

Sinabung volcano: how culture shapes community resilience

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Abstract

Purpose – The purpose of this paper is to explore how culture, including traditions and social structures, can influence resilience and how culturally sensitive relief operations can put affected people and their context at the core of any interventions.

Design/methodology/approach – A case study of the Mt Sinabung volcano area in Indonesia was undertaken. As part of the case study, an analysis of interventions was conducted, which was complemented by semi-structured interviews with Karo cultural experts and humanitarian organisations.

Findings – Culture influences the manner in which the Karo people react to volcano eruptions with varying implications for recovery. In addition, relief organisations which understand people's actions through a cultural lens have better managed to tailor programs with long-term impact, thereby avoiding aid dependency.

Practical implications – Practical examples of disaster management activities that adequately account for the beneficiaries' way of living prior to the eruptions are provided. Aid actors are provided with guidance concerning how to better tailor their activities in line with a cultural lens.

Originality/value – The study provides empirical grounding for claims concerning the role of culture in planning interventions in Indonesia and other similar contexts.

Keywords Volcanic eruption, Resilience, Recovery, Culture, North Sumatra, Karo, Mt Sinabung

Paper type Research paper

1. Introduction

Since 1970 the Asia-Pacific area has been impacted by more than 5,000 disasters causing 2bn deaths and affecting around 6bn people (UNESCAP, 2015). Indonesia is the fourth most populated and one of the most prone country to natural hazards in the world. There are currently 127 active volcanoes in the country. Another peculiarity of Indonesia is its internal diversity, with around 300 distinct ethnic groups and 742 different languages and dialects (Birkmann, 2008) (Figure 1).

One of the most active volcanoes in Indonesia, Mt Sinabung, is located in north Sumatra. It was categorised as “dormant” due to its 400 years long inactivity, until it suddenly erupted on 29 August 2010. The Karo District Local Disaster Management Agency (BPBD-Badan Penanggulangan Bencana Daerah), officially declared local emergency status, the lowest level of emergency. As the volcano continued to erupt, in 2013 the Volcanology and Geological Hazard Mitigation Centre (CVGHM) raised the alert to the highest level (Enia, 2016). This led to temporary forced evacuation of around 40 villages and to the destruction of three

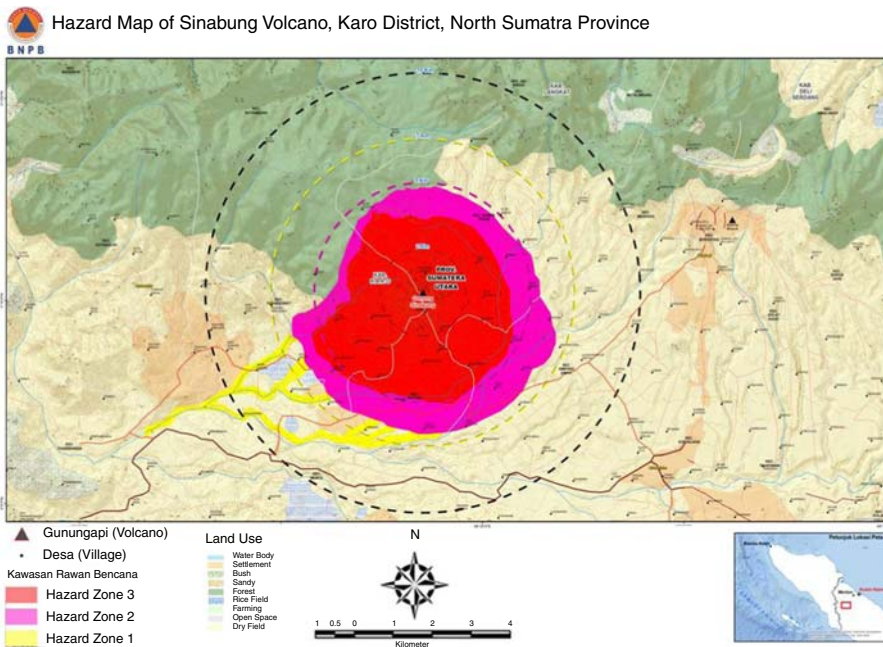


of them. The disaster management capacity was slowed by the late establishment, on 22 January 2014, of Tanah Karo District BPBD with limited resources and capacity (OED–FAO, 2017).

The CVGHM warned villagers and tourists not to enter the 3 km radius from the summit and banned any activities within 7 km in the south-southeast-east sector and 4 km in the north-east sector (The Jakarta Post, 2017). Nevertheless, the volcanic eruptions killed seven people in 2016 (Sullivan and Sagala, 2016). Displaced communities were categorised as: relocated in Siosar (370 households), independently relocated (supposedly 1,903 households) and temporarily evacuated (2,592 households) (OED–FAO, 2017) (Plate 1).

Before the disaster, the land around Mt Sinabung was rich and fertile contributing to Sumatra leading role as vegetables and oranges producer. Since 2010 ash has covered tens of thousands of hectares of farmland and gas has ruined crops, causing economic losses of around IDR 1.49 trillion by December 2014 (Enia, 2016). Livestock farming was the second most common income activity, but the eruptions pushed many villagers to sell cattle for a low price or to abandon them (OED–FAO, 2017).

