Rethinking Relocation as a Post-Disaster Rehabilitation and Recovery Strategy: The Case of Itogon, Benguet in Northern Philippines

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ABSTRACT

The Philippines is highly vulnerable to the impacts of natural hazards. In 2018, the Cordillera Administrative Region in Northern Luzon suffered the brunt of Typhoon Mangkhut (Local Name: Ompong). The torrential amount of rainfall caused massive landslides displacing communities. Disaster-induced displacement is a major development concern which entails a sustainable and resilient recovery and rehabilitation. As part of the efforts to rebuild safer communities, the government implemented policies such as No-Build Zones (NBZs) and planned the relocation of communities to move people away from hazards. These initiatives can support the re-development of safer and more resilient communities. However, such efforts in the past were often unsuccessful and actually aggravated the conditions of the affected communities. The rehabilitation and recovery efforts for the affected areas in the region, particularly in Itogon, Benguet, raises these concerns that are contrary to the 'building back better' principle outlined in national and international DRRM frameworks.

Keywords: Post-Disaster Rehabilitation and Recovery; Land Use and Spatial Development; Relocation, Build Back Better

Introduction

The Philippines is highly vulnerable to the impacts of natural hazards. In terms of disaster risk, Philippines ranked ninth among all of the countries with the highest risks worldwide according to the World Risk Index Report in 2019. Disasters disrupt normal functioning of a community and often set back development efforts. They can shatter development efforts and drain economic resources of communities by exacerbating poverty, disrupting business and industry activities, and disabling lifelines vital for economic activity and service delivery (NDRRMC 2012, 3–4).

While a disaster may only affect a community in a few hours or days, full recovery and reconstruction from its massive effect may require months or even years. Recovering from disasters is a challenging process. This entails the need to have clear road map, an efficient, well-organized process, knowledge gained from past failures and successes, and implementation capabilities and coordination (UNDP 2017, 6). The role of Post-Disaster Recovery and Rehabilitation (PDRR) period is critical in reducing disaster risks and building resilience.[1] Hence, planning a comprehensive recovery and rehabilitation should integrate principles that will promote the reduction of risks while being sensitive to the experiences of affected communities.

In 2018, the Cordillera Administrative Region in Northern Luzon suffered the brunt of Typhoon Mangkhut (Local Name: Ompong). The torrential amount of rainfall caused massive landslides displacing communities. As part of the efforts to rebuild safer communities, the government has implemented policies such as No-Build Zones (NBZs) and planned the relocation of communities to move people away from hazards.[2] If applied the right way, these initiatives can support the development of safer, more resilient communities. However, such efforts in the past were often unsuccessful and actually aggravated the conditions of the affected communities (Eadie 2019, 11). The concept of building back better is increasingly emphasized in literature, yet adopting the concept in practice is challenging because the PDRR processes itself may exacerbate various existing pre-disaster risks (Iuchi and Maly 2016, 209–23). The current rehabilitation and recovery efforts for Ompong-affected areas in the region raises concerns that such failure may happen again contrary to the 'building back better' principle outlined in national and international DRRM frameworks.

The term 'build-back-better' has been widely used to describe the goals of recovery plans and projects. However, the specific meaning and application is often unclear. In terms of post-disaster housing and relocation, this principle may be interpreted narrowly, prioritizing avoidance of risk over other factors that support communities' socio-economic recovery. In addition to the provision of safe relocation and construction of housing, it does not offer any direction for thinking about housing design or people's participation in the reconstruction process (Maly 2017, 4–6).

The process of relocating a whole population or a community including its economic activities, social networks and relations, and its natural physical and built environment is a complex process with significant impacts. A relocation process may become an opportunity for comprehensive improvement in the quality of life of the population, even exceeding the direct objectives of disaster risk reduction (Correa, Ramirez and Sanahuja 2011, 17). But if not duly planned, it can

contribute to disasters becoming endemic and when combined with poorly carried out recovery processes, recurrent disasters increase vulnerability and create chronic conditions of risk. This article seeks to contribute to this gap by revisiting the implementation of PDRR programs and activities in the Cordillera focusing on the application of a post-disaster spatial strategy and planned relocation of communities in a no-build zone area in Itogon, Benguet. Owing to the region's highland terrain and vulnerability to various hazards, the article suggests that PDRR planning should be able to address the existing conditions of disaster risks while being sensitive to the social, cultural and economic conditions of affected communities.

With the increasing attention to the value of PDRR in development studies, the article explores the application of PDRR policies and experiences of the communities in the region affected by recent disaster. The article considers the following questions: First, what are the existing PDRR policy framework in the Philippines related to land-use, spatial development, and relocation? And second, how the implementation of the NBZ policy and relocation as PDRR strategies affected the communities in Itogon, Benguet?

The paper utilized the following methods and approaches: review of official documents, household interviews, key-informant interviews with the Local DRRM Officers and Barangay DRRM Committee members, and on-site observations from February to March 2020. Verbal consent was obtained from all respondents and participants before the conduct of interviews to signify their participation in the study. Official communication letters were also provided to explain the objectives and scope of the interview. Documents and official reports used in the study include rehabilitation and recovery plans, geo-hazard assessment reports, post-disaster needs assessment and rapid damage assessment and needs analysis reports.

The paper follows the People-Centered Housing Recovery (PCHR) Framework, originally proposed by Maly in 2017 which primarily provides a counter-argument on the narrative build back better principle. While the build back better principle, focuses to specific improvements of engineering and structural safety, this paper argues that the PCHR could provide a more meaningful and comprehensive set of principles to guide post-disaster relocation and housing reconstruction to highlight genuine participation of empowered residents in decision making and construction; housing design and form that meet people's needs; and related policies that are accountable to all residents (Maly 2017, 3).

