the need for documenting, collating and communicating best practices in science communication and will feed into improving not only policy but more importantly, practice and set a benchmark for science communication to the public.

Methodology

My study is a one-shot case study on SMI. I utilized the descriptive-qualitative approach, specifically, participant observation in building a case. I used information and insights that are largely drawn from my experience.

For Bernard (2002), participant observation as one of the qualitative research methods, is both a "humanistic and scientific method." It surfaces "experiential knowledge which allows researchers to write from the gut." Participant observation permits "better data collection and better data analysis."

In order for me to access other proprietary information relevant to my study, I entered into a *Memorandum of Agreement* with SMI through its Manager for Mindanao Operations, Mr. Jonathan F. Joson. This allowed me to access documents that I needed to generate insights into SMI's science communication practice.

I have also coordinated with Ms. Myra C. Altobano, SMI's Stakeholder Engagement Superintendent, for other information that will address data gaps in my study. Ms. Altobano worked for a long time in SMI's Communication Department.

Findings and Discussion

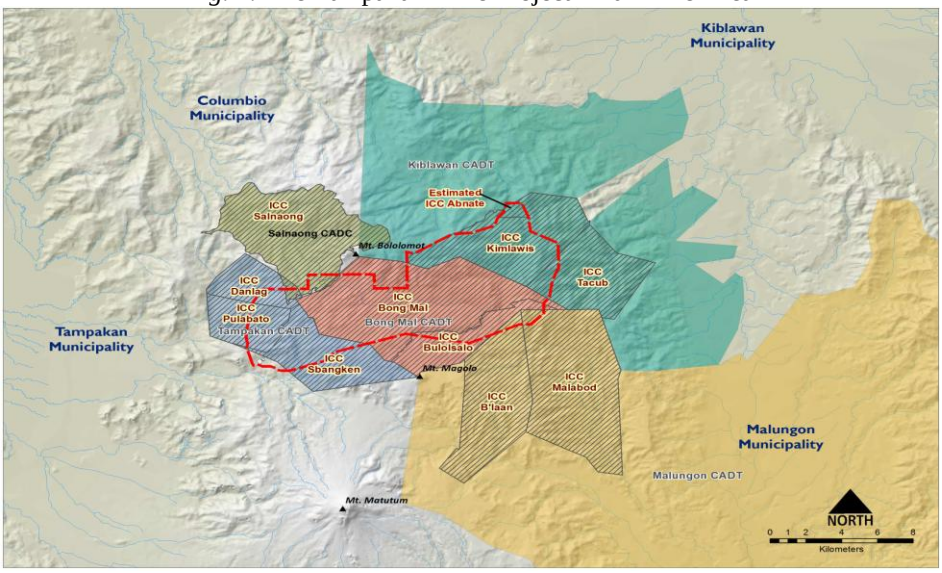
Sagittarius Mines

Sagittarius Mines, Inc., is a mineral development company. It entered into a Financial and Technical Assistance Agreement (FTAA) with the Philippine government to develop the TCGP. The FTAA is one of the mining rights under *Republic Act No. 7942* or the *Philippine Mining Act of 1995*, which permits large-scale exploration, development and utilization of minerals with a term of 25 years and renewable for another 25 years.

SMI is currently managed by Glencore plc, a global diversified mining group with a reputable track record in sustainable development practices.

SMI's TCGP traverses four Philippine provinces: South Cotabato, Sultan Kudarat, Sarangani, and Davao Del Sur, Philippines (Fig. 1). It could potentially be the largest mine in the Philippines and may be the 6th in the world when it becomes operational (SMI, 2014).

Fig. 1: The Tampakan Mine Project Final Mine Area



The Tampakan Copper Gold Project

The TCGP is one of the largest undeveloped copper-gold deposits in the world. Over the 17-year mine life, it is projected to generate total taxes and royalty revenues to the Philippine national government, local government units and indigenous cultural communities amounting to 7.2 billion US dollars or 310 billion pesos.

Specifically for Mindanao, this mining project translates into unprecedented opportunities for regional growth and development, and could mean greater opportunities for project stakeholders, including the traditionally-marginalized *Blaan* indigenous cultural communities to access education, health and livelihood programs and services.

The history of the TCGP can be traced back to the discovery of the resource in 1994. The following year (1995), the Philippine government and SMI entered into a Financial and Technical Assistance Agreement. A series of exploration, drilling, environmental and technical studies were undertaken from 1995 to 2009 in compliance with regulatory requirements. The resource drilling program was completed in 2010 and the world-class copper-gold deposit was confirmed (SMI, 2014)

Several studies were undertaken to determine and exhibit the technical, environmental and financial viability of the project. Among these were the Mining Project Feasibility Study, the Environmental and Social Impact Assessment (ESIA), and Assessment of the Potential Economic Benefits of the Tampakan Mine, all of which were completed and submitted to the Philippine government (SMI, 2014).

