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A CONSTITUTIVE COMMUNICATION LENS OF STAKEHOLDER PARTICIPATION IN POST-DISASTER CONSTRUCTION

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ABSTRACT

A diverse set of stakeholders converge to facilitate reconstruction and recovery in post-disaster settings. Shared decision-making, implementation and evaluation are crucial to ensure reconstructed infrastructure delivers a high level of service that reflects local needs and capacities. Despite attempts by organizations to include local knowledge in post-disaster design and construction to enhance operation and maintenance of infrastructure, participation processes are failing consider local perspectives. In contrast to technocratic solutions, this research focuses on the communication processes that constitute participation to understand how local knowledge might be better incorporated in reconstruction efforts. Building on theory of participation archetypes, we analyzed twenty shelter reconstruction projects in the Philippines following Typhoon Haiyan, examining how communication practice shaped membership. Findings show that stakeholder groups use different communicative strategies to participate in reconstruction. Non-governmental organization processes created a communication deficit in their favor through a reliance on textual sources and aggregation of local input, government agencies distanced themselves to limit uncertainty of losing infrastructure support and communities withheld knowledge to limit resource contributions. Based upon this analysis, we recommend that aid organizations ensure that communication moves beyond unidirectional approaches by starting design development earlier with communities and that alternatives to textual sources are provided for local partners.

KEYWORDS: Stakeholder Participation, Disasters, Constitutive Communication

INTRODUCTION

A non-governmental organization enters the chaotic fray of disaster response in a community devastated by disaster. Their policies emphasize a technical approach to reconstruction of housing that prioritizes optimization of inputs. Design decisions are communicated, and feedback received, through consultations with homeowners and large community meetings. At the end of year of intensive work, dozens of families have moved into new homes. Despite well intended and robust designs, the houses fall into disrepair after only a year of use. The materials are difficult to maintain and environmental conditions to lead to faster than anticipated deterioration. This story is all too often the reality of post-disaster humanitarian infrastructure projects. If, recommendations do surface from these failures, it is commonly the production of new technical guidelines that attempt to mitigate the environmental factors that influence operations

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and maintenance. Rather than focus on the process used for facilitation, the attention of organizational learning is almost always on the information extracted.

Participation of local actors in post-disaster recovery projects has gained significant traction in literature as an important process to rebuild and recover from disasters (Norris et al. 2008). Participatory engagement processes are theorized to help address community inequalities (Prokopy 2009), improve project efficiency (Chang et al. 2011) and build community disaster resilience (Aldrich 2012). Stakeholder participation is fundamentally governed by communication between actors (Jacobson and Storey 2004). Communicative acts create the social reality that surrounds decisions, actions and allocation of resources. Communication is also the field through which participation is contested and negotiation occurs (Putnam and Maydan Nicotera 2010). This link between communication and participation is often masked in disaster literature because of the complexity inherent to recovery. There is a tendency to associate participation as an outcome and not a process. For example, organizations are quick to ‘check the participation box’ by holding a stakeholder meeting, but are hesitant to invest in long-term facilitation and consultation processes. This affinity toward participation as an outcome has resulted in misunderstanding of how participation impacts long-term disaster resilience and risk reduction.

In this paper, we draw from communication scholarship to analyze the role of communication in shaping, and constituting, participation of actors during post-disaster construction. This research moves beyond traditional discussions of participation to recognize different forms of participation that emerge in post-disaster environments and presents a framework to re-examine what constitutes participation processes. Past literature has identified three primary archetypes of participation that include: decision-making, implementation and evaluation (Cohen and Uphoff 1980). *Decision-making* refers to the ability of stakeholders to influence project choices, *implementation* refers to labor, material or transportation contributions and *evaluation* refers to feedback mechanisms. We will explore the occurrence of each of these forms of participation during, and leading up to, construction activities. We draw from data collected following Typhoon Haiyan, which struck the Philippines in November of 2013, examining organizational practice in 20 housing reconstruction programs.