As such, the first part of the article outlines and describes the current state of Philippine DRRM system particularly on the PDRR thematic area to locate land-use, relocation, and post-disaster housing in the current system. The second part discusses the implementation

of the NBZ policy and planned relocation in Itogon, Benguet as an illustrative case, and describe how it affected the vulnerability of the communities coping in the post-disaster situation. This paper uses the concept PCHR to include discussion on post-disaster relocation and housing recovery policy that supports socio-economic recovery and a recovery process that includes community involvement in decision-making.

The Philippine Disaster Risk Reduction and Management System

The Philippine disaster management system can be traced back to as early as 1930s.[3] But it was not until the issuance of Presidential Decree 1566 dated 11 June 1978 that relief and rehabilitation in the context of a post-disaster scenario was mentioned. The law was intended to meet the "cogent requirement for pre-disaster planning, community disaster preparedness and positive, precise disaster control action for rescue evacuation, relief and rehabilitation." PD 1566 was the first disaster and emergency management policy to mention rehabilitation as preceding policies concentrated on anticipatory responses in time of war or other national emergency. However, the recovery and rehabilitation aspect provided in PD 1566 barely covered long-term rehabilitation and recovery as it only caters to emergency relief assistance and social services to the victims.

The issuance of these policies suggests that disaster management then was centered only around the hazard and the impacts of a disaster. The national and local governments were reactive to disasters. It assumed that disasters cannot be avoided and most of the plans were on the provision of relief goods and infrastructures. The reactive stance was concentrated on disaster response, which was not enough to comprehensively manage the consequences of disasters. This became evident in the management of major disasters such as Luzon Earthquake in 1990, Pinatubo Eruption in 1991 and Typhoon Ketsana (Local Name: Ondoy) in 2009. Because of the identified gaps, the Philippines took a paradigm shift from a reactive disaster response and coordination to a proactive DRRM stance through Republic Act 10121.

Signed into law on 27 May 2010, the Philippine Disaster Risk Reduction and Management Act (PDRRMA) provides a comprehensive, all-hazard, multi-sectoral, interagency, and community-based approach to DRRM. The PDRRMA recognizes that impacts of disasters can be reduced by addressing the root cause of disaster risks. The government shifts its focus from disaster response to disaster risk reduction. The PDRRMA establishes the National Disaster Risk Reduction and Management Council (NDRRMC) which is composed of government agencies, private sector, and

civil society organizations. The NDRRMC is responsible for setting policy, coordinating and overseeing DRRM activities. The new policy envisions a "Safer, adaptive and disaster resilient Filipino communities towards sustainable development" to be achieved through the four distinct yet mutually reinforcing priority thematic areas, namely, (a) Prevention and Mitigation; (b) Preparedness; (c) Response; and (d) Rehabilitation and Recovery.

Although, its focus is on disaster risk reduction, the PDRRMA addresses the issue of post-disaster management for affected communities. The paradigm shift gave birth to PDRR as a specific DRRM thematic area.

The PDRR was conceptualized in the PDRRMA not only focusing on restoration efforts damaged facilities and communities but in relation to reduction of disaster risks. This is also in recognition of the fact that disaster recovery periods are opportunities for reflecting on the root causes of a disaster and recasting development priorities to reduce human vulnerability to natural hazards (United Nations Department of Economic and Social Affairs 2014).

Factors Affecting the Failure and Success of PDRR

The implementation of PDRR plans were characterized by large funding gaps, ad hoc management and arrangements, as well as protracted periods of implementation of projects (Villacin 2017, 8–23). The crafting and implementation of rehabilitation and recovery plans by National Government and Local Government Units were delayed due to coordination issues, no standard templates and guidelines to prepare plans, bottlenecks in implementation, and lack of funds to finance recovery and reconstruction projects. Rehabilitation and Recovery Plans and its finance requirements are approved without no clear information on the sources of funds. This caused delays in the agency budget requests and releases (World Bank 2015, 3–4).

While much has been done to boost disaster preparedness and response in the country, the country still lags behind in the aspect of post-disaster reconstruction. The reasons for past failures in relocation projects in the Philippines have been a mixture of poor site selection, lack of livelihood opportunities and community infrastructure, and rushed projects leading to substandard homes (Valenciano 2007). Despite being established within the disaster management literature of PDRR that damaged houses should be rebuilt or repaired to be more resilient to hazard events and in safer sites, problems such as poor quality of housing units and unsuitable sites of relocation projects, lack of basic facilities, weak coordination among local government units, and lack of consultation with the end-users during project planning and implementation are still observed (Villacin 2017, 8–23).

It is also evident that the management of some of the rehabilitation strategies undermine community cohesion as opposed to making it strong. Multiple displacements fractured community life (Eadie 2019, 2–6).

Based on the existing literature on PDRR particularly on relocation, four common factors were identified to affect the outcomes of PDRR—community participation and empowerment, effective communication strategy, consideration of community cultures and beliefs, and support from the local government (Sullivan 2013, 5–7). PDRR programs must also meet both the socio-economic and cultural requirements of the affected communities and should also allow for future expansion (Diacon 1997, 269–71). For instance, housing reconstruction as a process should not be limited to, or focused only on, producing physical residential dwellings. It must ensure that the social, cultural, psychological and economic needs of the various stakeholders, particularly those of the affected people, are identified, defined and responded to throughout the project lifecycle (Nadiruzzaman and Paul 2013).