SMI is currently in a critical phase of social licensing and has been heavily engaging the *Blaan* ICCs within the project area.

There had been extensive public consultations and disclosure activities of the Mine Environmental Impact Statement (EIS) in the 2nd half of 2011.

Beginning 2012, SMI ran a series of Resettlement consultations. The objectives were to scope resettlement-relevant data and generate feedback from community leaders and members. The inputs generated from these consultations will inform the development of the Resettlement Action Plan (SMI, 2014).

Also in 2012, SMI engaged relevant project stakeholders for a series of Social Impact Management Plan (SIMP) consultations. The objective was to gather the views/feedback from key stakeholders on proposed approaches to managing the Project's benefits and impacts. The outcomes of this engagement will inform the further development of the SIMP and SMI's current community development interventions.

Beginning the second quarter of 2014, SMI resumed its FPIC engagement activities. The Free Prior Informed Consent (FPIC) process is a mandatory requirement for projects that will affect ICCs and indigenous peoples (IPs). The objective is to generate IP consent as one of the mandatory approvals other than resolving key Project issues by the national government for the Project moving towards the construction phase.

I was involved in the documentation of all these key processes, except for the Mine EIA.

The project will affect eleven (11) *Blaan* indigenous cultural communities within the project footprint (SMI, 2014). The *Blaans* belong to one of the non-Muslim indigenous peoples of Mindanao, Philippines.

Table 1: Blaan ICCs within SMI's Project Footprint

Province	Municipality	Barangay	ICCs
South Cotabato	Tampakan	Tablu	Sbangken
		Pulabato	Pulabato
		Danleg	Danleg
Sultan Kudarat	Columbio	Salnaong	Datalbiao
Sarangani	Malungon	Malabod	Malabod
		Blaan	Blaan
Davao del Sur	Kiblawan	Kimlawis	Kimlawis
			Tacub
			Abnate
			Bong Mal
		Bulolsalo	Bulolsalo

Source: SMI (2014). FPIC Implementation Plan

The focus of my study is science communication for indigenous cultural communities. For this paper, I used the 1997 Indigenous People's Rights Act (IPRA) definition of ICCs as:

> A group of people of homogenous societies identified by self-ascription or ascription by others, who have continuously lived as organized community

> on communally bounded or defined territory and, who have, under claims of ownership since time immemorial, occupied, possessed and utilized such territories, sharing common bonds of language, customs and traditions and other distinctive cultural traits, or who have through resistance to political, social, and cultural inroads of colonization, non-indigenous religions and cultures, became historically differentiated from the majority of Filipinos. The ICC/IPs shall likewise include peoples who are regarded as indigenous on account of their descent from the populations which inhabited the country, at the time of conquest or colonization, or at the time of inroads of non-indigenous religions and cultures, or the establishment of present state boundaries, who retain some or all of their own social, economic, cultural, and political institutions, but who may have been displaced from their traditional domains or who may have resettled outside their ancestral domains (Chapter II, Sec. 3, h).

The Project's Regulatory Environment

Philippine's Regulatory Requirements

The rights of the IPs/ICCs are enshrined in no less than the 1987 Philippine Constitution. Specific provisions include:

> The State recognizes and promotes the rights of indigenous cultural communities within the framework of national unity and development (Section 22 of Article II).

> The State shall recognize, respect and protect the rights of indigenous cultural communities to preserve and develop their cultures, traditions and institutions. It shall consider these rights in the formulation of national plans and policies (Section 17, Article XIV).

On March 3, 1995, *Republic Act 7943*, or more popularly known as the *Mining Act of the Philippines* was passed into law. This led to the revitalization of the mining industry in the Philippines. During the time of Philippine President Gloria Macapagal-Arroyo, foreign investments in mining were identified as a driver for economic development.

In 1997, the Philippine government enacted the *Republic Act 8371*, otherwise known as the *Indigenous People's Rights Act (IPRA)*. The IPRA is considered a landmark legislation which recognizes the IPs four bundles of rights, namely: (1) right to ancestral domains and lands, (2) right to self-governance and empowerment, (3) social justice and human rights, and (4) cultural integrity. Respect for IP rights is articulated in Sec. 3g, to wit:

> The consensus of all members of the ICCs/IPs to be determined in accordance with their respective customary laws and practices, free from any external manipulation, interference, coercion, and obtained after fully

> disclosing the intent and scope of the activity, in a language and process understandable to the community.