This paper traces the role of culture in the process of resilience building within the Karo community and, in wider terms, the effectiveness of culturally sensitive aid programmes aiming at improving disaster management practices (Vanhoebrouck and Sagala, 2010). Following in a recent tradition of research addressing how the cultural lens influences perception of risks and how they are mitigated (Wisner *et al.*, 1977), the paper aims to illuminate the culturally mediated actions of the Karo people, located in an eruption-prone area, *vis-à-vis* the programming of INGOs, NGOs (international non-governmental organisations and non-governmental organisations) and the local government. A sketch of the relationship between the concepts of resilience and culture throughout the aid and development literature is provided followed by an account of the Karo culture and its particularities. After an overview of the methodology, the results are presented and discussed.



Source: BNPB (2015)

Figure 1.
Mt Sinabung location



Plate 1.
Relocation site

Source: Ginting (2018)

2. Culture, resilience and their relationship in the literature

A cultural turn has been identified within disaster research in recent years due to the increased attention to how culture mediates disasters and exacerbates or mitigates their impact. The interplay of belief and knowledge systems of various kinds and the importance of how external actors engage with indigenous knowledge has undergone a resurgence within the literature (Bankoff, 2003; Mercer and Kelman, 2012; Ager and Ager, 2015; Wilkinson, 2018). These developments are reflected to a certain extent in the wider policy architecture of the humanitarian sector which has increasingly recognised the importance of placing affected people at the centre (WHS, 2016). By shifting the focus from short-term disaster management to longer-term disaster risk management in the Sendai Framework for Disaster Risk Reduction (DRR) 2015–2030 greater space is provided for wider structural determinants of vulnerability, including cultural considerations (United Nations, 2015).

Nonetheless, the social and cultural determinants of the nature and extent of disasters, including those driven by volcanic hazards, often have still not been sufficiently acknowledged within research relating to volcanic hazards vulnerability (Maldonado, 2016; Usamah and Haynes, 2012; Krüger *et al.*, 2015). Integrating different knowledge types and experiences to avoid a technical-reductionist framework helps to design projects, which will not be temporary impositions from outsiders but will permeate beneficiaries' everyday lives (Wisner *et al.*, 1977; Mercer and Kelman, 2010; Weichselgartner and Kelman, 2015). From a macro-sociological perspective, it has been claimed that achieving cultural resilience means perceiving the community as:

[...] social relations, combinations of mutual practices, systems of power, resources access and social roles, social functions, cultural meanings, and ties of support and trust among the local population and the institutional agencies. (Lucini, 2014, p. 154)

2.1 *Conceptualization of culture*

Culture is an ever-changing process, as the adaptation practices, both visible and intangible, conducted for millennia by populations prone to disasters have proved (Maldonado, 2016). Culture is liquid and influences every aspect of human existence. The complexity of this concept, particularly within the context of disaster, renders a clear definition elusive. However, when the cultural embeddedness of catastrophes is overlooked, then the nature and extent of disaster impacts cannot be fully understood (Hewitt, 2012). People tend to adapt actively and creatively to contain risks affecting the areas in which they are accustomed to live because of the repetitiveness and the predictability of certain hazards. The recurrence of risk can be an important driver of both destructive and positively transformative cultural change in the areas of politics, economics and society (Krüger *et al.*, 2015). Thus, on the one hand, there are aspects of culture which make it a dynamic and liquid feature of society, but on the other hand there are characteristics of it that resist change because they represent the core identity of that society (Hufford, cited in Maldonado, 2016, p. 53). Much literature underlines the importance that social capital, in terms of social networks, shared values and behaviours, has in promoting the recovery of community after a collective trauma (Aldrich, 2012). These social relations and mechanisms inherited over generations are unique characteristics of communities prior to hazards and can be beneficial to the group, but not unambiguously so in every context (Aldrich, 2011). Despite this complexity, the cultural lens remain indispensable because it aids in clarifying what may *prima facie* appear irrational, for example emotional attachment to hometowns and livelihoods, gender roles, links within a community and characteristics which render people to opt to live in a commonly considered disaster-prone area (Dove, 2008; IFRC, 2014; Krüger *et al.*, 2015).

2.2 *Conceptualization of resilience*

There is no consensus on a definition of resilience across the aid community. Resilience, originating etymologically from the Latin term *resilio* (to bounce back), is now a widely used term adopted to promote cooperation between the humanitarian and development sectors. In the lucid overview of the first steps of a multidisciplinary narrative of resilience, Manyena (2006) puts the origins of this term either in ecology, child psychology or physics where it has been used to describe the capacity of certain elements to return to their original state of equilibrium in case of imposed stress (Barrios, 2014; Barrios, 2016).

Despite the latest articulation of the definition of resilience by UNISDR (2009, p. 24), the concept remains subject to multiple interpretations. These diverse definitions of resilience often conflict with one another. For some, resilience is an ontological feature of communities as an inherent capacity that is catalysed by crisis. For others, it is a phenomenological process built over time. Yet, others view resilience not only as adaptation towards difficulties of existence through change, but also as resistance to those adversities through fighting this change (CARRI, 2013); and finally, it has been defined as outcome oriented or process oriented. When viewing resilience as an outcome, the reinforcement of a more traditional disaster management reactive approach takes place, programmes try to maintain the status quo, emphasis is put on bouncing back and coping and essential DRR activities such as community capacity building and disaster preparedness are not considered. On the other hand, resilience as a process “places emphasis on the human role in disasters. Put differently, resilience is not a science, nor does it deal with regularities in our experience, but rather, it is an art that addresses singularities as we experience them” (Manyena, 2006, p. 439).