One of the most critical elements of post-disaster recovery planning is to define the institutional arrangements for recovery. Given the numerous national and local actors involved in a multi-sectoral recovery process, coordination, and strong leadership become central to effective recovery management processes (UNDP 2017, 15–18). A dedicated agency at national level with representation and units at state and local government levels should be set up to ensure central coordination of and support to the recovery and reconstruction effort. In the Philippines, although the PDRRMA and the NDRRMP provide that the responsibility for post-disaster recovery and rehabilitation falls under NEDA, in practice the past major disasters have led the government to designate other agencies/entities or individuals to lead the rehabilitation and recovery process such as the case of the Task Force Pablo for Typhoon Pablo in 2012, Office of the Presidential Assistant for Rehabilitation and Recovery (OPARR) for Typhoon Yolanda (2013) and the Task Force Bangon Marawi for the Marawi Siege (2017).

Post-disaster housing projects are diverse in nature, have unique socio-cultural and economical requirements and are extremely dynamic and thus necessitate a meaningful and dynamic response (Fan 2012, 64–86). The reconstruction of domestic dwellings in large quantities after a significant disaster often faces many socioeconomic, cultural, religious, political and environmental challenges and is a complex undertaking (Ianco, Alberti, Olshansky, Chang and Wheeler 2009, 195–250). PDRR practices that lack a strategy compatible with, the severity of disaster, community culture and socioeconomic requirements, environmental condition, and government legislations, frequently fail to operate and respond effectively to the needs of the

wider affected population (Kaklauskas, Amaratunga and Haigh 2009, 117–28).

The idea of relocation as a transformative disaster risk reduction, and development strategy follows the assumption that relocation reduces the vulnerability of communities. Yet, it is unclear whose and what kind of vulnerability is reduced through relocation (Nalau and Handmer 2018, 2). The case of Itogon, Benguet illustrates such gap. While the community may have reduced its physical vulnerability against the hazard, for instance a landslide, planning PDRR relying solely on physical vulnerability reduction other sources of vulnerability such as social and economic vulnerabilities.

PDRR as a Window of Opportunity

Disasters and their consequences produce severe negative effects on economic and social development of communities and interrupt their planned development goals. Development funds are diverted and realigned for disaster response and rehabilitation results to major setbacks to social investments for poverty reduction and alleviation. Disaster management, especially disaster recovery thematic area, may provide opportunities for policymakers and community leaders to reconsider, recast and rethink development priorities to reduce vulnerability to natural hazards. Only when recovery activities address not only the immediate needs of the affected population, but also the underlying vulnerabilities, will they be able to contribute to the development of safe and resilient communities (Ingram 2006, 607–13).

A key vulnerability reduction strategy that must form part of a PDRR Plan and Framework is a spatial development strategy. Disasters with major physical impact may require the need for a new land use framework to consider changes in the topography and the land use of the area after a disaster (Saunders and Kilvington 2016, 244–55). This lay down the urgent need to review the progress of the PDRR programs, as the case of Itogon, Benguet in the Cordillera, to ensure that these factors are considered in the implementation and practice. Succeeding parts of the article discusses the implementation of the PDRR program for communities affected by Typhoon Mangkhut in 2018 in reference to the post-disaster land-use and spatial development strategy of no-build zone and the planned relocation of affected communities.

Post-Disaster Land Use and Spatial Development Strategies

A post-disaster land use and spatial development strategy is considered a key vulnerability reduction strategy that must form part of a PDRR Plan and Framework. The Sendai Framework for Disaster Risk Reduction (SFDRR) locates land use planning within a set of priority

actions for disaster preparedness and recovery. In terms of disaster recovery, the SFDRR references to land use planning under Priority 4, paragraph 33 (j): promote the incorporation of disaster risk management into post-disaster recovery and rehabilitation processes […] including through the development of measures such as land-use planning. These policy frameworks form part of emerging principles on the need to consider post-disaster land use and spatial development strategy as a potential disaster risk reduction measure.

In the Philippines, mainstreaming disaster risk reduction and management in the Comprehensive Land-Use Plan and other local development plans is considered a key policy for proactive DRRM. The NDRRMP describes that DRRM and Climate Change Adaption (CCA) should be mainstreamed into Provincial Development and Physical Framework Plans (PDPFPs), Comprehensive Development Plans (CDPs), and CLUPs for reduction of vulnerabilities to disasters and increase of DRRM capacities of communities. The revision of the land-use planning process is essential for DRRM from the perspectives of not only disaster prevention and mitigation but also recovery and reconstruction.

Land use planning during PDRR offers an opportunity to rebuild differently, while addressing exposure and vulnerability to current and future hazard risks as well past planning deficits. Land use planning offers a tangible risk reduction opportunity and can support the overall recovery process (ADPC 2015). While land use planning has been heavily recognized as a disaster risk reduction measure, what if the same policy causes the displacement and increase in the vulnerability of affected communities?

Post-disaster No-Build Zone Policies and Relocation

There have been several instances where the government, as a response to the effects of a disaster, imposed No-Build Zone (NBZ) policies and other similar policies affecting thousands of individuals. The imposition of no-build zones and no-dwelling zones represents a state strategy of delineating lands that are risk-prone, and hence should not be allowed for habitation in the context of post-disaster reconstruction and recovery (Yee 2017, 103–21). NBZ policies attempt to operationalize the build back better principle and to reduce the vulnerability of affected communities to future risks and hazards described in the SFDRR and PDRRMA.

In land use planning, the zoning ordinance is a primary tool to guide land use and mitigate the impacts of various hazards. Before development of the zoning ordinance, the CLUP Guidebook (2013) suggests deciding land use policy areas under the general categories of protection, buffer, production or settlement, after assessment of

the level of hazards and the current land use and plan. The zoning ordinance is prepared once land use change policies and development strategies are ready. Four approaches are suggested to regulate areas with hazard risks that include: No-Build Zones (NBZ), Urban Renewal/ Redevelopment Areas (URA), Hazard Overlay Zones, and Special Management Districts.