Past literature has focused largely on early planning phases of projects, resulting in limited understanding of later participation processes during construction. Further, past work has decidedly approached post-disaster participation from an organizational perspective that takes for granted what constitutes participation of stakeholders. Communication, the interface between stakeholders, has been largely neglected in understanding how stakeholders participate. As such, we address the research question: *How does communication influence non-governmental organization, government agency and community participation in post-disaster construction?* By answering this question, we will take concrete steps toward deconstructing the social processes that constitute participation in disaster recovery. A major limitation of current post-disaster construction is the undervaluation of local knowledge – a critical input to achieve sustained maintenance and operation of infrastructure. Despite efforts to include local actors, approaches to engagement commonly take a technocratic perspective that sees knowledge as unalterable. This research will aid in understanding how stakeholders position themselves in reconstruction projects, resulting in new theory on the role of communication in participation and recommendations for organizations to effectively use communication as a tool to connect with local stakeholders.

BACKGROUND

Within this paper, we define participation as “the process by which stakeholders influence and share control over priority setting, policymaking, resource allocations, and/or program implementation” (Tikare et al. 2002). In the context of post-disaster decision-making, it is important to conceptualize decisions as processes that are created through the convergence of conflicting policies, desires and ideas. While a decision outcome is meaningful and impactful, the process through which the end outcome is achieved provides rationale to stakeholders and solidifies goals and objectives for a program. Civil society organizations have increasingly emphasized a participative model of reaching consensus on planning of public projects, requiring the co-creation and negotiation of decisions. The communicative acts between these stakeholders are a key element in how decision outcomes are achieved between transnational organizations, governments and local communities (Witteborn 2010).

Participation has long been heralded as important in developing the built environment. Arnstein’s (1969) seminal work was the first to create a typology of decision-making participation, decomposing the construct into a ‘ladder of citizen participation.’ Most importantly, early literature from urban planning built theory on the graduated divisions that manifest in participant’s different levels of control. Literature has also characterized additional *types* of participation that arise. One of the most comprehensive frameworks of participation to date stems from Cohen and Uphoff (1980), presenting a composition of three factors: *what* kinds of participation take place, *who* participates and *how* the process of participation occurs. Further, literature has largely converged on three forms of participation: (1) *decision-making*; (2) *implementation*; and (3) *evaluation*. Who participates and what types of participation manifest have been well studied in the disaster context; the prevalent gap that remains is in understanding how the process of participation unfolds.

Recently, Cooke and Kothari (2001) showed the importance of *who* is involved in participation. Johnson et al (2006) extended on this work in the disaster context by examining the intersection of multiple stakeholder groups, finding that the duration of participation of stakeholders was an important attribute of processes. This work took initial steps to connect types of participation, however, further work is needed to theorize on the complex interactions of stakeholder roles as they evolve in disaster reconstruction. Davidson et al. (2007), by examining low-income housing in a post-disaster context, further found that meaningful decisions from end-users during planning and design stages led to more favorable outcomes. Involvement in later project stages, such as sweat equity or financial management, resulted in the breakdown of planned management structures. A key finding was that early involvement of communities resulted in more efficient project management. This again highlights fragmentation of typologies of participation and a gap in understanding their collective impact. The early body of knowledge made the assumption that higher levels of participation were more desirable. Yet, as recent trends in literature have highlighted, unchallenged citizen control can have negative consequences on project outcomes (Khwaja 2004). This provides further evidence for the need to understand participation as a process. Despite these gains in assessing the impact of participation on outcomes, we still lack knowledge of how stakeholders actually view membership in reconstruction projects. Past theoretical approaches have taken participation at face value without examining the social interactions that constitute the construct.

The Role of Communication in Knowledge

Post-disaster reconstruction requires that organizations, governments and communities draw on past experience to plan infrastructure, make design decisions and manage labor and resources during construction. Recovery also demands that stakeholders *create new knowledge* to tackle emergent challenges. Kuhn (2014) refers to knowledge as “*information made meaningful and valuable with respect to evaluation and action.*” Further, Kuhn decomposes knowledge by defining information as “*data linked together in a message engineered by sender to alter a receiver’s thinking*” and data as “*objective facts regarding events.*” This definition of knowledge, and subsequent decomposition, differs from traditional management studies that see knowledge as a resource that can be exchanged and transferred between individuals (Darr et al. 1995; Easterby-Smith et al. 2008). Grounding this example in communication scholarship, we will outline a constitutive approach and potential contributions to the disaster context.