Being aware of the relationship between vulnerability and resilience within each given context is essential (Gaillard, 2010; Weichselgartner and Kelman, 2015). Every subject has some degrees of vulnerability and resilience, which are considered a response to changes and their interaction depends on each context. Estimating vulnerability by considering solely

physical and economic risks has been heavily critiqued within the disaster management sector. The resilience concept, enriched by a specific focus on community culture and context, allows DRR interventions to consider social, organisational and institutional aspects. As a result, this helps the aid community to obtain a more complete understanding of risk and vulnerability and recognise community's coping capacities (Field, 2017; Manyena, 2006). These understandings have been particularly taken into account within research relating to volcanic hazards (Mercer and Kelman, 2010, 2012; Usamah and Haynes, 2012).

3. The Karo culture

The Karo are a clan and agriculture-centred society composed of five *merga* (clans) which determine the entire order of social life, the *Merga Si Lima* (Kushnick, 2006). There is no hierarchy among clans, neither discrimination nor special status, and they are bound to one another through inter-marriage (Slaat and Portier, 1992). The most important kinship connections are: *sukut agnate*, the person sharing male ancestors; *kalimbubu*, the wife-giver; and *anak-beru*, the wife-receiver. The Karo society places great emphasis on the creation and maintenance of the unity of *sangkep si telu*, the completeness of the three holding together the entire society and fostering a form of egalitarianism (Kushnick, 2006; Slaat and Portier, 1992). The set of rules, behaviours and actions directly influenced by those regulations which shape the kinship system are at the foundation of Karo society.

The Karo kinship system is predominantly patrilineal. Women are traditionally responsible for the private sphere, including family and financial management. From a young age, Karonese women are taught to help with domestic tasks in order to be prepared for marriage. From a general perspective, women in Indonesia feel a sense of duty and sacrifice towards their families. For this reason, in addition to domestic work, Karo women also labour in the fields. Furthermore, as a result both of an unequal access to knowledge and of custom, men have a main role in conducting ceremonies and in solving community issues. On the other hand, through wife-receiving the clan is perpetuated and alliances and bonds are formed among clans.

Taneh Karo derives its prosperity from two sources: its favourable location and Dutch capitalism. The fertility of the volcanic topsoil and the tropical climate, without extreme seasonality, are optimal conditions for cash crops and rice, vegetables and red pepper for own consumption and market (Kushnick, 2006). Nowadays, Karo living in urban areas tend to be small entrepreneurs, owners of vehicles and drivers and those with higher educational backgrounds to enter the professions (Marbun, 2009). However, a limited number of people conduct activities outside crop farming and livestock caring. The little variety in terms of occupation within villages, the wealth brought by good harvests and the ancestral attachment to farming resulted in the constitution of a system of rights to protect the land mirroring the Karo societal structure. If the land has been inherited from patrilineal ancestors, there is a sacred bond and it cannot be sold but needs to be managed by the male members of the group. While the territory has been passed over by the *kalimbubu*, the woman can use the land throughout her entire life (Slaat and Portier, 1992).

Karo sense of unity is reflected in the *runggun*, an institutionalized process of decision making by consensus used for settlements between parties or individuals. Through it, Karo individuals are underlining their unity as society, where each person's opinions are weighted according to their ability to contribute to the common good. The overall goal is always the community's harmony as a living unit according to the concept of *kebulatan kehendak*, the roundness of the wills that represents the wisdom of communal decisions (Van den Steenhoven, 1973). Recently however, many people use the official governmental channel to address land issues that might arise because of the length of this process (Slaat and Portier, 1992). Another proof of this communal characteristic typical of Karo villages is the *jambur*, men's gathering, a communal facility built at the centre of the village and used for customary deliberations and traditional ceremonies such as weddings or funerals.

A form of animism called *agama pemena* was the Karo's original religion that featured the adoration of spirits, cosmology and ancestor worship. Most Karo are now either Christian or Muslim but their culture displays considerable syncretism.

4. Methodology

A single qualitative case study of the Karo people's relationship with the Mt Sinabung volcano eruptions was undertaken to pursue the paper's objective of understanding how culture, including traditions and social structures, can influence resilience and how culturally sensitive relief operations can put affected people and their context at the core of any interventions. Key informant interviews were conducted with two categories of respondents as detailed in Table I. The first category included experts of Karo culture. The second included aid organisations, United Nations agencies and NGOs, that were engaged in the response and recovery in the aftermath of the 2010 eruption. The primary objective in the selection of respondents was to achieve information power (Malterud *et al.*, 2016). These primary data were complemented by analysis of a range of secondary sources including media reports, UN and NGOs reports and project evaluations. The study involved inputs and feedbacks from several ethnic Karo experts.

5. Results and discussion

There are several Karo cultural features that have served to both facilitate and obstruct the recovery of those affected by the Mount Sinabung's eruption. These features include its strong social bonds and cohesion, its traditional agricultural practices and gender roles.

5.1 Social cohesion and fracture

The Karo people's sense of village belongingness has served to activate mutual assistance mechanisms, but only within villages and kinship structures. Groups that prefer a communal way of living rather than an individualistic one find sources of growth within the sense of togetherness. The concept of *Tutur Siwaluh*, meaning brotherhood, helped the Karo villages that were independently relocated or displaced to the newly formed Siosar IDP camp (Wulandari *et al.*, 2018). The Karo have always shown a strong sense of self-help and mutual assistance in terms of kinship and their society organisation, which reflects clan affiliation.

