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Managing and Disseminating Indigenous Knowledge: The Case of LIO's Climate forums

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Abstract

This study explores the complexity of managing and disseminating Indigenous knowledge. UK-Based International Organization (LIO)'s *Climate forums* provide a practical example of knowledge management since they capture the voices of people who have been affected by climate change in order to put pressure on governments to act on climate change. While the *Climate forums* are an admirable attempt to give people a 'voice' on climate change, the full potential of 'voice' is overlooked since Indigenous knowledge is not explicitly recognised as part of LIO's knowledge management strategy. Development communication is explored as an approach for Indigenous knowledge management.

Keywords: climate change, Indigenous knowledge, policy, policy-making, climate policy

Introduction

This study begins by contextualising this research. First, I discuss the management and dissemination of Indigenous knowledge for development. Second, I introduce UK-Based International Organization (LIO)'s *Climate forums* as an example of knowledge management. Finally, the methodology and structure of the dissertation is outlined as a map to the following chapters.

The Emergence of Indigenous Knowledge in Development

Since the 1980s, participatory approaches to development, sustainable development and the loss of Indigenous knowledge contribute to the emergence of Indigenous knowledge for development. First, Indigenous knowledge is advanced within participatory approaches that hold a paradigm of *people* at the core (Chambers, 1995). Because participatory development is bottom up we are gaining more through the experiences of local people including women and the poor (Chambers, 1995). Indigenous knowledge emerges with participatory approaches that seek to *hear* local voices to ensure that development efforts meet people's needs (Bicker, et. al., 2004; Mundy & Compton, 1991). For example, the World Bank (WB) has "collected the voices of more than 60,000 poor women and men from 60 countries" as a part of its participatory research initiative, *Voices of the Poor* (WB, 2009). More grassroots participatory approaches to development signify an emergence of Indigenous knowledge (Sillitoe, 2000) and without the community's participation Indigenous knowledge cannot be documented (Kassam & Graham, 1999).

Second, Indigenous knowledge is advanced based on the perception that its holders live in harmony with nature (Miah, 2000). For example, Indigenous people in the arctic and sub-arctic have survived because of their sustainable relationship with the natural

Managing and Disseminating Indigenous Knowledge: The Case of LIO's Climate forums environment (Kassam, 2009). In another instance, the International Development Research Centre (IDRC) learned that the neem tree is used by Indigenous peoples in India and Africa for its insecticidal properties they use this knowledge to formulate and implement sustainable development policies (Lalonde & LeBlanc 1991). Indigenous knowledge for sustainable development is indicative of early interests in Indigenous technical knowledge for agricultural development. It must be noted, however, that not all Indigenous practices are sustainable; slash and burn agriculture in Bangladesh, for example (Islam & Feeroz, 1992).

Finally, modernisation threatens the existence of Indigenous populations and their knowledge, legitimising its protection and dissemination for development (Agrawal, 1995). Touching on the global uses of Indigenous knowledge via knowledge management, the WB explains "Indigenous knowledge has much to offer and teach the world at large, and only by research and documentation can it be preserved and made available to development workers world wide (sic), and its uses be exploited" (Rouse, 1999). Bangladesh Resource Centre for Indigenous Knowledge (BARCIK), for example, was established in 1997 to document and disseminate Indigenous knowledge in Bangladesh (Sen, et. al., 2000).

Organising, using and sharing knowledge refers to knowledge management strategies that convert raw information into relevant knowledge that can be used to achieve specific aims (Hovland, 2003). Knowledge management strategies are fraught with complexities when assessed against Indigenous knowledge that is context-dependent and dynamic making it difficult to *capture* with static knowledge management strategies that suspend knowledge in time and space. The implications of applying knowledge management strategies to Indigenous knowledge give rise to more dynamic alternative approaches. This study explores development communication as an approach whereby practitioners are

required to reconsider their responsibilities to the communities in which they seek to communicate for development. Specifically, this study explores *how development communication can enhance the way in which Indigenous knowledge is managed and disseminated*.

The importance of this study is three-fold. First, it builds on our understanding of knowledge management in development as it engages with Indigenous knowledge. Second, it merges development communication with knowledge management exposing the complexities of managing Indigenous knowledge. Third, it is hoped that research outcomes will inform LIO's ongoing knowledge management with communities.

LIO's Climate Forums: Giving a Voice

As a part of LIO's *Campaign for the climate,* the *Climate forums* are a small but vital means of putting pressure on decision makers within climate change policy processes. The *Climate forums* aim to *give a voice* to poor people who have been affected by climate change in order to raise awareness about its impacts and put public pressure on governments to act (SS 2009, pers. comm., April).

From March 2009 to September 2009 LIO held *Climate forums* with over 500,000 people in countries including: Indonesia, Malawi, South Africa, Uganda, Kenya, Vietnam, and Bangladesh (KrishnaM, 2009). These countries were chosen as the most affected by climate change and having power in global decision-making (KrishnaM, 2009). The *Climate forums* are a part of LIO's *Campaign for the climate* to get a fair deal at Conference of Parties (COP)15. The COP15 refers to the United Nations Climate Change Conference (United Nations Climate Change Conference (UNCCC) in Copenhagen, Denmark that will take place in December 2009 (United Nations Framework Convention on Climate Change (UNFCCC,

2009). The purpose of the COP15 is to plan the post 2012 Kyoto Protocol deal for climate change: emissions reduction, low-carbon development and adaptation assistance (UNFCCC, 2009).

Bangladesh has a population of 158 million and a density of over 1,000 persons/km^2 (WB, 2007). Muslim peasant farmers dominate Bangladesh's agricultural production across floodplains that disappear during monsoon (Sillitoe, 2000). Rice, mustard, onions and jute are cultivated for subsistence and local market sale (Sillitoe, 2000). Hindus are full-time, professional fishermen who are landless and displaced due to the hydrological cycle thus they also undertake non-farm labouring, rickshaw pulling and trading (Sillitoe, 2000). Farming and fishing are complementary livelihoods since many participate in both, however the predominant livelihood strategy of individuals lead to competition and control over resources (Barr, et. al., 2000).

LIO's first *Climate forums* were held in Bangladesh. Bangladesh is an ideal candidate for the *Climate forums* since it is hit hard by climate change and contributes only .01% to Carbon Dioxide (CO_2) emissions (LIO, 2000; UNFCCC, 2002; WB, 2007). Bangladesh is vulnerable to cyclones with its sub-tropical monsoon climate, location, topography and low capacity to cope (Agrawala, et. al., 2003). Cyclones cause storm surges that flood 30-70% of the country each year causing death and loss of livelihoods (Agrawala, et. al., 2003).

Currently, LIO is collecting thousands of voices on climate change and is seeking ways to use this *evidence* to advance their *Campaign for the climate.* Rather than jumping ahead to consider *how* we might disseminate the knowledge collected, LIO's *Climate forums* encourage us to look back and consider *what* we are collecting and *why,* providing a foundation from which we may then approach *how* we might manage and then later

disseminate the knowledge collected.

Methodology

This study draws from printed books, online/print journals, non-governmental/governmental reports, internal non-governmental documents, and personal communication. The literature review ties together knowledge management, Indigenous knowledge and development communication as the conceptual framework. I utilise the limited literature on the ways that knowledge management can be used in the field of development. Literature on Indigenous knowledge focuses on differentiating Indigenous knowledge from scientific knowledge; however literature from anthropology and other social sciences offers a more practical analysis of Indigenous knowledge and power relations. Finally, literature on development communication is scattered and also caught up in definitions. I used key sources to understand development communication as an alternative approach to managing and disseminating Indigenous knowledge.