Areas highly susceptible to hazards where risk is unmanageable or unacceptable can be designated as parks and recreation, but to emphasize the danger and the restrictions on use, the term No-Build Zone is used for areas where building is not allowed. It is applicable for areas which are relatively undeveloped or severely damaged from past disasters. Among the proposed criteria for declaring no-build zones include the high susceptibility to landslides or areas with severe damage from previous disasters (e.g. houses completely covered or washed out by landslide, or debris slides) where protection or disaster mitigation measures are not deemed feasible. Existing developments and structures on identified no-build zones, would have to be removed or relocated.

Recent literature and case study of the no-build zones and relocation policies of Haiyan-affected communities in the Philippines and 2004 Indian Ocean Tsunami in Sri Lanka provide how previous post-disaster no-build zone policies and relocation were implemented. In 2013, Super Typhoon Haiyan (Local Name: Yolanda) battered the Philippines, displacing millions. In the disaster's wake, the government announced that, given the country's exposure to typhoons, it would enforce 'no-build zones' within 40 meters of the high water mark in all typhoon-affected areas. Those previously living in these areas would be prohibited from returning and rebuilding, and the government would implement a relocation program for them. However, due to insufficient advance planning and slow implementation, Thomas (2015) argued that the NBZ policy and relocation program has only served to prolong displacement and potentially increased the vulnerability of hundreds of thousands of primarily poor, landless households. While the NBZ policy was well-intentioned as a measure to protect vulnerable populations exposed to future typhoons and storm surges, the more intractable challenge is the enormous scale of the relocation program especially since many local government authorities charged with implementing relocation lack the requisite human, technical and financial capacity (Thomas 2015, 49–54). In areas where relocation projects were implemented, the common approach is to construct shelters on vacant which are often remote areas lacking of access to utilities, social services and livelihoods. Displaced families in relocation areas are challenged with their access to jobs and schools, and dislocation from urban centers and community life.

In Sri Lanka, on the other hand, the aftermath of the December 2004 Indian Ocean Tsunami led the government to established a ''no reconstruction'' coastal buffer zone. While perhaps well-intended as a measure to protect people from future storms, it was also argued that the NBZ policy proved highly problematic. The experience of Sri Lanka's coastal buffer zone policy proved that the hasty application of the policy affected the socio-economic inequalities and compromised livelihoods, community structure and environmental protection. This policy incited massive relocation of affected populations and resulted in social, economic and environmental problems that threatened the well-being of poor coastal communities (Ingram 2006, 612).

The implementation of NBZs as post-disaster policy aimed at sustainable re-development should be informed by an analysis of the components of vulnerability. It is commonly assumed that relocation can reduce the vulnerability of communities—that by taking account of people's needs, the process of relocation can be an important part of a transformative and adaptive development strategy. This is based on the idea that once people's exposure to a major hazard is reduced, their resilience increases, and they are generally better off (Usamah and Haynes 2011, 74). Cautious analysis should be given to developing an adaptive plan that aims to reduce long-term vulnerability to future hazards by considering the many social, physical, environmental, economic and political components that interact to influence vulnerability.

The No-Build Zone Policy of Itogon, Benguet

The PDRRMA, NDRRMP, and the SFDRR articulate on reduction of disaster risks through land use planning and spatial development strategies. The case of Itogon, Benguet in the Cordillera illustrates the implementation of such policies. Though it is important to consider spatial development strategies as part of PDRR, these attempts should be carefully studied as it may enhance disaster risks in circumstances where the government is unable to immediately provide alternative solutions for its consequences. The no-build zone policy of Itogon, Benguet was conceptualized as a result of geo-hazard assessment conducted in the Municipality in the aftermath of Typhoon Mangkhut in September 2018. Since interventions involved complex social, economic and cultural factors, it is crucial to look into the existing policies of implementation, and scrutinize the extent and impact of the implementation process across sites and stakeholders which included the intended, and inadvertent consequences of the policy.

Geo-Hazard Assessment

Multi-hazard conditions prevail in virtually all mountainous areas, such as the Cordillera. This is nothing new; however, many mountain areas have experienced a strong increase in population and economic development over the past decades as well as intensified human activity. The Municipality of Itogon in Benguet, for instance, provides a very challenging context for disaster rehabilitation, recovery and development. Based on its CLUP, in terms of slope percentages and land area covered per slope category, above 50% slope makes up 84.84% of the municipality's land area or 42,249.95 hectares. With this, settlement development is prohibitive not only in costs but also in terms of risks due to erosion and landslides. This alone challenges in the Municipality in identifying appropriate sites for human settlement and safe livelihood.[4]

When Typhoon Mangkhut battered the region in 2018, numerous landslides, debris flows, rockslide and mudflows, and in some areas subsidence were reported.[5] Although the whole region suffered damages, Itogon, Benguet grabbed major headlines as it suffered the biggest number of casualties from a landslide in the small-scale mining community of Barangay Ucab. Of the total 116 casualties in the region, 91 were from Itogon. The tragedy in Itogon highlights the vulnerability of the region to landslides due to its steep terrain aggravated by excessive rainfall.

In 2018, Itogon Municipal Council adopted Resolution No. 427–2018 titled "Resolution requesting the Mines and Geosciences Bureau–CAR to conduct Geo-Hazard Assessment and validation of stability in Itogon, Benguet." To delineate the critical areas and danger zone relative to landslides in Itogon, the MGB-CAR led the conduct of rapid damage assessment and needs analysis through geological and geo-hazard assessment using ground penetrating radar (GPR) survey and drone mapping. In pursuing the objectives of the assessment, a multi-disciplinary team composed of geologists, GIS Specialist, engineers, forester and IT Specialists were tapped to lead the assessment from September to October 2018.