Karo kinship and unity displays similarity with *gotong royong*, a common practice in Indonesian culture where community's cooperation is possible through consensus and collective deliberation (Effendi, 2013). Communities near Mt Merapi and Mt Kelud volcanoes helped each other reconstruct houses destroyed by eruptions and clean ash fall deposits, which gave a significant contribution for recovery process (Andreastuti *et al.*, 2016; Lestari *et al.*, 2012; Mei *et al.*, 2016). Similar cooperation for logistics preparation in IDP camps was also apparent during Mt Sinabung post-disaster recovery process (Andreastuti *et al.*, 2016). However, in the present case the pattern of strong kinship ties can lead to tensions within broader communities as the Karo are not willing to resettle with others, preventing the success of the independent relocation approach and displaying disunity outside their own village. This finding supports the literature concerning the somewhat ambiguous contribution of social capital to resilience.

UNDP, which had stronger contacts with governmental institutions than with the affected population, tried to communicate to the government the importance of taking into account Karo cultural background within the relocation process. Although the government's aim was to rapidly apply the independent relocation scheme, distributing money to rent or buy a house, it was not feasible. According to the Karo cultural identity, moving to another village meant engaging in a cultural process which could not be quickly imposed, but required consultation and dialogue with the communities to be relocated and those in the area to which the relocation was being undertaken.

Key informant	Organisation	Key information
Project and Programme Manager	United Nations Development Program (UNDP)	Coordinating role within the multi-agency SIRESUP initiative (Mt Sinabung Recovery Support Programme) with ILO and FAO, strong cooperation with the government
Local Project Coordinator	International Labour Organization (ILO)	Responsible for trainings on sewing, automotive services and light meal production as alternative livelihood to recover from eruptions
Indonesia Programme Staff, support projects monitoring	Food and Agriculture Organization (FAO)	Leading the restoration of livelihood through agriculture and trainings for alternative agricultural cultivation that is resistant to volcanic ashes
Preparedness and Response Unit and Regional Disaster Response Adviser, Head of Regional Office	United Nations Office for the Coordination of Humanitarian Affairs (UNOCHA)	Coordinating and cooperating with all actors involved. It witnessed the general collective solidarity across displaced communities
Executive Director	Yayasan Pusaka Indonesia (YPI) (NGO)	Conducted immediate response targeting evacuation centres and recovery activities such as cash grant distribution
Executive Director	Pendidikan Khusus Profesi Advokat (PKPA) (NGO)	Responsible for an alternative livelihood community programme involving quails breeding
Project Coordinator	Indonesia Bhadra Utama (Ibu) Foundation (NGO)	Supported an Internally Displaced People (IDPs) camp in partnership with a Sumatra based organisation, through beneficiary-led WASH (water, sanitation and hygiene) activities, psychological and psychosocial assistance (crafting and supporting religious initiative) and volunteers' training on DRR
Expert	Karo Culture	Karo 5 clans society, kinship system, sense of brotherhood within villages and mutual assistance mechanisms
Expert	Karo Culture	The importance of communal traditions and buildings as Jambur
Expert	Karo Culture	Difficulty to be competitive in business-like activities not connected to farming
Scholar and Lecturer	University of Leiden	The resilience within the extended family connections and communal way of living. Role and importance of religion to the Karo
PhD in Karo ethnomusicology and customs, traditions	University of North Sumatra	Centrality of agriculture and farming. The role of women within Karo culture

Table I.
Profile of
key informant
participants, 2017

The government and the aid machinery cannot ignore Karo's difficulties in merging different villages because of their sense of solidarity only within kinship, but they need to find a balance between the Karo willingness of helping each other and the obligations that a volcano erupting brings to them. A territorial identity needs to be safeguarded, but in case of altered conditions a certain degree of change needs to be implemented, as long as it is not subversive:

The village is a group of family members, moving from one village to another requires a cultural process; they need approval from the community leader [...] there are cultural barriers that government needs to address. UNDP needs to give the government the background concerning how to convince the community to receive new members [...]. (Respondent, UNDP)

However, social cohesion is also a facilitator of learning, particularly when adapted to the cultural context:

Karo people are not individualistic; they do communal things and have strong family bonds. If we give capacity as community, the sustainability will be higher than with individual activities. They can learn from each other and cope with problems by themselves. (Respondent, PKPA)

The most direct way to address beneficiaries and to give them ownership of their resilience is through the facilitation of communal initiatives. Both the Bandung-based NGO Ibu Foundation and UN agency ILO engaged in these initiatives. Ibu Foundation with its 15 years of experience in the field of post-disaster emergency assistance supported IDPs in their effort to lead WASH activities in the “Posko Pengungsian Lapangan Futsal Kabanjahe” camp. The engagement of beneficiaries was strong (seven toilets and two bathrooms were completed in less than two weeks) and this helped cultivate a sense of ownership and normalcy (Ibu Foundation, 2014). ILO, using its long standing expertise in the transmission of hard and soft skills to improve technical knowledge and practical abilities such as administration, marketing and financial calculation to build the capacity of micro and small enterprises and ultimately to recover from the eruption, supported the IDPs to establish a cooperative in Siosar as previously the nearest market was 17 km away. Now by providing basic goods to stimulate the business, like building a store, creating a small market, distributing grocery and conducting training on bookkeeping, the living conditions in the area and the sense of cohesion improved (ILO, 2017).

5.2 Agriculture, wealth and livelihood diversification

The Karo ancestral attachment to agriculture, as a mean not only of mere survival, but also of wealth, hinders the diversification of livelihood after the volcanic eruption resulted in vast swathes of Karo land being covered in ash. Nonetheless, as they are experienced in this activity and it is part of their identity, they welcome any interventions designed to promote livelihoods connected to it such as food processing. With the scarcity of land some are also willing to engage in business activities as long as they are complemented with farming. On the other hand, because before the eruption they had been wealthy landowners who generated significant revenue with a single harvest, they find it difficult to readjust to the new condition of poverty and tend to mismanage their money, particularly the case of men.