On July 2004, in its 22nd Session, the Commission on Human Rights Sub-Commission on the Promotion and Protection of Human Rights Working Group on Indigenous peoples re-echoed support for the FPIC process:

> Free, prior and informed consent recognizes indigenous peoples' inherent and prior rights to their lands and resources and respects their legitimate authority to require that third parties enter into an equal and respectful relationship with them, based on the principle of informed consent.

International Standards and Best Practices

SMI, through its managing shareholder Glencore, also seeks to comply with the *International Council on Mining and Metals' (ICMM's) Position Statement on Mining and Indigenous Peoples.* In all its undertakings, it endeavors to identify and understand the interests and perspectives of indigenous peoples and to employ processes in a fair, timely, and culturally-appropriate manner (SMI, 2014).

It also adopts the principles set out in the *International Finance Corporation's (IFC's) Performance Standard 5 (PS5),* one of the eight (8) performance standards within the IFC sustainability framework. *PS5* deals with Land Acquisition and Involuntary Resettlement and requires that where the acquisition or resettlement process affects indigenous peoples, the provisions of the *IFC's Performance Standard 7 (PS7)* on Indigenous Peoples applies.

SMI is guided by the *United Nations Declaration on the Rights of Indigenous Peoples*, the *World Bank's Operational Policy 4.10 for Indigenous Peoples*, and the provisions of the *International Labour Organization (ILO) Convention 169 on Indigenous and Tribal People*, although chiefly the responsibility of member governments of the ILO, that guides companies as "organs of society" to, among others, develop coordinated and systematic action to protect the rights of indigenous and tribal peoples (SMI, 2014).

All of these explicitly require respect for ICCs rights and imply that (science) communication is one of the critical processes that will exhibit respect for these rights.

Rationalizing Science Communication

Science communication, more than simplifying scientific information such as it can be understood, is "communicating science as a human activity, engaging in dialogues on science issues and its impact on society" (Castillo, n.d.; Librero, 2006).

In the succeeding paragraphs, I will discuss the importance of science communication for an industry whose processes rely heavily on science and technology.

I have stated earlier that my study is anchored on Pearce's (1999) Coordinated Management of Meaning Theory. One of its practical applications is dialogic communication, a process "in which people can speak in a manner that makes others want to listen, and listen in a way that makes others want to speak." The process, therefore, promotes reciprocal understanding (Griffin, 2013).

The CMM Theory supports the public understanding of science model which puts premium on engaging the public in a dialogue that will surface multiple voices and where community members become evaluators and decision makers (Bubela, 2009; Carrada, 2006).

My position is that science communication is a social accountability. For the *Blaan* ICCs, in particular, it is critical to social continuity. More than compliance to local and international requirements, science communication should not be a one-way information dissemination process but one that provides parties opportunities to negotiate meanings through dialogue.

I acknowledge that this can be challenging for developing countries like the Philippines. As a nation, our interest and appreciation for science is relatively low compared with our neighboring Asian countries (Castillo, n.d; Librero, 2006; Pertierra, 2005). We have limited resources and capacities to undertake, much more institutionalize, science communication. In many instances, science communication hardly translates to the fulfillment of the parties' mutual desire to understand and be understood.

Carraga (2006) articulated the relationship between science and society and the need for science communication rather accurately:

> One aspect of communication which is often neglected, is that information is never exchanged in abstract terms, but within the relationship between the speaker and the listener, in which the emotional factor highly influences the ability to recognize, evaluate, and possibly even retain the information presented….The quality of communication depends greatly on the quality of the relationship which is built with the audience and the quality of communication depends on the quality of relationship which is established with the audience.

The Challenge of Engaging the Blaan ICCs of the TGCP

The *Blaans* of the TCGP are individuals and communities-in-transition. As ICCs as a whole and as individual IPs, they need to gain full understanding of the Project that will alter their lives drastically. They need to understand how the project intends to proceed with the development of a mine where ore containing copper and gold will be extracted and processed into concentrates. They also need to be able to quantify what a projected yield of 375,000 tons per annum of copper and 360,000 ounces per annum of gold in concentrate during the 17-year operating mine life means, especially because these units of measure are outside the realm of their experience (SMI, 2014).

Major mine components like the open pit, the concentrator, the Waste Rock Storage Facility, the Tailings Storage Facility and the Freshwater Dam, ore and waste rock conveyors, Mine Ancillary Facility, a TSF Ancillary Facility, water treatment plants and other support facilities will be built (SMI, 2014). The *Blaans* need to understand where these mine infrastructures and facilities will figure in the wider scheme of things. The project's sheer size challenges human comprehension and rationalizes the need for collective understanding.