This study uses LIO's *Climate forums* as an example of managing and disseminating knowledge and Indigenous knowledge. LIO has generously allowed access to primary data collected throughout the *Climate forums* in Bangladesh, enabling a thorough understanding of the complexity in managing Indigenous knowledge for development. In addition, this study uses personal communication with LIO to gain a comprehensive understanding of the *Climate forums.*

There are three broad limitations of this study. First, the literature on approaches to Indigenous knowledge management is not comprehensive. Therefore, development communication is explored only as a potential approach. Second, LIO's *Climate forums* deal with climate change. Since we are continually learning about climate change it is

impossible for this study to consider a thorough examination of it. Finally, only second-hand accounts of the *Climate forums* in Bangladesh are used to explore Indigenous knowledgemanagement and development communication. Primary data from Bangladesh partners would provide a more complete analysis of the *Climate forums.*

The following section reviews the literature leading to the development of a conceptual framework. The conceptual framework is then used to analyse LIO's *Climate forums* presented in section 3. Finally, section 4 offers an overview of research findings and policy implications.

Literature Review

This literature review begins by presenting knowledge management for the management and dissemination of Indigenous knowledge. Next, the complexity of Indigenous knowledge highlights the challenges of managing and disseminating Indigenous knowledge. Finally, development communication sheds light on approaches to manage and disseminate Indigenous knowledge. Combined, this literature review provides a conceptual framework to examine LIO's *Climate forums.*

Knowledge Management

What is Knowledge Management?

Born in the corporate sector in the 1990s, knowledge management was employed to improve efficiency and maximise profits (Hovland, 2003). Knowledge can be explicit or tacit (Figure 1). The former is documented, packaged and easily codified information that is communicable and transferable to facilitate action (Kidwell, et. al., 2000). The latter is know-how embedded in personal, contextual, non formalised experience and perceptions that are difficult to communicate and transfer (Kidwell, et. al., 2000). Both are useful in

knowledge management strategies. For example, in Osaka, Japan an enterprise created a bread machine using tacit knowledge gained by observing, imitating and practicing how bakers rotate and *twist* the dough (Nonaka, & Takeuchi, 1995). Knowledge management strategies used tacit knowledge to complement explicit laboratory research to create a good bread machine (Nonaka & Takeuchi, 1995).

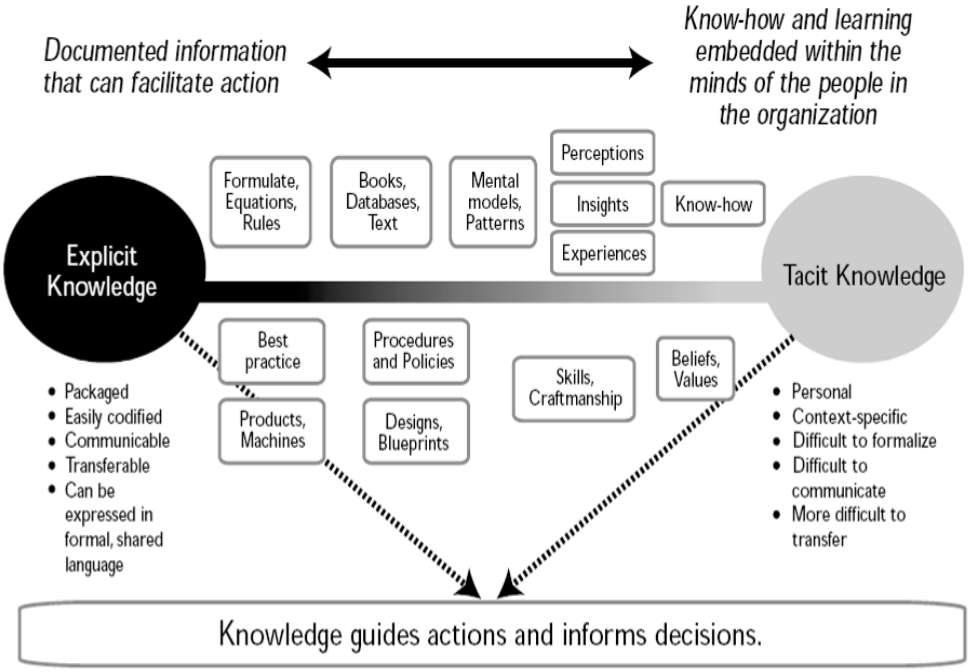

Figure 1. Tacit and Explicit Knowledge (Kidwell, el. al., 2000).

The Emergence of Knowledge Management in Development. As in the corporate sector, knowledge management in the field of development improves organisational efficiency (Ferreira & Neto, 2005). For example, the Institute of Development Studies (IDS) uses knowledge management to increase its capacity to intermediate knowledge based on relationship-building, dialogue and exchange as a two-way learning opportunity (Brown, et. al., 2006).

More uniquely, knowledge management in development enhances the social learning or cognitive dimensions of development (Ferreira & Neto, 2005). The process of social learning encourages people to take "explicit control of their own development experiences, using those experiences autonomously to solve their own future" (Ferreira & Neto, 2005). Social learning is a part of participatory approaches to development that in turn signify the embrace of local or Indigenous knowledge (Ferreira & Neto, 2005; Chambers, 1995; Sillitoe, 2002). In agricultural development, for example, farmer-centred approaches encourage collaboration between communities, extension workers and specialists to manage and use knowledge and technology for development (Manyozo, pers. comm.). Knowledge management is recognised as a valuable way to devise local development solutions by including local knowledge (Ferreira & Neto, 2005).

Indigenous Knowledge in Development. During the 1950s, Indigenous knowledge was regarded as primitive and an obstacle to modernisation (Agrawal, 1995). For example, collective farming practices of the Q'eqchi'es of Guatemala were regarded as inefficient because many men would sow seeds in a single file line causing un-necessary space wastage between seeds (Siebers, 2004). Generalised prescriptions over- looked that collective farming reduced risk and work load (Siebers, 2004). Knowledge management strategies facilitated uni-linear transfers of scientific knowledge from the *producers of knowledge* (scientific agricultural knowledge of donors and agencies) to the *consumers of knowledge* (the Q'eqchi'es), deeming Indigenous knowledge as primitive and to be changed.

In the 1980s Indigenous knowledge, or Indigenous technical knowledge, gained respect for its value in agricultural development (Chambers & Howe, 1979). Chambers, et. al., (1989) identified the importance of farmer-first approaches that prioritised farmer

analysis to guide research priorities in a decentralised way. More recently, Indigenous knowledge has been recognised as a valuable resource for moving the poor forward while enriching science (Posey, 2004).

Linking our discussion back to knowledge management in development, harnessing Indigenous knowledge is reflective of an evolution in knowledge management strategies seeking to incorporate Indigenous knowledge. The following is a taxonomic discussion to enhance our understanding of Indigenous knowledge and knowledge management strategies.

Indigenous Knowledge

Understanding Indigenous Knowledge

This paper will employ *Indigenous knowledge* for ease of readability, acknowledging that the term is fraught with political imperfections. Indigenous knowledge is referred to as local knowledge, rural people's knowledge, traditional ecological knowledge, traditional knowledge, and Indigenous technical knowledge (Warren, 1991; Scoones and Thompson, 1994; De Walt 1994; Purcell 1998; Chambers, et. al., 1989; Sillitoe, 1998). This paper does not aim to decipher the definitions of Indigenous knowledge. Attempts to categorise and universalise Indigenous knowledge have been characterised by Battiste and Youngblood (2000) as a Eurocentric tendency that cannot apply to Indigenous knowledge. Besides, the preoccupation with labels is "unlikely to solve the problem of hierarchical relations" (Sillitoe, 2000, p.115). Instead, I am building an understanding of Indigenous knowledge to unearth its inherent complexities for management and dissemination.