This two-fold implication of Karo traditional attachment to farming has been identified by needs assessments and by the UN organisations (ILO, UNDP and FAO) involved in the SIRESUP programme which was developed in collaboration with the local government to promote recovery. In order to address livelihood diversification, ILO, aware of the limited willingness of Karo population to radically change their traditions, decided to adapt its livelihood diversification activities. As a small-scale project, it transforms the livelihood of not more than a dozen beneficiaries. It is on trial, meaning that it will be continued only if the quality of the products and the market will be stable. ILO cooperated with FAO in conducting trainings about food processing businesses in order not to distance their activities too much from agriculture:

Most of our beneficiaries are also ILO's [...] farmers who have been trained in creating the product by us are then trained by ILO in managing the product when entering the market, how to finance it [...]. (Respondent, FAO)

FAO held alternative cultivation trainings, which gave Karo the opportunity, despite the scarcity of land, to cultivate ash and heat resistant crops. Agriculture and the routines and practices involved are central to the Karo. Even if some might have adjusted to alternative income, doing what for generations they have been used to do is much more reassuring in an environment which keeps on changing.

Again, the NGO PKPA, through a context analysis, realized that its project on alternative livelihood (quails breeding) had to use a community training approach in order to be successful. This meant that they had to address a community of farmers in each of the three villages which composed Siosar camp, instead of targeting individual farmers.

One of the ILO's main focuses within the joint programme was financial literacy. Throughout its experience among the Karo IDPs, the UN agency noticed how despite the disaster and subsequent relocation, people were still engaged in gambling, spending money on new clothes for traditional celebrations or simply eating at the restaurant because they did not like the rice distributed by the government thinking they would return to their lands soon. Financial literacy within business and alternative cultivation trainings was a core focus of both FAO and ILO to address the gap concerning livelihood activities left by the Renaksi, the governmental recovery plan.

5.3 Impact of disaster on traditional gender relations

Karo society is patrilineal and the division of work is not equally distributed between men and women. Nonetheless, women's roles as housekeepers and family carers give them a prominent role in the community as they take responsibility for the household finances, both through the management of finances, including grants provided by aid organisations, and through working on farms. Despite traditional Indonesian roles, the decline of farming and the requirement to diversify livelihoods the labour market participation of women has increased:

Now often we see that women are involved in outside jobs, livelihood activities and domestic care [...] Women have a strong influence because they are hard workers and do multitasking jobs [sic] [...]. (Respondent, Karo expert)

ILO addressed the confinement of women's role through livelihood diversification trainings, which has given the opportunity to single women to be able to conduct sewing activities at home and simultaneously take care of their children (ILO, 2017). Similarly, the NGO Yayasan Pusaka Indonesia enhanced their status of family finance manager and faced the gambling issue among Karo men by targeting only women for a cash grant programme:

It is usual for men to gamble after work, every day in the village coffee shop, playing cards for money. In our project we delivered cash grants by inviting just women to collect them because we know about the habit [...] all the women said not to give the money to the men, they would not come home and will gamble. (Respondent, YPI)

It is well recognised that disasters are gendered events (Reyes and Lu, 2016; Bradshaw and Fordham, 2015). However, the literature has tended to focus on the detrimental impacts on women and girls rather than the enabling dimension. With the loss of agricultural lands, decline in farming as a feasible livelihood, the Sinabung eruptions, together with the response of external actors, can be seen as having a net redistributive socio-economic impact in terms of gender relations. While the negative impact of disaster on the position of women has been well-documented, the favourable shifts in gender relations that the impact of a disaster and recovery interventions can facilitate for women ought to be subject to greater investigation.

5.4 Religion, spirituality and post-traumatic growth

Post-traumatic growth in response to suffering has been documented in several post-disaster contexts, for example in the aftermath of the Merapi eruption of 2010 (Subandi *et al.*, 2014). In the Sinabung context, Karo have obtained solace in religion, whether Christianity, Islam or animist practices. Due to its connection with a local organisation the NGO Ibu Foundation (2014) understood the positive effect that religion has on the psychological and psychosocial health of many IDPs and facilitated the community

organisation of religious activities and practices. In addition, UNDP suggested to the government to build in Siosar those facilities essential for enhancing Karo village belongingness such as churches, mosques and *Jambur*.

Providing religious space to Karo is not sufficient to recreate the environment prior to the disaster in the areas of resettlement. Karo spirituality tends to eschew the western approaches to religion that emphasises practices. Although animism is not commonly performed as before colonisation, it is still integrated into the belief system of those who consider themselves Christian or Muslim. In the face of the immense power of the volcanic hazard, they pray for protection as a cultural response to extraordinary circumstances:

After Sinabung erupted there was a traditional ritual ceremony held to request Mother Earth not to hurt the Karo. They were praying and giving offering for instance, the head of goats or chickens [...]. (Respondent, Karo expert)

However, there is no homogeneous reaction in terms of spiritual practice:

[...] with animism the disaster is a message to change the behaviour [...] they put offerings as close as possible to Mt Sinabung hoping it will reduce the potential of disaster [...] also for Christians and Muslims it is a test from God, they can escape from the situation through prayers which give them calm and positivity for future [...] there is a debate in the community: some think that the current disaster is due to the sin of Karo society such as gambling and they can stop it with praying. For others, disaster is just accepted destiny, not related to spiritual things, so there is no spiritual effort that needs to be done. (Respondent, Karo expert ù)

The literature identifies that local communities not only tend to experience a stronger religiosity and sense of togetherness in the aftermath of disasters (Christia and Helleve, 2012; Dove, 2008; Lavigne *et al.*, 2008) but can also lead to divergent spiritual explanations being articulated (Schlehe, 2010). The present case study highlights both processes: increased religiosity on the part of some and discordant interpretations of the spiritual significance of the disaster.