Community consultation as a mechanism for continuing consent and support generation is a statutory provision which is clearly outlined by the *Indigenous Peoples Rights Acts (IPRA)* with the National Commission on Indigenous Peoples (NCIP) as the government agency facilitating the process. Critical to the process of social licensing is the need to ensure that the intentions of any development project, including its directions are communicated to the communities it will directly and indirectly impact on. The role of science communication is, therefore, critical to both the company and the community.

But what makes for good science communication?

Goh (2008) outlines a number of criteria: the need for information distillation or synthesis, and visualization and context.

Synthesizing information in bits and pieces makes science information more intellectually accessible. Science uses terminologies that are complex and some words have no direct translation. Communication requires that such specialized language be converted to a shared language in order to be understood.

Visualization is equally-important. Visuals make the audiences see the *who's, why's where's, what's* and *how's* of the data being presented and provides the audiences the opportunity to access meanings. Visuals are an effective tool for communicating messages that texts are constrained from conveying and assist in narrating stories.

The need for context is also critical. The public needs to understand the context of the information being communicated.

For the *Blaans*, in particular, synthesis, visualization, and context are critical. They are not only communities-in-transition who need understand mining and its processes, they also need to make sense of an environment that is about to change and a way of life that about to be transformed.

Science communication, I argue, should go beyond generating consent. Providing venues for understanding their context would allow the ICCs to understand better the true nature of what is happening to them as communities, and allow them to chart and navigate their own future (Varona, 2006).

SMI's Science Communication Practice

The succeeding section of my paper discusses in greater detail Sagittarius Mines' science communication practice. I have earlier indicated that I am a third party information professional documenting some of SMI's key project disclosure activities, among them the 2011 Institutional Briefings for Resettlement, 2011 Mine Environmental Impact Assessment and the 2012-13 Social Impact Management Plan (SIMP) Consultations, and currently, the implementation of the Mine FPIC process. I reiterate that these are observations from the perspective of a communications development practitioner.

SMI engages multi-dialect communities. The project area has a mix of *Blaan, Visayan, Ilonggo, and Ilocano* population and other ethnolinguistic groups. The former, the *Blaans*, belong to one of the non-Muslim indigenous cultural communities in Southern Mindanao whose adult and elderly population are predominantly unschooled. Literacy level is low and this poses challenges. Science communication, therefore, requires a pool of educated *Blaan* community members participating in the process.

Science Communication Using Visuals

I have observed that all of SMI's science communication begins with carefully laid out Stakeholder Engagement and Communication Plans. These plans are informed by inputs and insights drawn from similar but smaller stakeholder engagement processes carried out in between the key processes (SIMP, Mine EIA). These plans lay the groundwork for the succeeding communication sub-processes:

- *Development of Presentation Materials*. Presentation materials in English are drafted and submitted for internal review and validation to both the SMI management and relevant Community Affairs and Environment Department staff. Revisions based on comments and feedbacks are incorporated into succeeding versions until the presentation materials are firmed up. These are then submitted for management approval and sign off. The approved versions of the presentations are then translated to Visayan, the language commonly understood by both the project proponent and the *Blaan* ICCs. SMI commissions a third party service provider for these translations.

  Draft Visayan versions are pre-tested with ICC members and are again submitted for review by the SMI management and staff and are revised and finalized based on comments and feedbacks prior to management approval and sign off.

- *Preparation of Presentation Scripts.* In order to ensure consistency in the communication of key messages, presentation scripts in English are drafted, submitted for internal review by the SMI management and staff, revised and finalized based on comments and feedbacks. In many instances, the final versions are first submitted for comment by the National Commission for Indigenous Peoples (NCIP), the Mines and Geosciences Bureau (MGB) before these are sent for translation to Visayan by a third party service provider.

  Draft Visayan presentation scripts are again submitted for internal review by the SMI management and staff, finalized and submitted for management sign off and approval. It

must be noted that some of SMI staff doing the reviews and validations are themselves Blaans.

- *Scale Models*. Apart from the well-thought out presentation materials, the use of scale models are a critical component of science communication by SMI. The scale model provides the *Blaan* ICCs the opportunity to visualize the mining process, how the final mining area will look like, and where mine facilities will be built.

Fig. 1: Scale Model of the TCGP

Fig. 2: A scientist explains the scale model to the ICCs

For the ICCs, the scale model provides for a more concrete mental picture of how the landscape of their ancestral domain will considerably be altered in the event project development progresses. In essence, allows them to peek into their environment's altered face and their redefined spaces.