The following example illustrates the complexity of Indigenous knowledge which makes it difficult to *capture* for categorisation and universal application via normative

knowledge management strategies. In Bangladesh, all people know *that* fish live in water and that their availability varies by season and that to catch them you must use nets (Sillitoe, 2002). However, "to know *how* to erect one of the elaborate static net structures, or about the behaviour of different fish species, or the ecology of their preferred habitats at different times of the year, it is necessary to approach a professional fisherman" (Sillitoe, 2002, p.120, emphasis added).

A first attribute of Indigenous knowledge is its *empirical tendency*, similar to that of science. Indigenous knowledge is "observational, analytical, practical and effective" answering those questions raised in the example above (Kassam, 2009, p. 86). While scientific knowledge explains the structure of plants and animals, Indigenous knowledge explains the relationships among plants, animals, and environment that are telling of a human ecology (Kassam, 2009).

A second attribute of Indigenous knowledge is *context*. Indigenous knowledge is "related to, and contained within, a group of people who live in a defined geographic region" (Kassam, 2009, p.85). Indigenous knowledge held by a fisherman would vary by ecological region. For instance, the socio-political and historical context would reveal the rights of access to water bodies that reflect the fact that Hindu fishermen are a marginalised minority (Sillitoe, 2000). Only through context can we appreciate why certain techniques are used and by whom, revealing the politics of wealthy landowners monopolising fish-rich water bodies after monsoon season and employing illegal fishing methods (Sillitoe, 2000).

A third attribute of Indigenous knowledge is its *complex connectivity* that "arises from closeness to the land and the relationships with living things" (Kassam, 2009, p.85). Indigenous knowledge is gained by experience with the environment. Ingold (2000)

explains this as perceptual engagement with the environment where the world is going on, and continually generating with us and around us, "engagement is a condition of being, it must also be a condition of knowledge, [...] there can be no observation without participation" even scientific knowledge that deems to rest upon observation (p.108). People's knowledge of their environment is that of a *sentient ecology*, developed through perceptual engagement with a particular environment (Ingold, 2000). The knowledge of the fisherman then, is not formal or transmissible outside its practical context, rather, it is a complex part of the evolving ecological relationship the fisherman has with his environment.

A fourth attribute of Indigenous knowledge is that it is *cumulative*. Its holders are "conscious not only of the wisdom and observations of their generation but of the generations that preceded them," causing Indigenous knowledge to be adaptive and dynamic (Kassam, 2009, p.87). This enables scientific knowledge to co-exist with Indigenous knowledge as it is seen to be practically valuable to Indigenous livelihoods (Kassam, 2009). The fisherman's answers would not be temporally or spatially frozen; rather, they would be informed by the past and the present and would expectedly change in the future.

A fifth attribute of Indigenous knowledge is *plurality*. It is diverse consisting of layers that are part of a community and individual (Battiste & Youngblood, 2000). The degree to which *a* professional fisherman holds Indigenous knowledge compared to *all people* varies according to "age, gender, social class, level of experience, linguistic ability, access to oral tradition, and even interest in the subject" (Kassam, 2009, p.88). The example above reflects the unique and dynamic attributes of Indigenous knowledge as they relate,

and do not, to scientific knowledge.

Indigenous Knowledge 'vs.' Scientific Knowledge?

Contrary to efforts that polarize Indigenous and scientific knowledge (Chambers & Howe, 1979; Levi-Strauss, 1966) these knowledges are not mutually exclusive. Globalisation increases the contact and exchange between people, thus *Indigenous* and *scientific* knowledge have intimately interacted; they do not exist in vacuums as untouched bodies of knowledge (Agrawal, 1995; Kassam, 2009). For instance, Inupiat hunters' and whalers' knowledge of sea-ice is gained by direct and ongoing contact with sea ice (Kassam, 2009). They can detect changes with sea-ice that indicate climate change. Synthetic radar-aperture images from satellites reveal changes in sea-ice form and movement (Kassam, 2009). Combining the two knowledges gives the community an enhanced understanding of the changes (Kassam, 2009). Ingold (1996) explains that it is not a contrast in world view, rather: Between two ways of apprehending it, only one of which (the Western) may be characterised as the construction of a view, that is, a process of mental representation. As for the other, apprehending the world is not a matter of construction but of engagement, not of building but of dwelling, not of making a view of the world but of taking up a view in it (p.117).

Take the example of reindeer. At a certain point of hunting, the reindeer becomes still and makes eye-contact with the hunter (Ingold, 2000). Biologists explain that this is as an "adaptation to predation by wolves" while the Cree of northeast Canada explain that the "animal offers itself up" in love for the hunter (Ingold, 2000 p.13). The former is an *etic* understanding of nature *as it really is* in a physical world while the latter is defined as an *emic* understanding of a cognised world of cultural objects with cultural meanings (Ingold,

2000). The explanations are not contradictory; rather, they are both situated within different, but not opposing, ways of apprehending the world. Indigenous and scientific knowledge need not be understood as exclusive bodies; we gain more insight by exploring their complementarities.

Knowing How. Kassam (2009) explains that *gnosis*, the root of knowledge, refers to knowledge by direct experience. Recall Ingold (2000) who explains that engagement with one's environment is a condition of being and thus a condition of knowledge signifying that there is no observation without participation. Therefore, all knowledge is born from participation with our environment and is context-dependent, even scientific knowledge that is context-dependent before it is generalised and de-contextualised (Kassam, 2009).

The Aristotelian concept of *phronesis*, or practical wisdom, is a valuable way to conceptualise the context-dependent nature of knowledge because it: "Focuses on what is variable, on that which cannot be encapsulated by universal rules, [it] requires an interaction between the general and the concrete; it requires consideration, judgement, and choice. More than anything else, *phronesis* requires experience" (Flyvberg, 2001, p.57).

Kassam (2009) develops the concept of *phronesis* by explaining it as a process of knowledge generation that is dynamic and circular:

> *phronesis* is a dynamic process involving a circuit of knowing *how,* knowing *that,* and learning *how.* It is the iterative movement from context-dependent, experienced knowledge to context-independent, imparted knowledge. It is approaching the universal from the particular and vice versa. (p.90)

Knowing *that* is "finding out *that* something is the case;" recall that everyone knows *that* you use nets to catch fish (Kassam, 2009, p.75). Knowing *how* is "finding out *how* to do

something;" only a professional fisherman knows *how* to erect nets (Kassam, 2009, p. 75). For example, to know *that* climate change is happening we consider *how* tasks performed by the Iñupiat on sea-ice are affected (Kassam, 2009). Knowledge is an inherent part of experience that is gained through performance where learning is a part of each act (Kassam, 2009). That is, learning *how* is following the teacher or living with the people in order to achieve knowledge (Kassam, 2009). Recall the tacit knowledge of bread-making as learning *how* and knowing *that* because it is learned by observing and practicing how it is made by a bread-maker. Therefore, learning and knowing *that* refers to context- independent knowledge that is imparted, while learning and knowing *how* refers to context- dependent knowledge that is experienced (Kassam, 2009).

Knowing *how* is subtle and difficult to acquire. For example, the Inuit language and regular experience surviving on sea ice according to wind and current envelops the relational nature of Indigenous human ecology (Kassam, 2009). It is the experience of living and knowing *how* to survive that is revealed within the subtleties of being Inuit in one's environment. Knowledge then is in the relationships that people have with their environments (Kassam, 2009; Ingold, 2000). The attributes of Indigenous knowledge and an understanding of *knowledge* as context-dependent and based on engagement and experience with one's environment hints at the complexity of transforming know *how* to know *that* in knowledge management. How do we proceed to understand knowledge management as a normative tool to capture, store and disseminate Indigenous knowledge that is characterised by complexity?