6. Conclusion

The paper presents an unusual case within the disasters literature as Mt Sinabung had previously been dormant for several centuries. This means that the indigenous knowledge in terms of creatively dealing with hazards, which became a common concept in the literature concerning resilience, was not present. For this reason, it has been challenging for organisations to construct alternatives for the Karo which took their cultural practices into account. Krüger *et al.* (2015) state that it is the frequency of risk which eventually encourages cultural change, emphasising the idea that culture is a liquid concept in a dynamic state. As a result of the relative novelty of the eruptions, the Karo have not shown immediate radical cultural change.

Therefore, if culture is considered, the organisations can see the disasters' consequences as socially driven. Consequently, the disaster is not addressed superficially that would provide temporary and limited solutions and would aim at merely hazard resistant communities rather than "communities able to anticipate, manage, recover and transform from shocks" (Kindra, 2013). In other words, resilience is a phenomenological process of adaptation towards difficulties of existence through both change, where it is needed, and preservation, where it is possible. This paper does not mean to romanticise culture. However, it is a powerful feature of human life that can either hinder or support a population's coping mechanisms. Getting closer to a community culture and traditions means making a step further towards efficient aid and development projects, which truly push for local resilience involving unconventional responses. Meanwhile, humanitarian organisations, which do not consider in advance cultural peculiarity while planning for activities, might be overwhelmed by the failure of common assumptions (Krüger *et al.*, 2015).

The Karo case study proved the importance of culture as the starting point to determine needs based on social understanding of a community and to support their resilience. In this field, it is essential to gather information about as many realities as possible in order to be prepared and truly see the possibilities that culture is able to shape for the resilience of affected communities. As highlighted, a community and its culture cannot in every context be considered as heterogeneous.

Disaster response and management should go beyond solely event-focused reactions in order to embrace its role as an integral part of a larger development context which does not only aim at returning to pre-disaster normality. Not integrating cultural heterogeneity in the narrative of resilience inevitably exacerbates vulnerability. To overcome a generalised-fixed vision of resilience and risk, the underlying causes of vulnerability need to be considered (Weichselgartner and Kelman, 2015, p. 262).

Placing the targeted population at the centre of every activity means weighing with care both vulnerabilities and capacities stemming from the very being of that community. For this reason, organisations need to be aware both of the forces derived from social capital, networking, local knowledge, etc., and of the vulnerabilities that these centuries old traditions are cementing into society's reactions to shocks. Simultaneously, it is important to consider that some vulnerabilities can be addressed more easily than others because they are not touching the core identity. In fact, in case they do, a cultural process involving behavioural change needs to be undertaken, thus demanding sensitivity and time (Manyena, 2006). The case study highlights once again that there is no single approach to communities affected by hazards and that it can be difficult to disentangle the features of culture contributing to resilience. Nevertheless, even if cultural features are considered obstacles to successful recovery, they cannot simply be erased and change cannot be forced. Ultimately, in order to adapt and survive after a shock, a community may be willing to change some aspects of its culture that do not infringe on its core values.

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References

- Ager, A. and Ager, J. (2015), *Faith, Secularism and Humanitarian Engagement: Finding the Place of Religion in the Support of Displaced Communities*, Palgrave Macmillan, New York, NY.
- Aldrich, D. (2011), "The power of people: social capital's role in recovery from the 1995 Kobe earthquake", *Natural Hazards*, Vol. 56 No. 3, pp. 595-611, available at: <https://doi.org/10.1007/s11069-010-9577-7> (accessed 12 October 2018).
- Aldrich, D. (2012), "Social capital in post disaster recovery: towards a resilient and compassionate East Asian community", in Sawada, Y. and Oum, S. (Eds), *Economic and Welfare Impacts of Disasters in East Asia and Policy Responses*, ERIA, Jakarta, pp. 157-178.
- Andreastuti, S., Paripurno, E.T., Gunawan, H., Budianto, A., Syahbana, D. and Pallister, J. (2016), "Character of community response to volcanic crises at Sinabung and Kelud volcanoes", *Journal of Volcanology and Geothermal Research* (in press), available at: <https://doi.org/10.1016/j.jvolgeores.2017.01.022> (accessed 28 August 2018).