In Sitio First Gate, Ucab, active landslides situated at the northeastern and southwestern slope of a ridge (upslope of Sitio First Gate) was noted. A north trending valley serves as a pathway of water and debris during heavy rainfall thus endangering the residents situated downslope. Tension cracks were also noted along the Ucab-Antamok Road, measuring up to 5cm wide. A 4cm wide tension crack was also observed on a retaining wall. Several houses situated on steep slopes are in close proximity to the active landslides. Ground Penetrating Radar results have also shown presence of horizontal voids or cracks, ground displacements, numerous small voids and saturated earth materials from road surfaces to 27 meters below at Sitio First Gate and Keystone in Barangay Ucab, Itogon. The steep to very steep slopes and presence of several old active landslides within the area are major factors which renders the area very prone to landslide. The team also noted the presence of tilted trees, tension cracks, and small slides which are considered signs of impending and progressive landslide.

With the fact that the risk to which a population is exposed cannot be mitigated by any other measure, relocation becomes the only option for reducing the risk. As such, the team recommended that the area should be declared as a "danger zone", therefore no dwelling units and development activities should be allowed in the area. The team strongly recommended for the immediate relocation of small scale mining communities in areas delineated in critical zone with active landslides especially in areas that were found to show signs of active landslides. Relocation plans and programs should be implemented the soonest possible time to avert disaster that may result to loss of more lives and damage to properties.

Restrictive Planning in a No-Build Zone

Given the situation, the LGU adopted a restrictive planning approach focusing on decreasing direct physical exposure of communities by planning relocation of human settlements from highly vulnerable and disaster prone areas. The Local DRRM Officer mentioned that series of barangay assemblies were conducted in October 2018 to discuss issues on relocation, livelihood, no build zones, National Task Force-Mining challenge. On 24 October 2018, the Municipal Mayor issued Administrative Order No. 23-2018 creating a demolition team to implement the dismantling of structures in areas with high hazard susceptibility as determined by the MGB-CAR. The areas identified as unsafe and uninhabitable and were considered within the no-build zones are parts of Dampingan, portions of Luneta, Simot-simot, Colombia and Forty Rise in Loacan; First Gate, Otek and L-070 in Barangay Ucab; Tipong in Ampucao; and Surong 2 in Gumatdang.

The declaration of the no-build zones was primarily justified as necessary for safety and reduction of future disaster risk. "The need to demolish is to prevent the people from going back and risking their lives, like what happened during the height of Typhoon Ompong," says Administrative Order No. 23. Prior to the issuance of the said Administrative Order, an Advisory was also issued on 17 October 2018 regarding the voluntary dismantling of affected structures prior to the issuance of a demolition order. With this, some residents voluntarily demolished their houses to spare some materials which they can recycle such as roofs and woods.

More than a year since the implementation of the said policy, mostly those in the identified high-risk areas have not yet received relocation assistance, leading many to return and re-build temporary shelters in NBZs. An elderly woman (personal interview, 7 March 2020) who is currently residing in a makeshift shelter in Sito Dampingan, Loacan, Itogon narrated: '*Di ba nga declared na* danger zone*, pero di natin sila masisi kasi wala naman silang pupuntahan. Hanggang ngayon wala naman sila maibigay, ina-antay namin. Kayat mi mapan nukwa ken umikkat ditoy basta mayat ti maiyawat da […] May nagpunta na dati dito na nagdemolish pero sana itigil na muna nila kasi wala naman sila maibigay na relocation.* [The area is already declared danger zone, but we cannot blame them because they have nowhere to go. Until now, they cannot give (relocation site), we are still waiting. We wanted to leave as long as they can give a good relocation site. They came here before to demolish, but I hope they postpone it until such time they can identify a relocation].

The relocatees are living with their relatives, renting through the assistance of Diocese of Baguio-Caritas, while some went back to their respective places but with the agreement that when it rains heavily, they have to evacuate. Others who received temporary rental assistance have returned due to the burden and cost of rental services. The supposed no-build areas are now re-populated with poor quality housing in informal settlements highly vulnerable to the impacts of various hazards.

Elusive Plans for Relocation

A "no-build zone" does not mean a "no-assistance zone," and should not delay shelter or settlement responses. Identifying hazard-prone areas and implementing policies prohibiting the habitation in such areas is only part of a bigger picture. A far bigger challenge is the relocation of people. The planned relocation of communities in NBZ areas in Itogon, Benguet is an application of the DRRM principles as provided in the PDRRMA, NDRRMP and RRP. The NDRRMP identifies relocation as a policy measure for high-risk areas identified through a process of hazard and risk mapping. Outcome 22 is stated as incorporating DRR into human settlements. The outputs for Outcome 22 include safe relocation sites and the design and construction of resilient housing units within timeframes of a year. The same is translated in the Cordillera RRP for Typhoon Mangkhut. One of the key activities described in the RRP is 'to repair houses and rebuild settlements and basic community facilities and services that are more resilient to hazard events.' The RRP also suggests that in order to carry out the said program, activities such as the purchase of lots for relocation, identification and assessment of safe and suitable relocation sites and design of disaster-resilient housing adaptive to the topography and culture of the Cordillera shall be implemented within one year.

With the implementation of the NBZ policy in 2018, a total of 102 houses and shanties were torn down by operatives to avert further damage from calamities. Additional 464 residential houses were identified in the NBZs that needs immediate relocation.

In 8 October 2018, Itogon MDRRMC Chairperson issued Administrative Order No. 22 s. 2018 creating and organizing various task forces under the Municipal Disaster Risk Reduction and Management Council to perform corresponding functions to the Rehabilitation and Recovery Actions. Three (3) Task Forces were created to focus on three immediate needs as identified: Housing and Resettlement Task Force, Task Force on Training and Livelihood, and Task Force on Employment.