Reconsidering Indigenous Knowledge Management. The sentiments of preserving Indigenous knowledge to spread its benefits come from an appreciation for Indigenous

knowledge, but an internal contradiction. Considering the time and effort that has gone into appreciating the dynamic and contextual nature of the indivisible relationships among people, plant and animals upon which Indigenous knowledge is based, it hardly seems like a breakthrough to suddenly isolate, document and store it for worldwide dissemination (Agrawal, 1995).

The methods to *harness* Indigenous knowledge reek of ethnocentrism whereby a particular model of the world is used to "access and structure others' ideas, even to assess them" (Sillitoe, 2000, p.7). Agrawal (1995) refers to this as an ex-situ approach to knowledge management that employs objective scientific methods to catalogue and preserve Indigenous knowledge for central management and control (Agrawal, 1995). Ex-situ strategies suspend Indigenous knowledge in time and space stripping it of its attributes that are necessary for a robust understanding of knowledge that is telling of a particular human ecology. Hobart (1993) explains that ex-situ approaches risk misrepresenting knowledge and limit analysis by "predisposing us to think certain issues and to overlook others that may be significant to local understanding and experience" (p.12).

Instead, we might consider that the management and dissemination of Indigenous knowledge is at the heart of power relations implying "an awkward ethical dimension" (Sillitoe, 2002, p.113). Ethics require practitioners to be aware of their responsibilities to Indigenous knowledge holders in order to avoid "vulgar appropriation and oppression of a living culture" (p.197). In managing and disseminating knowledge those involved must admit to their objectives; acknowledge that by codification and compartmentalization, the knowledge may lose the very context that makes it Indigenous and thus drain it of its potency; and, have the complete consent and participation of the community from which the

knowledge originates (Kassam & Graham, 1999, p.197).

Agrawal (1995) refers to this as an in-situ approach to knowledge management and dissemination that requires a shift in power relations so that Indigenous people control how Indigenous knowledge is preserved, used and by whom (Agrawal, 1995).

Development Communication

Attempting to balance ways of knowing, or knowledges, in a participatory process requires "a lot of communication skills right from the start" (Schonhuth, 2002, p.150). The First World Congress on Communication for Development found that communication is a key factor in development that cannot be underestimated (Inagaki, 2007). Communication has been a part of development the world over for the last 50 years (Manyozo, 2006).

The Emergence of Development Communication

Communication was formally used in economic development approaches under the Marshall Plan. The economic paradigm defined development as an internal problem with traditional and *backward* societies (Rogers, 1976). Thus, communication was a linear process of information transmission to change the behaviours of people (Havelock et. al. 1971). For example, extension workers transferred independent farming techniques to the Q'eqchi'es (Siebers, 2004). The behaviour change model of communication separated *us* and *them*, or the producers from the consumers of knowledge. Knowledge management strategies separated scientific and Indigenous knowledge rendering the latter to be overturned by the former.

Reconceptualising Development Communication. Participatory approaches to development have summoned a re-conceptualisation of communication in development as *development communication*. As the most foundational definition of development

communication, Quebral (1988) explains that it is the "art and science of human communication that is applied to the speedy transformation of a country" (p.147). Beltran (1976) emphasises *horizontal* (people to people) communication over *vertical* (government to people) communication echoing Freire's (1970) emphasis on dialogue that is at the core of self-determined community development. These foundations of development communication gave rise to increasingly participatory approaches to development communication.

Generally, participatory approaches to development communication focus on the knowledge, experience and goals of people first (Chambers, 1995; Inagaki, 2007; Jacobson & Kolluri, 1999). Local decision-making is employed to improve livelihoods and promote social justice through the right to a voice and information (Burke, 1999; Manyozo, 2004). Participatory approaches to development communication, like in-situ knowledge management strategies, are concerned with the empowerment of communities to influence the agenda, design and process of development and indeed the intervention of development itself (Waisbord, 2001; Melkote & Steeves, 2001). In order to appreciate the true complexity of participatory approaches to development communication we must acknowledge that communication processes, outputs and technologies are not neutral (Inagaki, 2007).

Considerations with Development Communication. To demonstrate the political nature of development communication let us consider the example of using video, as a communication tool, to facilitate development. First, is video the best mechanism? What are the strengths and weaknesses of other tools? Are drama, interview, focus group and/or lecture appropriate? What reflects the values, culture, frames of reference of those involved (Gadelsonas, 2002)? If we choose video we must consider investments in equipment, electricity, tape, and training. Further, do we have the time, training, commitment, practice,

and technical support to ensure its efficient use? Technical considerations cannot be underestimated when introducing communication technology to the development process.

Second, how will video technology help the community meet their needs (Bery, 1995)? Why are *these* images required – how will they be used and taken out of context? In any transfer of knowledge, the original framing of the knowledge is lost and appropriated by those in control (Siebers, 2004). In the case of Indigenous knowledge, will it be generalised for universal application by whom and why? Will it be more scientifically or Indigenously informed? These considerations bring us to a softer non-technical approach.

Third and related to the last points, access to media is not equivalent to empowerment by media (Bery, 1995). Instead we must consider the control of media, the quantitative and qualitative measures of ownership. Ownership reflects the perspective, style, content, direction, production, use of, and access to messages (Wilkins & Mody, 2001). Consent must be clear from the start in order to identify ownership and openness about the goals.

Finally, we must not underestimate the importance of the basics. Who is communicating, what are they communicating, for whom, why, and with what values (Gandelsonas, 2002)? These considerations expose the ways that development communication can facilitate how voices are heard and indeed misheard. Development communication highlights in-situ approaches to knowledge management that consider non-technical aspects of ownership, control and use alongside technical considerations to ensure that Indigenous people are at the fore of their knowledge management strategies.

The following example illustrates the political nature of development communication in the management and dissemination of Indigenous knowledge, Indigenous peoples have been subjected to centuries of colonial oppression. Maps, along with other Western epistemologies,

have been shameful instruments of destruction. Traditional land use mapping, in contrast, weds Indigenous knowledge to land use mapping processes, rendering the latter a potential instrument of liberation (Kassam and Graham, 1999, p.192).

In this case, maps, as the communication medium, are shown to be both oppressing and liberating. Indigenous knowledge can be taken out of context, reflecting an ex-situ approach where the holders are no longer in control of their knowledge (Agrawal, 1995). When communication tools are instrumentally used by outsiders they fall into uni-dimensional transfers or even extractions of knowledge.

Alternatively, Indigenous knowledge could be documented with an understanding among all stakeholders that knowing *how* would be transferred to knowing *that* in the process of mapping (Kassam, 2009). Combining Indigenous and scientific knowledge to the map in order to understand human ecology communicates a shift in perception and power relations and further draws on the communicative power of the map when it is read through learning *how*. The map can then be used to influence policy makers and to facilitate intergenerational knowledge transfer alike (Kassam, 2009). In-situ approaches encourage locals and outsiders to generate new insights and momentum for change in the community (Agrawal, 1995; Schonhuth, 2002). When development communication is approached in partnership between outsiders and insiders it can reflect a meaningful process that guides the process of knowledge management rather than being at the mercy of it, albeit even when the same communication tool is employed.

Serving as the conceptual framework for the following discussion, this Chapter demonstrates the malleable nature of development communication within the framework of managing and disseminating Indigenous knowledge. Development communication can

reflect an appreciation and respect for Indigenous knowledge by guiding the way in which it is approached and used, not as an isolated resource, but as one which is intimately a part of the people.