- Bankoff, G. (2003), *Cultures of Disaster: Society and Natural Hazard in the Philippines*, Routledge, London.
- Barrios, R.E. (2014), "Here I'm not at ease: anthropological perspectives on community resilience", *Disasters*, Vol. 38 No. 2, pp. 329-350, available at: www.rug.nl/library/new-portal (accessed 28 August 2017).
- Barrios, R.E. (2016), "Resilience: a commentary from the vantage point of anthropology", *Annals of Anthropological Practice*, Vol. 40 No. 1, pp. 28-38, available at: www.rug.nl/library/new-portal (accessed 28 August 2017).
- Birkmann, L. (2008), "Assessing vulnerability before, during and after a natural disaster in fragile regions case study of the 2004 Indian Ocean Tsunami in Sri Lanka and Indonesia", Research Paper No. 2008/50, UNU-WIDER, Bonn, available at: www.wider.unu.edu/sites/default/files/rp2008-50.pdf (accessed 13 August 2017).
- BNPB (2015), "Peta Kawasan Rawan Bencana dan Rupabumi G. Sinabung 2015", available at: <http://geospasial.bnpb.go.id/2015/06/22/peta-kawasan-rawan-bencana-dan-rupabumi-g-sinabung-2015/> (accessed 15 February 2019).
- Bradshaw, S. and Fordham, M. (2015), "Double disaster: disaster through a gender lens", in Shroder, J.F., Manyena, B., Jayawickrama, J. and Collins, A.E. (Eds), *Hazards, Risks and Disasters in Society*, Academic Press, Cambridge, pp. 233-251.
- CARRI (2013), "Definitions of community resilience: an analysis", available at: www.resilientus.org/wp-content/uploads/2013/08/definitions-of-community-resilience.pdf (accessed 12 August 2017).
- Christia, M. and Helleve, A. (2012), "Experiences of people affected Merapi eruption in 2010: a qualitative study conducted in Krinjing village Indonesia", Master thesis, University of Oslo, Oslo.
- Dove, M.R. (2008), "Perception of volcanic eruption as agent of change on Merapi volcano, Central Java", *Journal of Volcanology and Geothermal Research*, Vol. 172 No. 3, pp. 329-337, available at: www.sciencedirect.com/science/article/abs/pii/S0377027307004246 (accessed 16 February 2018).
- Enia, J. (2016), "Rules versus discretion: comparing disaster declaration institutions in the Philippines and Indonesia", *International Journal of Disaster Risk Reduction*, Vol. 16, pp. 158-166, available at: www.sciencedirect.com/science/article/pii/S2212420915301126 (accessed 16 August 2017).
- Effendi, T.N. (2013), "Community Gotong Royong culture in current social change (in Indonesia)", *Jurnal Pemikiran Sosiologi*, Vol. 2 No. 1, pp. 1-17.
- Field, J. (2017), "What is appropriate and relevant assistance after a disaster? Accounting for culture(s) in the response to Typhoon Haiyan/Yolanda", *International Journal of Disaster Risk Reduction*, Vol. 22, pp. 335-344.
- Gaillard, J.C. (2010), "Vulnerability, capacity and resilience: perspectives for climate and development policy", *Journal of International Development*, Vol. 22 No. 2, pp. 218-232.
- Ginting, D. (2018), *Relocation Site*, photograph, RDI database, 18 February 2019.
- Hewitt, K. (2012), "Culture, hazard and disaster", in Wisner, B., Gaillard, J.C. and Kelman, I. (Eds), *The Routledge Handbook of Hazards and Disaster Risk Reduction*, Routledge, London, pp. 85-96.
- Hufford, M. (2016), "True cost collaborator: a project of the Livelihoods Knowledge Exchange Network", cited in Maldonado, J. (2016).
- Ibu Foundation (2014), "Early recovery Sinabung", available at: <http://ibufoundation.or.id/> (accessed 15 September 2017).
- IFRC (2014), "IFRC world disasters report 2014 – focus on culture and risk", video, available at: www.youtube.com/watch?v=dxAhn1dTQOg&feature=youtu.be (accessed 19 September 2017).
- ILO (2017), "After the volcano: turning disaster in opportunity", available at: www.ilo.org/jakarta/whatwedo/publications/WCMS_548370/lang-en/index.htm (accessed 5 August 2017).
- Kindra, J. (2013), "Understanding resilience", *Irinnews*, 4 March, available at: www.irinnews.org/analysis/2013/03/04/understanding-resilience (accessed 8 August 2017).