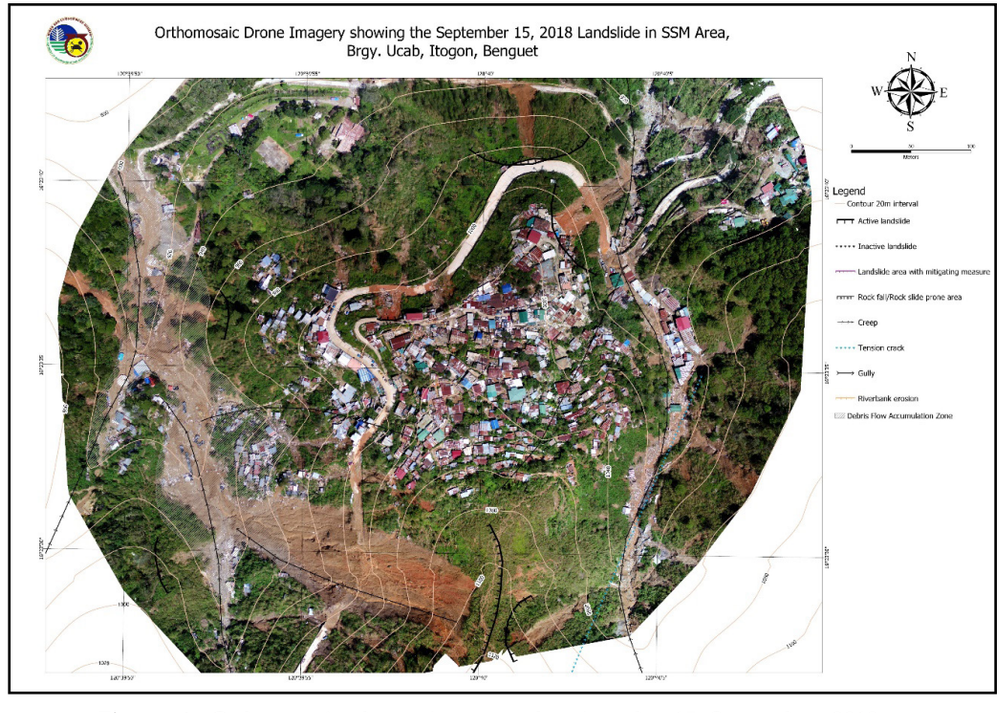

Figure 1. Orthomosaic drone imagery showing the 15 September 2018 landslide in First Gate, Ucab, Itogon, Benguet. (Source: MBG-CAR, 2018)

Based on the interview with the Local DRRM Officer Itogon (personal interview, 6 March 2020), it was noted that the Housing and Resettlement Task Force was able to identify and proposed two (2) relocation sites in Ampucao and Tuding. However, after the conduct of a geo-hazard assessment led by MGB-CAR, the area was declared not suitable as a relocation site. In Sitio Bua, Tuding, MGB-CAR noted a tension crack traversing the area where the proposed temporary shelter for affected residents is located. The result of the GPR survey showed a continuous horizontal cavity at 10 meters below the area and a clayey layer underneath. Active landslides were also observed along the road to the proposed temporary shelter. The proposed temporary shelter was recommended not suitable as an evacuation or relocation site (MGB-CAR 2018).

In addition, the LDRRMO also reported that in 29 September 2018, the National Housing Authority earmarked and turned-over Php 10 Million pesos to Itogon LGU for the purchase of housing materials for the affected population. Two weeks later, in 13 October 2018, the NHA turned-over another check amounting to Php 10 Million to be used for the acquisition of relocation site to the displaced families caused by the landslide. Until now, the said funds were unutilized due to unavailability of safe relocation site. The NDRRMP designates NHA as lead agency in the Disaster Rehabilitation and Recovery Phase particularly in the development of disaster-resilient, safe and sustainable settlements for families affected by calamities. The Housing Assistance for Calamity Victims Program of NHA is intended to respond to the shelter needs of low and marginal-income and/or informal settler families affected by calamities such as typhoons, landslides, earthquakes, fires and other human-induced calamities for relocation to safe, disaster resilient and sustainable settlements. The program also involves the provision of housing materials assistance to families whose homes are partially damaged by calamities in the "build zone" and do not require relocation.

Implications of the NBZ policy, Relocation

This section of the article provides analysis on the implementation of the NBZ and its intended consequence of relocation of the affected communities. Gaining from the experiences of the region, the article provides that despite the intended outcomes of the PDRRMA and SDFRR, PDRR programs in the region have revealed the gap in actual implementation process. Following the key points of the People-Centered Housing Recovery Framework, in order to achieve the desired recovery outcome of the beneficiaries and affected communities, there is a need to address and match the needs and assistance provided to the actual needs of the beneficiaries when

designing recovery strategies. As such, this part of the paper argues on the idea of how and what beneficiary needs, resources, and services should be made available to the community as program outputs and outcome in PDRR. The relationship and linkages between the problem being addressed, proposed activities and interventions that contribute to achievement of the program objectives, constraints and other external factors are represented in a proposed logic model to provide a guiding framework for the local governments, policymakers and stakeholders.

Gap in the Theoretical Framing and Actual Implementation of the NBZ Policy, Relocation

The implementation of NBZ policy is anchored on a key spatial strategy in the Cordillera Regional Physical Framework Plan (2004–2034) which highlights the avoidance of hazardous and environmentally critical areas such as steeply sloping areas, sink holes, subsidence areas, erosion and flood prone areas. The purpose for the NBZ is to prevent the scale another disaster in the future, however the immediate need for relocation sites and for reconstruction of houses for affected persons should be prioritized. Despite its good intentions, the implementation of the NBZ policy received disapproval from locals knowing that the said policy was implemented without an approved plan for their immediate relocation.