Case Study

Drawing from the conceptual framework developed in section 2, this section considers the complexity of Indigenous knowledge management as it is advanced through LIO's *Climate forums*. First, the context of the *Climate forums* within LIO's *Campaign for the climate* is explored with climate change policy processes. Second, the knowledge management strategy of the *Climate forums* in Bangladesh is explored as it engages with Indigenous knowledge. Finally, development communication is explored as it informs the management and dissemination of Indigenous knowledge within the *Climate forums*. This analysis contextualises the conclusion and policy implications to follow in section 4.

Contextualising the *Climate Forums*

LIO's *Campaign for the climate* includes lobbying, research and publications on the adaptation to and mitigation of climate change (SS 2009, pers. comm., April 2009). The *Climate forums,* within the *Campaign for the climate,* aim to put public pressure on governments (SS 2009, pers. comm., April 2009). The *Climate forums* "ensure testimonies of poor people are heard by negotiators from rich and poor countries participating in international climate discussions" (LIO, 2009, p. 1). Advancing the notion of participation through voice, LIO invites people to speak about their experiences with climate change.

Climate Change

Based on observations of increasing global average air and ocean temperatures, melting snow and ice and increasing average sea level the earth is said to be warming

(Intergovernmental Panel on Climate Change (IPCC), 2007). Since industrialisation in the 1970s, Green House Gases (GHG)s have increased by 70% (IPCC, 2007). GHGs change physical geography and increase temperatures affecting where and how people live; temperatures can increase by 2% as early as 2035 (Stern, 2007). Climate change causes sudden shifts in weather including monsoon, storms, floods, tsunamis, cyclones; changes in cloud cover, rainfall, wind patterns, ocean currents; melting glaciers and rising sea levels (Stern 2007; LIO 2000). These changes contribute to flooding, drought, reduced water supply and crop-yields, food insecurity, disease, low food production, and the loss of biodiversity (IPCC, 2007; UNFCCC, 2009).

The Kyoto Protocol developed during COP3 is a legally binding emission target for industrialised countries to reduce emissions by 5% from 1990 levels between 2008 and 2012 (Tauli-Corpuz, et. al., 2008). The *Campaign for the climate* seeks to influence policy processes within this framework by harnessing the voices of those affected by climate change to influence the setting of mitigation targets and the design and implementation of adaptation efforts (LIO, 2008).

Bangladesh. As mentioned, Bangladesh is densely populated and vulnerable to climate change due to its geography, weak economy (US$370 per capita income) and widespread poverty (1/3 of population in poverty, majority in rural areas) (Sillitoe, 2000; Government of Bangladesh (GoB), 2007). With climate change it is expected that sea levels will rise, monsoon precipitation and cyclone intensity will increase and dry season precipitation will decrease (Agrawala, et. al., 2003; UNFCCC, 2002). Water and coastal resources are expected to be hit the worst with flooding and winter drought (Agrawala, et. al., 2003). Changes will also affect agriculture, health, food security and habitat security (GoB,

2007). The impact on life and livelihoods has the potential to be significant, hence the

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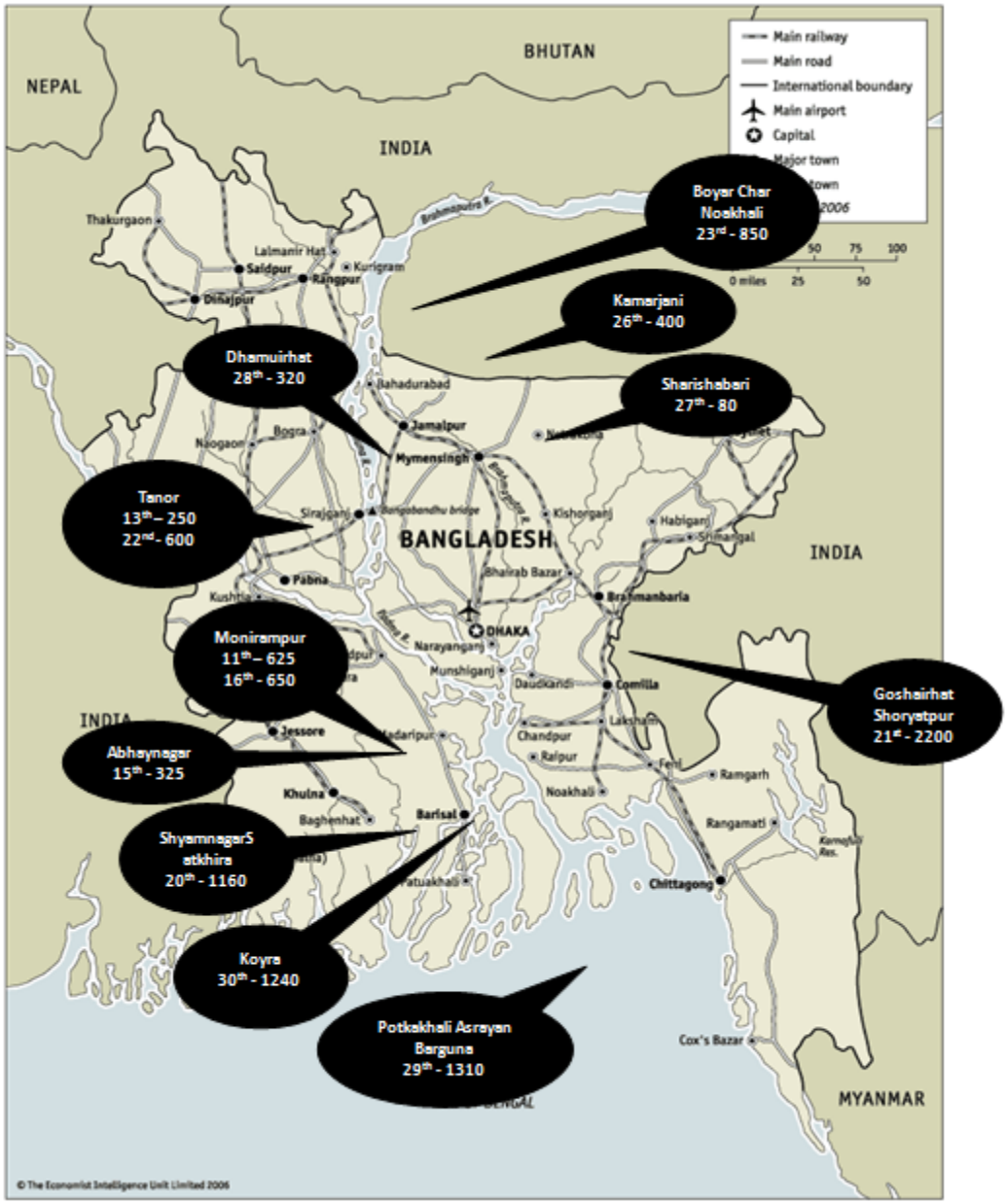

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I will focus on the 15 completed and compiled local Bangladesh *Climate Poverty Forums* (CPF) held during April, 2009 (CSRL, 2009). Figure 2 illustrates the location, day and attendance of the CPFs.

Figure 2. Bangladesh Climate forums April 2009 (Economic Intelligence Unit EIU, 2006 adapted by Author).

Following LIO's *Guidelines for Conducting a Climate forum,* the CPFs were executed with the recommended ingredients: an issue (climate change), sufficient information/proof/documents (written testimonies and photographs of testimony givers), *badi* (complaints about climate change), *bibadi* (accusing industrialised countries and governments), judge/jury (panel representing local government, Non-Governmental Organisation (NGO), farmers, journalist/private sector/religious leader), advertisement, witness(panel, committee, audience), audience (local people), advocate (civil society), media, and judgement (panel) (LIO WPH, 2009; CSRL CPF, 2009).