Management studies commonly view knowledge as a commodity that can be exchanged or traded. In this perspective, communication is seen as an information processing and transmission tool through which knowledge is moved (Ashcraft et al. 2009). In the disaster context, knowledge would transfer unchanged from one stakeholder to another under this framework. This theory breaks down when we consider different forms of knowledge that arise, such as implicit and explicit. For example, the case of implicit knowledge requires interpretation from a receiver which may include piecing explicit knowledge together. This is further complicated when we consider the different lenses through which senders and receivers approach transferring knowledge. A constitutive approach begins to tackle these complexities by viewing communication as more than just the interface of knowledge. Fundamentally, this allows for the closer examination of how actors jointly create meaning and position themselves. Deetz (1992) highlights this notion, “If communication *creates* and *maintains* organization, it is also the nexus where systems are *contested* and *dismantled.*” The later portion of this statement is of particular interest towards understanding the intersection of ‘scientific’ and local knowledge in post-disaster projects. It further allows for the re-examination of imposed participation as negotiated membership through communication practice. Rather than positing that there are two *types* of knowledge, a co-creation approach would point to communicative mechanisms that lead to individual ways of knowing. This has particularly strong implications for understanding how solutions emerge from this knowledge and are recognized and justified through communication (Kuhn 2014).

Balancing Local and Expert Knowledge

While past studies have examined conflict between sources of knowledge (Fischer 2000), rapidly changing humanitarian structures have established new norms for operating in post-disaster environments that require the re-examination of participatory processes. There is growing evidence from new practices, such as homeowner managed reconstruction, which suggests that local knowledge, in the form of personal connections and a working understanding of the local economy, may be key to reduce costs, improve construction time and mitigate future disaster risk (USAID 2012). It has repeatedly been demonstrated that these decentralized models are more efficient, at least by organizationally defined metrics, yet centralized management has remained a steadfast component of most organizational reconstruction programs. Understanding how stakeholders are communicating knowledge, and their interpretation of this knowledge, holds potential to bring to light barriers limiting adoption of local knowledge into programming.

Traditional literature has viewed local and expert knowledge as merely a transactional tradeoff – increasing incorporation of one equates to a decrease in the other. A primary departure of this paper seeks to understand knowledge as co-created through communicative acts. This dynamic view of knowledge means that no two organizations will get the same outcomes from a co-creation process, moving discussions in the literature from a content focused view of knowledge to one that is process oriented.

METHOD

Employing case study methodology, we focus on the co-created communicative processes that arise in construction activities between non-governmental organizations, government agencies and communities. We expand on the participation processes, focusing on the communicative exchange between stakeholders, desired criteria and social pressures. Because multi-stakeholder communication is process oriented, we have selected case study methodology, which is ideal for investigating process oriented research (Hartley 2004).

Data Collection

Over a four-month period from May to September 2014, we conducted 32 semi-structured interviews with NGO staff, local government officials and community members affected by, or responding to, Typhoon Haiyan. These participants were selected using snowball sampling techniques to identify stakeholders involved in reconstruction projects in three regions: Cebu, Leyte and Eastern Samar. These regions were selected after careful consultation with organizations working on the ground to achieve variance in program strategies. The objective of actively seeking differences in organizational strategies and similarities in physical and socio-cultural factors of communities was the primary driver in identifying research participants. This resulted in the selection of 20 housing reconstruction programs that spanned across 19 barangays, the lowest political division in the Philippines. Participants stemmed from 15 international and domestic NGOs, 3 local government units (LGUs), the Shelter Cluster and the WASH Cluster. The two cluster organizations selected were part of 11 coordinating bodies under the United Nations humanitarian coordination system that were deployed in response efforts.

Interview questions during this initial fieldwork focused on understanding organizational actions in the early planning and design of infrastructure consisting of, but not limited to, housing, water and sanitation. The large majority of this infrastructure consisted of community level systems with a focus on housing, which was prioritized by many organizations. Examples of interview questions included *“What processes did you use to make decisions, create designs and facilitate feedback from other organizations and communities?”* Interviews with homeowners were conducted in Waray or Bisaya, the local languages of respective regions. In addition to interviews, field notes were recorded from daily observation of reconstruction projects, cluster coordination meetings and internal organization meetings. These notes included key features of dialogue between individuals interviewed as well as additional stakeholders involved in reconstruction efforts. Finally, cluster policy documents, meeting minutes, recovery plans and technical communication documents were also collected.