By virtue of the PDRRMA and the Local Government Code of 1991, LGUs, through their Local DRRM Councils, are expected to be at the frontline of emergency measures in the aftermath of disasters to ensure the general welfare of its constituents. The implementation of the NBZ policy in Itogon, Benguet was conceptualized through geo-hazard mapping conducted by the government. While the intention was to keep communities away from the hazard, the LGU enforced the said policy with the demolition of their houses and shanties without clear plans how to cater the communities to be affected by the NBZ policy.

Disaster-induced relocation involves broader negative and positive development pathways. A positive development is identified as reduced exposure to hazards and less future spending on response and recovery. Even though relocation reduces the disaster risk, it also exposes people to new threats and vulnerabilities. These negative aspects are considered as new socio-economic susceptibilities resulting from social fragmentation, livelihood loss, food insecurity and landlessness (Jamshed, Rana, Agrwal, Ali and Otswal 2018, 604–22). By focusing too much on the implementation of the NBZ policy and not addressing the factors contributing to the progression of vulnerability, the NBZ policy displaced and worsened many of

the problems that made people more vulnerable to landslides and other hazards. With no alternative solutions, the policy overlooked other sources of disaster risks such as socio-economic disparities, poverty, land tenure concerns and environmental conditions of affected communities (Yee 2017). In addition to spatial development concerns, the case highlights the implications and trade-offs of long-term vulnerability reduction policies. The failure of NBZ policies after Typhoon Haiyan in Tacloban provided that vicious cycles of risk may emerge when government fail to provide affected individuals with little alternative than to live in hazard-prone settlements (Fitzpatrick and Compton 2019, 295–312).

Landslide-induced displacement and relocation in the region has become more often in recent years. However, until now, there are also no existing cohesive policy to guide government and other non-government partners in the implementation of relocation. Attempts to implement NBZs as a PDRR strategy, while neglecting to address the consequences of such policies such as relocation, create conditions for policy gap and failure. In the absence of a comprehensive disaster

Figure 2. The 15 September 2018 landslide in Ucab, Itogon, Benguet along with houses and shanties in the adjacent areas. (Source: MBG-CAR, 2018)

system that specifies the PDRRMA's broad provisions on post-disaster housing and relocation, other existing laws that have their own distinct orientation are used to supplement the PDRRMA's inadequate recovery provisions.

Lack of Legal Parameters to Guide PDRR Relocation

Literature and case studies conducted cited challenges in the difficulty why LGUs and government agencies hardly implement PDRR programs particularly relocation. One of the major challenges identified is the lack of legal parameters to guide them in preparation and implementation process. The implementing rules and regulations of the PDRRMA fail to elaborate on the specific guidelines for the implementation of PDRR programs particularly those related to relocations in post-disaster context. The lack of specific legal provisions in the PDRRMS and the limited descriptions in the NDRRMP on relocation and housing for disaster victims led to the adoption of existing state laws such as the Republic Act No. 7279 or Urban Development and House Act of 1992 and other affiliated housing laws and their implementing rules (Ballano 2017). However, the said law and its implementing rules were designed for the relocation and housing of the urban poor who live in "danger areas such as esteros, railroad tracks, garbage dumps, riverbanks, shorelines, waterways, and in other public places as sidewalks, roads, parks, and playgrounds" and are victims of demolitions in urban areas.

It was not until the enactment of Republic Act No. 11201 in February 2019 that the "*formulation of a framework for resilient housing and human settlements as a basis for post-disaster housing and resiliency planning, research and development, extension, monitoring and evaluation of programs, projects and activities to protect vulnerable communities from the adverse effects of climate change and disaster*" was mentioned as one of the major mandates of a new government agency called Department of Human Settlements and Urban Development. However, until now, the said agency has yet to formulate a comprehensive framework for resilient housing and human settlements in a post-disaster situation. The case of Itogon, Benguet illustrates a case of a disparity in the conceptual framing and actual implementation of policies in PDRR. While the RRPs are anchored on relevant principles of national and international DRRM frameworks, actual implementation became problematic as it met challenges such as land use restrictions and lack of legal parameters to undertake such enormous task. The experience of Itogon, Benguet and all other communities affected by past major disasters that involved relocation, should be considered in the formulation resilient housing and human settlements frameworks.

Improving Livelihood Outcomes for the Displaced Communities

Although livelihood improvement and restoration are the explicit objectives of the PDRRMA and NDRRMP, they are often neglected in relocation projects, which usually pay more attention to housing (Piggott-McKellar, Pearson, and McNamara 2019). Relocation is one of the major solutions to persistent risk of disasters. However, relocation disrupts the original livelihoods of the resettled people, and may increase their risk of impoverishment, although projects are expected to restore their livelihoods and create opportunities for development (Vanclay 2017, 3–21). In addition to the impact of the declaration of NBZs, the susceptibility of the municipality of Itogon to landslides which has been attributed to small-scale mining led the Department of Environment and Natural Resources (DENR) to declare a stoppage order on all small-scale mining activities in the Cordillera Administrative Region on 17 September 2018. Following the proclamation, around 3,513 families in Itogon, Benguet alone were displaced from their source of livelihood. The implementing rules and regulations of the PDRMMA contains Section 2 (p) which explicitly provides that the government must implement emergency rehabilitation projects to lessen the impact of the disaster, and facilitate the resumption of normal social and economic activities.

Previous cases of attempts to reduce exposure through the implementation of the no build zone and other related policies have been highly problematic due to cultural, social, economic and environmental limitations. Often individuals or social groups live in areas where they are exposed to hazard risk because there are few other viable options and the threat of a potential hazard is less of a risk than the immediate threats of hunger and poverty. Thus, people are unlikely to change their living patterns to reduce their exposure to a natural hazard if it increases their sensitivity to more pressing, frequent threats (Ingram 2006). There has been an increasing trend towards people living in high-risk areas who are aware of the risks, but they have few alternatives for livelihoods. Many people acknowledged the risks in living in makeshift houses claimed that squatting in this area was their only choice because of their limited financial assets and a lack of available land (Walch 2017). Such rationale may explain why many people in the hazard-prone areas do not want to move from the danger zone where their livelihoods are based.