CPFs began with speeches from a moderator and chair from the local government or NGO. Speeches generally reflected three elements: (1) the *cause* of climate change by industrialised countries, nuclear bombs, cars, and carbon emitting machines (C Biswas, Monirampur 11th April); (2) the *effects* of climate change and global warming leading to "seasonal changes, reduced water availability, riverbank erosion, high tide, salinity, cyclones, tidal surge, agricultural destruction, health problems, and rising sea level" (P C Dhar, Monirampur 16th April); and (3) the *proceedings* of the *Forum* to express problems with climate change to a panel of judges who will recommend what needs to be done and by whom. *Forum* Panels consisted of five individuals including: teachers, Union Parishad (UP) members, NGOs, farmers, and a businessman/journalist/religious leader as a key *expert*.

Forum Committees, consisting of similar representatives as the panel, selected and prepared testimony givers in advance with suggested questions. Primarily, people were asked about their experiences with climate change and its impacts on family, society and

individuals. People were also asked what needs to be done about climate change now and what assistance is necessary to minimise its impacts (LIO WPH, 2009; KrishnaM, 2009). Testimony givers were predominantly elderly farmers, however, housewives and the occasional fisherman, agro-labourer, policy officer, or doctor also shared their experiences. Although I have generalised the testimonies for the sake of explanation, these experiences are only of a handful of people throughout Bangladesh.

Farmer Testimonies. Farmers shared their experiences with climate change as it affects agricultural activities. A Gazi (Shyamnagar) explains, "we have not been able to cultivate any crops [rice, jute, maize] in our land as it is affected by extreme salinity" (Kamarjani). B Monday (Koyra) adds,

> In 2000, the embankment of the river collapsed by [...] high tide and due to saline water intrusion in the cultivable land, our crop was damaged in that year. [...] every year the saline has been increasing and we cannot cultivate any crops now.

Farmers in Boyar Char, Asrayan and Sharishabari explain that river bank erosion is leading to displacement, disease, and a loss of livelihoods and life of both humans and livestock. An elder explains, "again we lost our house in cyclone and then we had to change our settlement to Barguna, and after loosing (sic) the properties to repay the loan of Bank we became totally landless" (A U Chowdhury, Asrayan). Farmers in the South express similar experiences with displacement and a loss of livelihoods due to cyclones and salinity.

> North of Dhaka, a woman shares the loss of her livelihood due to excessive heat: I have family of 6 and we have to subsist with the property of one cow, 2 ducks and no hen after I have lost 20 of them in recent heat stroke. This scorching heat

> has made us a sufferer of continuous disease, my husband, who is a Van Puller, is suffering from diarrhoea chronically. (H B Begum, Sharishabari)

Other women farmers explain how climate change is affecting the productivity of agriculture. Women farmers explain that the costs of agriculture (fertilisers, irrigation and pesticides) are increasing due to the variability of weather (Tanor; Kamarjani; Dhamuirhat). M Shahina Bagum (Kamarjani) from north Bangladesh explains that maize, as the profitable crop to grow, is becoming difficult to cultivate:

> We use to grow traditional crops like peanuts, cheena, etc in the Char area. It has become very unprofitable to grow these crops. There was no maize cultivation. But water level is decreasing and we are growing maize with irrigation. But even this maize is facing a hard time due to less rain (M Shahina Bagum, Kamarjani).

Farmer livelihoods become increasingly insecure since agriculture is difficult to maintain with variable conditions. A woman recalls that her elders cultivated enough rice without expensive fertilisers and pesticides:

> Now, the rice production has increased but there is excessive expenditure due to fertiliser, irrigation or pesticide, we get very meagre net output. Irregular raining [causes] pest attack in the field. We have also lost our Indigenous varieties of rice (M Sakina Begum, Kamarjani).

Farmers in the south share their experiences with displacement and loss of livelihoods due to cyclones, destroyed embankments and salinity. In the north, women and men farmers express their frustrations with productivity that is more demanding of inputs with variable weather. The impacts of climate change, while different for farmers in the south and the north, are disrupting livelihoods in unexpected and unplanned ways.

Housewife Testimonies. Housewives throughout Bangladesh share their struggles with water in maintaining agriculture, housing and lives (Shyamnagar; Boyar Char; Tanor; Monirampur). S Varoti (Tanor) in north-west Bangladesh explains that while her village has several tube wells and a river, water is not available, "how will the farmers and their families survive? [...] we aren't able to provide sufficient drinking water. [...] We can't produce vegetable for the lack of water." Like farmers, housewives in the south repeatedly lose housing and land due to flooding and cyclones, making it difficult to secure livelihoods (Shyamnagar; Boyar Char; Asrayan; Abhaynagar). For example, N Begum (Boyar Char) from Nalchira in southern Bangladesh explains,

> The cyclone of 1970 took all of my possessions. I had lost my father and brothers [...] We also lost our houses in the river. Then we shifted in Nalchira [...] we lost our house in the river. It happened twice [...] We sold our two cattle and again settled in this Boyar Char [...] When we came here we saw there were no trees and no fresh water sources here. We had no drinking water. [...] We strived to settle, but the river grabbed our house 3 times.

Similarly, housewives in the south part of Bangladesh experience displacement and livelihood insecurity due to cyclones M Parvin (Koyra) explains,

> In 2007 [...] the embankment was failed to protect the high tide and totally collapsed down. [...] At first the water flowed over my and neighbouring homesteads [...] after one day it washed out my living house, kitchen, cattle house and poultry farm. [...] Our crops damaged and the only small fish farm submerged under water.

Housewives throughout the country express their frustrations with the unavailability of

water for drinking and maintaining households while simultaneously struggling with flooding, damaged housing and productive inputs, and displacement.

Fisherman Testimonies. Traditionally, fishermen could depend entirely on fishing, but this is no longer the case for fishermen in the Northern half of Bangladesh (Goshairhat; Dhamuirhat; Kamarjani; Boyar Char). M A Ajam (Kamarjani) explains,

> I was a fulltime fisherman, [...] from 1988 and there was a plenty of fish. From 1995 I have to engage myself partly in agriculture labour as there is very little fish over there in the river to subsist my family. Water is not enough for the fishes, there are Chars in the middle of the river. Water comes untimely and fishes can not (sic) lay the eggs in time. I can recall these same rivers with enough waters.

Rivers, ponds and canals are drying up, making it difficult to cultivate fish (Dhamuirhat). As a result of insecurity in fishing and agriculture, many fishermen and farmers are also agro-labourers.The need to diversify livelihoods in the face of insecure agricultural production and fish resources is clear (Shyamnagar; Kamarjani). One agro-labourer explains,

> Most of the Indigenous Munda community members has no agricultural land and for that reason, I have to work in others' land. Due to continuous draught (sic) since last 6 months, there is no agricultural work in this area and we have simply no job (K Munda, Koyra).

Solutions in Shyamnagar & Koyra. People also offered solutions to their problems. In Shyamnagar A Gazi suggested the government repair the embankments, stop shrimp farming and increase jobs. In Koyra a farmer asks the panel to "recommend the government to

do something effective for us so that we can live with human dignity" (B Mondal). A housewife demands the government repair and raise the embankments immediately (M Parvin, Koyra). She also explains that "sediments should be permitted in the cultivable land in a planned way."