A second field visit was conducted over a three-month period from January to March of 2015, during which an additional 167 interviews were conducted with stakeholders. These participants were associated with 26 local and international NGOs, 2 LGUs and homeowners from 19 communities. Individuals were selected based on continuing reconstruction efforts in communities selected during the first phase. In addition to continuing work that sought to capture organizational strategies, interviews sought to understand how stakeholders were participating

during ongoing recovery processes. In order to ensure the validity of personal accounts, interview data was triangulated with participant observation and documentation (Stake 1995). Observations included cluster coordination meetings, organizational planning meetings, on-site construction and informal gatherings of NGO and government staff. Similar documentation from the first phase was also collected.

Analysis

Interviews were translated, transcribed and then imported into NVivo qualitative coding software where data was systematically coded (Bernard 2012) into thematic categories consisting of (1) decision-making, (2) implementation and (3) evaluation. These categories were derived from theoretical archetypes of participation (Cohen and Uphoff 1980). The coding process focused on characterizing who was involved in the each of these processes, when dialogue between stakeholders occurred, how the processes unfolded and the outcomes resulting from communicative exchanges. After this initial analysis, coding was then grouped into themes by three stakeholder groups: (1) non-governmental organizations, (2) government agencies and (3) communities.

In order to verify coding, the fourth author completed coding on a 20% data sample, drawing from one NGO or government agency interview and one homeowner interview from each of the 20 selected communities. Coding was completed independently prior to inter-coder comparison to verify themes in the data (Campbell et al. 2013). Inter-rater reliability scores in the form of Cohen's Kappa coefficient were computed for comparison. Kappa coefficients, statistical measures of inter-coder reliability, represent a more robust measure over simple agreement measures as they take into consideration the amount of agreement between coders that is likely to occur by chance. Values in excess of 0.75 represent excellent agreement between coders, greater than 0.4 is generally considered acceptable and lower than 0.4 is consider poor agreement (QSR 2015). For all interviews where the Kappa score fell below 0.4, coding was revisited until consensus could be reached between coders.

FINDINGS

Using a constitutive perspective to analyze knowledge, the process of participation becomes clearer. On one end, NGOs envisioned the following, *"We would like to involve the community as much as possible in the building process. We think it is important to involve them so they have a sense of ownership with their houses and involvement in the community."* The realities were often much different, such as the following quote from a homeowner, *"There was even this time when the supplier of the materials requested us to help them carry the hollow blocks [concrete masonry units]. We didn't mind at all, anyway it was us who will benefit from the project, but the engineer put it off saying that carrying the materials isn't part of our obligation during the construction of the housing."* In this case, we can see that participation is not as simple as previous literature might suggest. This constitutive perspective departs from imposed notions of participation and moves toward a framework which sees action contested through communication. We will discuss findings in three sections which correspond to respective stakeholders, including NGOs, government agencies and communities.

Non-Governmental Organizations

Despite organizational strategy that emphasized equal membership on the surface, organizational communication consistently undervalued participation of government agencies and communities. This was primarily the result of unidirectional communication and the reliance on

textual sources. Notably, the manner in which homeowners were engaged dictated their participation. Rather than present material options as open ended discussions, input was framed in terms of acceptance of drafted plans and decisions. In pre-construction planning of housing, this process was described by an NGO project manager: *“So this is the design of our engineers. They design it and then we call for the community assembly to present this type of design. We have to consider that people should know what the design is because, you know, the cultural aspect, like for example, the beliefs of where should be the door. So we give them the chance to evaluate the design and then they have to consider their beliefs and then we will take note of that and go back to our engineer and tell him to replace the design because there is a belief in that community that the door should not be there and it should be like that. The people should participate in evaluating before we implement.”* A constitutive lens sees this processes as fundamentally different from traditional participation theory. The organization’s simple act of preparing an initial design limited joint control. As result, it became substantially more difficult for community members to challenge designs and provide constructive modifications. Further, carrying out this process at a community assembly led to a uniform membership of community, when in fact, the decision outcome was at the household level.

Of the 149 homeowners interviewed, 78% said they were informed of materials that would be used prior to the start of construction. The remainder did not find out material selections made by organizations until after construction had already commenced, or in some cases, not until they moved into the new home. When asked if they were content with the materials selected, only 56% of homeowners said they were satisfied with the option selected, citing durability or strength of the materials as major concerns. This aligns with past theory which links early participation with housing satisfaction (Davidson et al. 2007). One homeowner expanded on this disconnect in local and expert knowledge, *“They say the wood should be of good quality, but that is a contradiction for it is only coconut lumber that was used.”* Only 6% of homeowners said they viewed their role in selecting materials as participatory. It was common to hear answers such as: *“No, they did not ask for suggestions. The design shown to us was already final.”* This highlights that communication was largely unidirectional from organizations to communities, which resulted in membership that failed to represent community priorities and positioned organizational interests. Here, we can follow the path of how communication shapes perceptions of knowledge, which in turn impacts participation and ultimately affects infrastructure maintenance and operation.