- *Video Clips/Presentations*. Video clips/presentations of existing mine projects are also presented to assist the *Blaan* ICCs in gaining full understanding of the process. These supplement both presentation materials and the scale model.

Mediating Meanings through Words

SMI employs communication and stakeholder engagement processes that are culturally-appropriate and compliant with local and international regulatory requirements and standards of best practice.

Science communication is undertaken by a pool of both local and international experts, with support from relevant regulatory government agencies.

Dry runs or mock-presentations are done prior to actual project disclosures or community consultations. These activities provide presenters opportunity to rehearse and receive constructive feedbacks that will improve the delivery of the presentations, such as when there is a need to adjust the language, or when another medium for communicating is needed to ensure clarity and comprehensibility.

In most instances, SMI assembles its team of scientists to either assist the community development staff during project presentations as technical resource or they do the presentations themselves.

SMI's pool of presenters is a mix of SMI managers, Community Affairs, Project Development, and Environment Department staff. In some instances, SMI engages experts from relevant government agencies such as the Department of Environment and Natural Resources (DENR), the Mines and Geosciences Bureaus (MGB) and the National Commission for Indigenous Peoples (NCIP) for technical support.

Presentations follow a prescribed template containing key messages and are pre-tested prior to actual use. Necessary adjustments are made depending on stakeholder group consulted.

The presentations include, at a minimum, discussions on the (a) general and specific objectives of the activity, (b) principles, (c) project-relevant information and (d) way forward activities.

In most cases, presenters were *Blaans* or presentations were delivered in mixed Blaan-Visayan languages.

In all of the SMI disclosure and consultation activities that I have observed, the *Blaans* and non-IP members of the community were given opportunities to articulate their concerns on SMI's presentations, principles, and position.

Creative Learning Spaces

One of SMI's communication tools worthy of citing is SMI's mobile Community Information and Resource Center (mCIRC), a hi-tech learning space which was brought to the different municipalities and barangays in the project Area.

In February 2011, it won the Anvil Award of Excellence Public Relations Tools - Exhibition Category by the Public Relations Society of the Philippines (PRSP), the oldest award-giving body in the Philippines in the field of public relations.

The mCIRC was an effective communication tool during the Mine EIA process.

Conclusion

All of these communicative and dialogic strategies have allowed SMI to access the Blaan ICCs thoughts, sentiments, views, including their fears and apprehensions. On the part of the ICCs, SMI's science communication processes have provided them information critical to their decision-making as a community and as individuals hoping to have a better future.

From the lens of an informational professional, I looked at the consultations/disclosure activities as **information sources** not only of scientific information but also rich sources of narratives of the challenges that come with seeking understanding, negotiating meanings,

and making life-changing decisions. I was interested in capturing and preserving these information and narratives in static format. I was after the **products** of these conversations.

From the lens of a communications development practitioner, I looked at the consultations/disclosure activities as **communicative and dialogic processes** that needed to be documented and communicated so that these, too, can be replicated, improved on, and inform policy and practice.

From these two lenses, I saw that SMI is fulfilling its obligation to comply with the local and international legal requirements for engaging and respecting ICCs, at times even exceeded expectations. In the activities I document, both parties may not even be aware they were engaged into science communication. SMI's primary goal may have been to generate ICC consent, and its science communication practice may have only been a means to achieving that end. The *Blaan* ICCs, on the other hand, may have been interested only in trying to negotiate and access meanings so they can at least chart their yet unknown futures. The process of negotiating for meanings may have been challenging, even painful for both parties, but it was clearly a springboard for dialogues that for me were genuine, open and fluid.

Go (2008) articulated that, for a consultation to be considered genuine, it has to be undertaken in a sustained manner over a long period of time, and should not be simple information dissemination activities. SMI has been engaging the ICCs since it first came to Tampakan. It continues and will continue to dialogue with these communities.

My study validated the CMM Theory. The persons-in-conversation, SMI and the *Blaan* ICCs, may not have been aware that in the process, they have already built ties with each other which now give an "afterlife to their conversations," one that will shape "the social reality of their futures" (Pearce and Cronen, 1999).

I affirm my position that notwithstanding language and cultural barriers, and opposing ideologies, science communication provides that neutral space replete with opportunities for the articulation, negotiation, construction and re-construction of meanings until persons-in-conversation achieve full understanding that will translate to informed decision-making.

I highlight the need for SMI to sustain and to strive to continuously improve its science communication practice, and for other extractive industries to draw lessons and to learn from this practice. Finally, I hope that this will result in greater awareness on the importance of the public understanding of science, and need to institutionalize science communication as practice across all industries, extractive or otherwise.

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