Following the testimonies, the panel in Shyamnagar explained that "the testimony givers have submitted complaints against the global warming and intrusion of saline water in their agricultural land." In Koyra the panel added that climate change causes, "river bank erosion, raised high tide, heat wave, extreme fog, draught (sic)." The panel in Shyamnagar, like Koyra, attributed causality to these events, "excessive consumption and amusement of the developed countries are responsible for this drastic change of the climate" (Shyamnagar).

Finally, the panel recommended that the local government put pressure on developed countries to reduce GHGs immediately, pay compensation to climate vulnerable communities through local government, and allow affected people to settle in developed countries (Shyamnagar; Koyra). They recommend the local government to repair and raise embankments and provide social safety-nets for affected people (Shyamnagar). The solutions in Koyra, and other areas, were also similar.

Testimonies provide a snap-shot of people's lives as they have been affected by climate change. People also offered general solutions and recommendations while the panels formalised complaints and recommended governments to take a series of measures to combat climate change.

Indigenous Knowledge Management

The local CPFs captured the voices and experiences of over 65 people. Recall that experience with one's environment (perceptual engagement) is the basis of all knowledge

(Ingold, 2000). Although LIO does not explicitly refer to the *Forums* as a *knowledge* management strategy, they are unique example of knowledge management - gathering experiences with climate change and disseminating them to pressure governments to act on climate change for the ends of the *Campaign for the climate*. Capturing the effects of climate change on people is important, but how, in this process, have we engaged with Indigenous knowledge?

While it is not explicit, Indigenous knowledge was indeed a part of the *Forums* in Bangladesh. Referring to the data, K Munda from Koyra identifies himself as being Indigenous. The moderator (H Mehedi) opens the *Forum* in Koyra explaining, "The Indigenous Munda communities are living in 7 villages of this union. They are facing several problems for this change of weather." The *Forum* in Koyra is only one of 13, and the testimony givers are only five of 65. There are four characteristics of the way in which Indigenous knowledge has been managed.

First, all experiences are lumped together with only geographical labels separating them. The *Forums* do not reflect an understanding of the context-dependent nature of knowledge, specifically of Indigenous knowledge. They over-look the context of experiences as they relate to: (1) a particular human ecology or pattern of relationships among people, plants and animals; (2) the socio-political and historical context of Indigenous people, their diversity, experiences of cultural and traditional alienation; (3) their livelihood insecurities related to lack of land holdings; or (4) their struggle for representation (Rahman, 2009). The contribution of Indigenous people is not distinct; rather it is injected among other contributions.

Second, only the experiences of five Indigenous people have been captured, all of

whom are Munda. Out of five we have one female housewife, one elder and two younger farmers, and one elder agro-labourer. Participants express that weak embankments affect agriculture (mango/coconut/nut/acacia/rice) and small fish farming with increasing salinity. The representation of age and geography within Koyra is well-balanced considering the size of the group. However, there is a gender and occupational imbalance while the social class and experience of the participants are unknown. We are not aware of the plurality of experiences compared to others who are Munda or who are from another group.

Third, the *Forums* last approximately three hours zooming in on a particular set of climate change impacts: rising temperature, flooding, and drought resulting in loss of family members, crops, housing, and livestock. It is not clear how these changes are related to generational experiences with changes in sea level over time, types of plants and crops grown, livestock and fish species, or severity of flooding, cyclones and drought. In short, we are not aware of how the experiences shared are informed by the past and present.

Fourth, people are framed as victims of climate change overlooking the complex connectivity that arises from perceptual engagement with one's environment. People's knowledge of their environment is empirical and built through observation, analysis, practice and effectiveness. Indigenous people are framed as victims of climate change, rather than as informants about *how* their activities performed on the environment via agriculture and/or fishing have been affected by climate change.

Ex-situ knowledge management strategies uni-dimensionally extract *relevant* information about the effects of climate change. This information is disseminated for use as *evidence* of climate change to pressure governments to act on climate change. *Voices* are assimilated without acknowledging that they form the basis of knowledge that emerges from

particular experiences forged through people's relationships with their environments.

It is possible that Indigenous knowledge is managed in this way because of the instrumental (a means) and representative (to give people a voice in their development) approach to participation (White, 2000). Voice is used instrumentally as a means to pressure decision-makers for a fair and safe climate change policy. The voices provide evidence for climate change according to climate science; however, Indigenous people in the Chittagong Hill Tract (CHT), where no *Forums* were held, find that climate change also impacts landslides that are not referred to by climate science (Gunter, et. al., 2008).

The panel's recommendations echo LIO's demands for COP15: to reduce GHGs and compensate climate vulnerable people. In this way, people's participation is only as representative as LIO's goals to influence climate change policy. COP15 objectives are externally developed overlooking the adaptation and mitigation strategies that Indigenous people have developed over decades (Tauli- Copuz, et. al., 2008). For example, we might support the low-carbon sustainable livelihoods of Indigenous people that have replenished the atmosphere for decades (Tauli-Corpuz et. al., 2008). In another instance, we might consider how Kyoto's carbon credits (planting forests) may displace Indigenous people from ancestral territory disrupting the intimate relationships forged between people and their environments (Tauli-Corpuz et. al., 2008).

Development Communication: Managing and Disseminating Indigenous Knowledge

A Development Communication Approach

We begin with non-technical, softer aspects of development communication before considering technical aspects. First, giving people an opportunity to have their concerns heard does not guarantee the empowerment of those people to influence an intervention, its

agenda, design, and process (White, 2000). White (2000) explains that Bangladesh attests to this painful lesson, "too many times they have seen their discussions drain away into the sand. [...] sharing through participation does not necessarily mean sharing in power" (p.6). As the *Forums* illustrate, the evidence collected on climate change reflects LIO's perception of the affects of climate change.

Second, ownership reveals the control of the approach. The CSRL plans and delivers the *Forums* under the guidance of LIO. The outcomes of the *Forums,* while owned by CSRL, are used by LIO for the *Campaign for the climate.* Thus, the primary purpose of the *Forums* is to facilitate the sharing of particular experiences with climate change so that they may be used to pressure governments. The hand-picked testimony-givers via CSRL not only reflect what LIO intentionally seeks to *find out* but also have the potential to exacerbate existing inequalities. Any effort that seeks to *give voice* to people must understand that no community is homogenous or exists in harmonious relationships (Gujit & Shah, 1998). As a result, LIO risks not only exacerbating existing inequalities and creating new ones, but also overlooking contextual factors of the *evidence* collected.

Finally, as a result of NGO-based ownership (CSRL including LIO), LIO's values guide the process of knowledge management. LIO's drive for *evidence* on climate change has resulted in static ex-situ strategies to manage and disseminate dynamic Indigenous knowledge. De-contextualising Indigenous knowledge, ex-situ knowledge management strategies misrepresent knowledge, limit our analysis and overlook issues that are required for local understanding. The potential contributions of Indigenous knowledge in understanding climate change and mitigation and adaptation strategies already in place are overlooked.

A development communication approach requires that the ownership and goals of an effort are clearly stated at the outset. For a development communication approach to reflect in-situ knowledge management, ownership of the process including planning, implementation and dissemination of outcomes are shared among all stakeholders. A development communication approach with shared ownership would enable stakeholders to identify a variety of styles of communicating including Forums, focus groups, interviews and even local ways of communicating that may be better suited to engage participants in discussing climate change.

The *Forums* might consist of several small focus groups throughout the community, individual interviews in addition to more formal *Forums.* Stakeholders could decide upon appropriate communication tools including written documentation, photographs, video, mapping, or other local tools. Reflecting local values, the tools of communication would be better-suited to help the community meet its needs that may include pressuring governments for action on climate change. By collectively choosing the appropriate tool(s), a development communication approach enables the tool(s) to act as instruments of liberation rather than appropriation.