While the aggregation of households and pre-determined designs were two primary means of reinforcing NGO membership in reconstruction projects; the second communicative practice which reinforced organizational positioning was the use of documentation. During preliminary discussions, NGOs frequently used engineering drawings as the medium through which housing designs were discussed with homeowners. Communication through technical documentation placed homeowners at a disadvantage and suppressed any benefit that might have been derived from this attempt to share decision-making and reinforced deeply engrained power dynamics. This resulted in misaligned understanding of the *quality* of construction being delivered, such as one homeowner commented, *“From that picture you cannot see the quality of the house construction just like this, take a look at this. (Shows the part of the house) But of course, we had to accept the house, for they say this house is being given; while the land on the other hand, we have to pay for 10 years.”* The use of engineering drawings can be seen as a communicative mechanism which controlled participation. Drawings were not the only source of textual authority that organizations drew upon to reinforce their authority however. It was common for organizations to utilize memorandum of understandings (MOAs) and other written agreements. When asked if the MOA

was explained to one homeowner, we received the response, “*No, we were only asked to sign it.*” Few, if any, homeowners were able to comprehend these complex technical texts. To organizations, there was an assumption that a homeowner’s signature constituted knowing of their obligations. The ability to understand these textual sources isolated membership exclusively to the organizations that were delivering services.

Government Agencies

For government agencies, participation was largely passive. Metaphorically, however, governments held the role of shepherds; they remained on the periphery with a watchful eye over reconstruction efforts by external organizations. One homeowner described NGO interactions with their barangay government, “*They did consult the barangay council during their courtesy call but that was basically it. All throughout the other processes of program implementation they never consulted with the council.*” The exception to this was coordination meetings. Early in the response efforts, attendance of meetings and engagement with NGOs was common, however this quickly faded. As one mayor described, “*Before we used to have coordination meetings but it is very tiring to do it because you know they tell you one thing and they are doing a different thing. So it is better that I leave you alone because what can I do? If I tell them the truth, I might hurt their feelings and they might go somewhere else and do the stuff anyway.*” For governments, relinquishing their membership for assurance of aid was an acceptable tradeoff, even if that meant compromising on their desires for infrastructure provision. Coordination meetings were familiar ground for NGOs who employed humanitarian terminology and protocols. This led to the formation of subgroups along national and language boundaries. At one such meeting observed, all of the Filipino nationals filled the seats on one side of the room, while expatriate staff occupied seats on the other half. Despite communication as a divider, these same protocols that isolated government agencies also provided an anchor for government agencies to regain membership when required. One described this, “*During the shelter cluster meeting, they were bragging that their plan is the SPHERE standard, but after that...look at their houses, is that their standard?*” In this example, humanitarian standards provided a means to communicate dissatisfaction of projects when limits were exceeded. Governments commonly aligned themselves outside of defined project boundaries to limit their exposure to uncertainty in discourse with NGOs.

Communities

Involvement of communities in construction labor is one of the principal forms participation utilized in development projects and disaster recovery programs. Despite this prevalence, little attention is typically given to how labor contributions are *communicated*. The precursor to actionable labor is the communication of requirements and purpose. The communication of beneficiaries as equals was of key importance to achieve buy-in from homeowners on sweat equity, described by one homeowner, “*During our meeting with [NGO] and the mayor, they talked about the beneficiaries’ counterpart during the project implementation. The next meeting was followed on the relocation site where we talked about the sweat equity and start of work. Once the sweat equity started we worked 6 days a week, even on Saturdays. Even after we finished our obligation, we still try to visit the site whenever we can.*” In this example, this participation was communicated as a *counterpart* to the NGO and municipality’s contributions. While these processes demonstrate a path toward achieving high levels of local participation, it became increasingly clear that there were inherent costs incurred that went unaccounted for in projects. The absence of communicating *who* participates reinforced gender inequalities in communities. A large percent of sweat equity contributions were from women; these positions hindered economic recovery for the female workforce as the participation in housing

reconstruction was unpaid and did not offer a path towards sustained employment in the construction sector.