- Krüger, F., Bankoff, G., Cannon, T., Schipper, E. and Lisa, F. (2015), "Exploring the links between cultures and disasters", in Krüger, F., Bankoff, G., Cannon, T., Orłowski, B., Schipper, E. and Lisa, F. (Eds), *Cultures and Disasters: Understanding Cultural Framing in Disaster Risk Reduction*, Routledge, New York, NY, pp. 1-16.
- Kushnick, G.C. (2006), "Parent-offspring conflict among the Karo of North Sumatra", *Journal of Biosocial Science*, Vol. 41 No. 2, pp. 183-193, available at: <https://library.sydney.edu.au> (accessed 29 August 2017).
- Lavigne, F., De Coster, B., Juvin, N., Flohic, F., Gaillard, J.-C., Texier, P., Morin, J. and Sartohadi, J. (2008), "People's behaviour in the face of volcanic hazards: perspectives from Javanese communities, Indonesia", *Journal of Volcanology and Geothermal Research*, Vol. 172 Nos 3-4, pp. 273-287.
- Lestari, P., Prabowo, A. and Wibawa, A. (2012), "Manajemen Komunikasi Bencana Merapi 2010 pada saat Tanggap Darurat", *Jurnal Ilmu Komunikasi*, Vol. 10 No. 2, pp. 173-197.
- Lucini, B. (2014), "Multicultural approaches to disaster and cultural resilience. How to consider them to improve disaster management and prevention: the Italian case of two Earthquakes", *Procedia Economics and Finance*, Vol. 18, pp. 151-156, available at: www.sciencedirect.com/science/article/pii/S2212567114009253 (accessed 31 August 2017).
- Maldonado, J. (2016), "Considering culture in disaster practice", *Annals of Anthropological Practice*, Vol. 40 No. 1, pp. 52-60, available at: www.rug.nl/library/new-portal (accessed 28 August 2017).
- Malterud, K., Siersma, V.D. and Guassora, A.D. (2016), "Sample size in qualitative interview studies: guided by information power", *Qualitative Health Research*, Vol. 26 No. 13, pp. 1753-1760, available at: <https://doi.org/10.1177/1049732315617444> (accessed 15 September 2018).
- Manyena, S.B. (2006), "The concept of resilience revisited", *Disasters*, Vol. 30 No. 4, pp. 434-450, available at: <https://onlinelibrary.wiley.com/doi/abs/10.1111/j.0361-3666.2006.00331.x> (accessed 24 September 2018).
- Marbun, R.H. (2009), "A brief description of rebu in Karonese culture", available at: www.researchgate.net/publication/42354889_A_Brief_Description_Of_Rebu_In_Karonese_Culture (accessed 7 August 2017).
- Mei, E.T.W., Fajarwati, A., Hasanati, S. and Sari, I.M. (2016), "Resettlement following the 2010 Merapi Volcano eruption", *Procedia-Social and Behavioral Sciences*, Vol. 227, pp. 361-369.
- Mercer, J. and Kelman, I. (2010), "Living alongside a volcano in Baliau, Papua New Guinea", *Disaster Prevention and Management: An International Journal*, Vol. 19 No. 4, pp. 412-422, available at: <https://doi.org/10.1108/09653561011070349> (accessed 22 January 2018).
- Mercer, J. and Kelman, I. (2012), "Indigenous knowledge and disaster risk reduction", *Geography*, Vol. 97 No. 1, pp. 12-21.
- OED-FAO (2017), "Final project evaluation: Indonesia post-disaster livelihood recovery project", available at: www.fao.org/evaluation (accessed 12 August 2017).
- Reyes, D.D. and Lu, J.L. (2016), "Gender dimension in disaster situations: a case study of flood prone women in Malabon City, Metro Manila", *International Journal of Disaster Risk Reduction*, Vol. 15, pp. 162-168.
- Schlehe, J. (2010), "Anthropology of religion: disasters and the representations of tradition and modernity", *Religion*, Vol. 40 No. 2, pp. 112-120.
- Subandi, M.A., Achmad, T., Kurniati, H. and Febri, R. (2014), "Spirituality, gratitude, hope and post-traumatic growth among the survivors of the 2010 eruption of Mount Merapi in Java, Indonesia", *Australasian Journal of Disaster and Trauma Studies*, Vol. 18 No. 1, pp. 19-26.
- Sullivan, G. and Sagala, S. (2016), "Why do people still live next to an active volcano?", *The Conversation*, 26 May, available at: <http://theconversation.com/why-do-people-still-live-next-to-an-active-volcano-59947> (accessed 18 August 2017).
- Slaat, H. and Portier, K. (1992), *Traditional Decision-Making and Law: Institutions and Processes in An Indonesian Context*, Gadjah Mada University Press, Yogyakarta.

-
- The Jakarta Post (2017), "Mt. Sinabung erupts, spews ash 4km in air", *The Jakarta Post*, 20 May, available at: <http://reliefweb.int/report/indonesia/mt-sinabung-erupts-spews-ash-4km-air> (accessed 23 August 2017).
- UNESCAP (2015), "Overview of natural disasters and their impacts in Asia and the Pacific, 1970 – 2014", available at: www.unescap.org (accessed 20 September 2017).
- UNISDR (2009), "2009 UNISDR terminology on disaster risk reduction", available at: www.unisdr.org/files/7817_UNISDRTerminologyEnglish.pdf (accessed 10 August 2017).
- United Nations (2015), "Sendai framework for disaster risk reduction 2015 – 2030", available at: www.preventionweb.net/files/43291_sendaiframeworkfordrren.pdf (accessed 10 August 2017).
- Usamah, M. and Haynes, K. (2012), "An examination of the resettlement program at Mayon Volcano: what can we learn for sustainable volcanic risk reduction?", *Bulletin of Volcanology*, Vol. 74 No. 4, pp. 839-859.
- Van den Steenhoven, G. (1973), "Musjawarah in Karo-land", *Law and Society Review*, Vol. 7 No. 4, pp. 693-718, available at: www.rug.nl/library/new-portal (accessed 29 September 2017).
- Vanhoebrout, P. and Sagala, S. (2010), "Not so helpless victims: social capital roles in the 2009 West Sumatra Earthquake recovery", Research Report of International Federation of Red Cross and Red Crescent (IFRC), Padang.
- Weichselgartner, J. and Kelman, I. (2015), "Geographies of resilience: challenges and opportunities of a descriptive concept", *Progress in Human Geography*, Vol. 39 No. 3, pp. 249-267, available at: <http://journals.sagepub.com/doi/abs/10.1177/0309132513518834> (accessed 10 October 2018).
- Wilkinson, O. (2018), "Faith can come in, but not religion: secularity and its effects on the disaster response to Typhoon Haiyan", *Disasters*, Vol. 42 No. 3, pp. 459-474.
- WHS (2016), "Restoring humanity global voices calling for action synthesis of the consultation process for the world humanitarian summit", available at: <http://synthesisreport.worldhumanitariansummit.org/> (accessed 4 August 2017).
- Wisner, B., O'Keefe, P. and Westgate, K. (1977), "Global systems and local disasters: the untapped power of people's science", *Disasters*, Vol. 1 No. 1, pp. 47-57.
- Wulandari, Y., Sagala, S.A. and Sullivan, G.B. (2018), "The role of community-based organization in disaster response at Mt. Sinabung", *IOP Conference Series: Earth and Environmental Science*, Vol. 158 No. 1, pp. 12-35.

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