More importantly, stakeholders could collectively identify how images, text or video footage are collected (with consent), from whom, how they are used, and how they may be de-contextualised. Although the goal of the *Forums* are to put pressure on governments to act on climate change, a development communication approach may reveal other ways in which *Forums* can be used by the community as an advocacy tool, for example.

Development communication facilitates in-situ approaches by shifting power in favour of Indigenous people to control how to manage, use and who uses their knowledge.

In turn, non technical approaches shed light on technical considerations about styles and tools of communication used in the process of knowledge management in order to wed Indigenous and scientific ways of knowing for a richer understanding.

In any transfer of knowledge the original framing and context that informs that knowledge is lost. This applies to the process of transferring Indigenous knowledge or context-dependent know *how* into context-independent know *that.* This process requires a mutual understanding of how knowledge will be appropriated (Kassam, 2009). The management and dissemination of knowledge implies an inherently messy political process. In addition to the politics of ownership and control we must consider the politics of the context in which we are dealing. Bangladesh is characterised by political inequalities. For example, the Muslim majority alienates Hindus and other religious and ethnic minorities including Indigenous people (Raham, 2009). Land tenure is a contentious issue for Indigenous people who are predominantly agriculturalists but also undertake fishing and agro-labour as necessary (Rahman, 2009). While there are over 50 Indigenous groups spread throughout Bangladesh, they are mostly concentrated in the CHT region struggling for representation for decades (Rahman, 2009). It is no surprise that venturing into knowledge management requires an awareness of unequal political relations at the outset.

Conclusion and Policy Implications

This paper examines the complexity of managing Indigenous knowledge and subsequently the value of development communication in facilitating in-situ approaches to Indigenous knowledge management. LIO's *Climate forums* offer a practical example of Indigenous knowledge management and the potential for development communication to improve knowledge management strategies. The *Forums* illustrate that development

communication is only an approach. The true outcomes of any approach depend upon its implementation. Development communication as an approach does not offer the precise *ingredients* for knowledge management, it does however provoke practitioners to ask difficult questions about their intentions and goals.

Findings

In this research I set out to understand how we attempt to use Indigenous knowledge for development. I found that Indigenous knowledge as it is contextual, empirical, plural, cumulative, and based on complex connectivity is nothing short of complex. It was argued that due to its complex nature, Indigenous knowledge is not well-suited to ex-situ, or etic, approaches to documentation and use. A snap shot of documenting and using Indigenous knowledge in various projects beginning in the 1980s illustrates the inherent incongruence of western methods to assess, capture, catalogue, and disseminate Indigenous knowledge. I found that due to its intimate placement within the perceptual engagement of Indigenous people with their environments, Indigenous knowledge is not well-suited for central management and universal dissemination.

Based on an intimate understanding of Indigenous knowledge it was possible to understand and appreciate the need for in-situ, or emic, approaches to document and use Indigenous knowledge. These approaches necessarily require shifts in power relations to place ownership and control of Indigenous knowledge management and dissemination in the hands of knowledge holders. The aim of in-situ, or emic, approaches is simply to avoid the appropriation of Indigenous knowledge and people.

Communication is an inherent part of development efforts whether it is perceived as a linear tool to deliver messages of modernisation or as an ongoing dialogical approach to

facilitate more participatory approaches to development (Manyozo, 2006). Communication is no longer a neutral vehicle for development. Instead, communication becomes as much about technicalities in delivering messages and changing behaviours as it is about non-technical power relations in the process of development.

Policy Implications

Only upon an analysis of LIO's *Climate forums* are the issues with managing and disseminating Indigenous knowledge clear. While LIO's sentiments to give people a voice are admirable they remain premature. LIO employs ex-situ knowledge management strategies whereby ownership and control of the *Forums* are placed in the hands of CSRL. While gathering evidence on climate change to pressure governments to act on climate change policy, the *Forums* assimilate individual experiences to disseminate them on national and global levels. Knowledge management strategies document selected experiences with climate change, overlooking Indigenous experiences that are telling of an intimate relationship that Indigenous people have with their environment.

A development communication approach allows for an analysis of unequal power relations by revealing issues of ownership and control of knowledge management. Using Indigenous knowledge for development requires a soft approach to understand power relations and the nature of the knowledge we seek to manage. Development communication allows us to reconsider the way in which Indigenous knowledge is managed and disseminated by LIO in three ways.

First, we must begin by understanding that we are dealing with Indigenous knowledge that is contextual, empirical, plural, cumulative, and based on complex connectivity and therefore best- suited to in-situ methods of knowledge management. Since the *Forums* have

already taken place in Bangladesh, we consider how LIO may re-kindle the relationships they have begun to build with people in those countries. LIO may re-asses how Indigenous knowledge can be of use to the community to which it belongs. In following with a development communication approach power relations between LIO and the communities may shift in favour of Indigenous communities owning and controlling the process *if* their knowledge is collected and how it is collected and used.

Second, LIO's interest in climate change emerged from their on-going humanitarian work with communities affected by climate change. Development communication is longer-term and is therefore more suitable as a part of LIO's ongoing engagement with these communities. Development communication allows for an understanding of local socio-political contexts. In Bangladesh these factors reveal the political inequalities that characterise the marginalised position of Indigenous people in Bangladesh. In turn, this may reveal potential areas that have been excluded from the *Forums*, the CHT, for example. A development communication approach better positions LIO to not only gain *evidence* on climate change in Bangladesh, but also to gain an understanding of climate change, and how it has been mitigated and adapted to by Indigenous people in Bangladesh.

Finally, the ability for development communication to facilitate such a process depends entirely on its implementation. Development communication is not a recipe whereby we can follow certain ingredients to get a desired result; rather, it is a process that requires ongoing theoretical and practical reflection. Theory has enabled us to reconceptualise the management and dissemination of Indigenous knowledge based on a clearer understanding of Indigenous knowledge and knowledge management strategies. Development communication offers a different way to think about knowledge management as a political process requiring

softer-approaches. Practice provides a canvas upon which we may apply strategies of knowledge management and dissemination with a variety of approaches. Development communication is not about a singular approach to Indigenous knowledge management and dissemination; rather it concerns dynamic and on-going approaches in order to find an appropriate balance of technical and non-technical elements.

This research begins to weave together the ways in which Indigenous knowledge can be managed and disseminated, only scratching the surface of LIO's *Climate forums.* This study has shed light on the increasingly political nature of knowledge management for development that summons the need to creatively integrate multi-disciplinary insights on moving forward. Development communication brings us back to the ethical heart of managing and disseminating Indigenous knowledge by provoking practitioners to ask difficult questions and tackle them head on. It is hoped that LIO continues to lead the way in doing things differently by assessing and re-assessing actions taken and insights gained through the journey of the *Climate forums.*

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Biography: Currently, Jennifer Reddy is the Senior Social Planner of Anti-Racism and Cultural Redress with the City of Vancouver. "Like many others, I am working towards an inclusive world where people are engaged as valuable and deserving individuals, who can use their agency to lead the changes they wish to see. As a child of immigrant parents, I am forever in awe of the capabilities of individuals to adapt and re-define themselves. Because of this, I believe that it is within the power of each of us to initiate creative and long-lasting change that benefits us all. I am fortunate to hold a Masters in Social Policy and Development, a Bachelor's in Development Studies and Economics, a Certificate in Curriculum Development and Instructional Design, and Inclusive Leadership Training. Using this education, it is my aim to engage in meaningful dialogue, and encourage the development of ideas that result in creative solutions to complex issues. I look forward to opportunities to learn from and contribute to the efforts of individuals and communities that drive global leadership and innovation in social change."