Interestingly, homeowners also chose to distance themselves from membership in some cases, in stark contrast of organizational idealized intentions. For one shelter project which utilized international volunteers, a homeowner had the following to say, *“Before I used to watch them for I was amused at the foreigners entering diggings and holes. But now, I make myself scarce for they might say I do not trust in their capability to do the work.”* This trust concern was confounded by language barriers as another homeowner described, *“They could not really understand Waray (local language). We just follow their plan, because when they plan that’s it. We cannot alter it. We can just be grateful.”* By removing themselves from direct participation, homeowners chose to limit their resource input, knowing that the gap would be filled by aid organizations or local government. In striving to achieve local knowledge inclusion into disaster risk reduction, this is a major barrier that must be overcome. It suggests that there is a reinforcing loop between organizational reliance on scientific knowledge as the basis of decisions and uncertainty avoidance on behalf of homeowners.

In contrast, for other segments of communities, membership in organizing was a positive attribute because of the benefits and legitimacy that were carried. For example, one NGO observed the following of their project, *“Actually there this a misconception in the barangay, they call them [NGO] carpenters when one of our foreman recommend the carpenters. We are trying to correct that [NGO] doesn’t have carpenters in repairing houses or that we are providing to you. They are not [NGO] carpenters.”* In this case, community carpenters saw it as a positive trait to position themselves within project boundaries. This is yet another instance where communication provides value in expanding how the process of participation unfolds. The ability to communicate legitimacy by association could be a valued mechanism to future participatory engagement strategies.

CONCLUSIONS

Drawing from communication scholarship, we have analyzed post-disaster participation processes at the interface of local and expert knowledge. Findings demonstrate that communication practice influences the way in which NGOs, government agencies and communities participate. NGOs used communication as a way to retain central membership and control planning and design of projects. Government agencies relied on partner communication to balance and supervise infrastructure reconstruction from a removed role. Similarly, communities distance themselves from central participation as a means of uncertainty avoidance. In the cases analyzed, documentation and language shows us the importance to find a communication medium which balances the scales for stakeholders. Using a constitutive perspective, we have added a new lens through which stakeholder participation in disaster recovery can be framed. In particular, this shows us that knowledge is co-created, but retains individual ways of knowing and explaining the social interactions incorporated into disaster reconstruction. This has significant benefit in building future theory by proposing a new way to assess how participation exists. Rather than looking at participation through externally perceived value, this approach allows for a deeper understanding of the social fabric of stakeholder realities. This builds on communication scholarship by exploring linkages between types of participation.

The literature on effectiveness of participatory strategies in post-disaster recovery remains contested, at best. By understanding the communication mechanisms that stakeholders employ, we can better understand participatory processes and their connection to building community disaster

resilience. In place of participation as an outcome, participation as a process holds potential to explain shortcomings of incorporation of local knowledge. For organizations, our findings suggest that communication practice better defines participation as evaluative rather than decision control for material and design decisions. For government agencies, while active decision control may not appear to exist, the ability to enter the organizing process at critical decisions is important. Finally, for communities, the enactment of participation through implementation strategies, such as labor, appears to deliver on its promise of increasing buy-in, but may do so at the expense of equal representation.

Practically, our findings suggest that international aid organizations need to carefully consider how they communicate with local partners. Changing long-held norms will require organizations to reassess how they frame communication from the start. For project design, it is important that stakeholders are able to negotiate on a level playing field. This might mean conducting meetings in a local language, relying on non-textual sources of agreement or starting from the same level of problem understanding. Humanitarian aid in disaster response will always impose difficult operational constraints. In order to combat dwindling resources, it is imperative that organizations allocate sufficient time and resources to communication strategies in order to realize the benefits of stakeholder participation.

LIMITATIONS AND FUTURE WORK

This paper takes initial steps to explore the application of a constitutive lens of post-disaster stakeholder participation. While we have collected extensive data from one disaster case, it is important to validate the communicative mechanisms for NGOs, government agencies and communities in other contexts. Further, additional work is needed to identify emergent subgroups of stakeholders which differ in how they negotiate membership. This research also lays the foundation for future work which will explore connections between participatory processes to resilience outcomes in the 20 selected shelter construction programs. The longitudinal evolution of participation in disasters holds critical insights for disaster risk reduction and resilience.

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