A resident of Sitio Dampingan in Loacan, Itogon (personal interview, 7 March 2020) narrated her experience in relation to her decision to stay in the NBZ area and continue small-scale mining activity despite prohibitions:

> *"No comment, Hindi kasi namin ma-feel 'yung mga sinabi nila noon. Relocation? Wala naman. Alternative livelihood, hindi naman nagmaterialize. Parang hindi mo ma-feel. Kanya-kanyang recover nalang. Meron silang binigay na livelihood assistance na Php 20,000 pero chosen few lang. Yung mga long-term sana pero wala. Kaya balik na naman sa minas.* [No comment, we cannot feel it. Relocation? There is none until now. Alternative livelihood did not materialize. You cannot feel it. We recover on our own. They gave financial assistance worth Php 20,000 but only for the chosen few. They promised alternative ling-term livelihood but until now there is none, so we go back to mining.]

People tend to move and settle in these areas notwithstanding the corresponding hazard in the area, because of the benefit of livelihood opportunities they may find. While relocation to less hazardous areas is effective in reducing physical risks, it may overlook other important factors that cause vulnerable people to occupy hazardous land. The policy of relocation may overlook the economic and other reasons that make people settle in unsafe areas in the first place. Even after disasters, many people are reluctant to move if their livelihoods depend on their existing location (Twigg 2015).

After Typhoon Ketsana hit the Philippines in September 2009, many urban informal settlers were relocated to Bayan ni Juan, a rural area. With no livelihood opportunities and few basic services, many people left the relocation site and the local government had to issue a moratorium banning further relocation to this site (Moya 2013). After Tropical Storm Washi in December 2011, people relocated far from their livelihood opportunities in the central business districts of Cagayan de Oro and Iligan, found themselves constrained by the cost of transport and the time needed to get there. Studies found that their assets were eroded and vulnerability increased (Carrasco, Ochiai and Okazaki 2017, 35–49).

Displacement and relocation may create new conditions of poverty. Recovery from disaster events requires a shift from short-term relief activities into longer-term development initiatives. Increasingly, sustainable livelihoods concepts through diversifying livelihood intervention strategies have been acknowledged as an important component of both development and post-disaster recovery operations.

Community Identity and Social Coherence

While planning a safer and sustainable relocation involves intricate logistical considerations, challenges relating to community identity and social coherence of the affected communities should likewise

be considered (UNHCR 2014). The relocation strategy after Typhoon Morake in Taiwan in 2009, for instance, was considered a challenge as most people needed to be relocated are ethnic minority groups who had lived in aboriginal areas for generations. Aboriginal groups respect the nature environment and have a strong connection with their land. For them, collective relocation means a total change of interpersonal relationship and social identity. In addition, collective relocation will force them to change their livelihood as many of them relied on agricultural and forestry for living. Relocation of disaster victims is always a challenging task for agencies involved in disaster reconstruction. It is important to note that relocation of disaster victims is more than moving a group of people from one place to another (Fu, Lin and Shief 2013).

The challenge for a PDRR relocation of communities in the Cordillera should also take into consideration the social relationship of communities. Programs and activities should be designed to foster a sense of continuity and cohesion among community members to ensure existing social networks are retained throughout the process. Generally, the concern of people in the past was to work on the land for the basic subsistence for their family and raise livestock for family rituals. When their neighbors, relatives or clan members were in need of help, they would be there with the rest of the community to help. The peoples' goals were centered on the family and community (Adonis 2011).

While relocation policy and research have tended to prioritize consideration of economic factors for preventing impoverishment and securing sustainable livelihood, purely economic approaches may miss crucial factors like community links and cultural or religious influences on daily life (Koenig 2006). A case study (Singer, Hong and Ochia 2015) concerning relocation policies affecting ethnic minorities and indigenous people communities in Vietnam, suggests that authorities can address many of these concerns by incorporating the following socio-cultural considerations in project planning such as moving communities intact, preferably retaining the original name, general spatial layout and other characteristics, assisting in moving or protecting burial grounds and supporting construction of village shrines and temples, community houses and other buildings with spiritual or social significance to local residents., and provision of administrative and/or financial support for the maintenance of traditional community rituals, practices and events that will foster continued unity and well-being, and for formal instruction of youths in indigenous arts and language.

Although relocation could reduce disaster risk by moving away from a risky location, it can have a huge impact on the relocated groups' cultural, social, and political aspects. Removing people and

communities away from their original settlements may mean their separation from their existing and pre-disaster institutions and ways. In the Cordillera, for example, relocation policies should ensure that culturally-relevant structures, such as *dap-ays* or *ator,* be included to the new relocation area. By ensuring the institution of these socio-cultural structures in the relocation sites, practices and rituals connected to these structures can continue to be practiced as an important part of the cultural heritage of the community. Maintaining local structures in the relocations sites is important in achieving community resilience.

In addition, PDRR may also provide for the continuity of social coherence and through design of houses in relocations sites. Instead of a pre-determined housing design in relocation sites, the government may let the community draw their respective housing designs in accordance with their individuals needs as well as cultural relevance. The autonomy of the end-user in the design and building process leads to liberty of expression of local identity and an important preservation of local traditions. An owner-driven design and construction process enables the maintenance of the local architecture and cultural identity (Alexander 1989, 228–36). Pre-designed housing designs, such those that have been used by the government in the past, lack uniqueness which eliminates the identity of the original community relocated.

Community and Key Stakeholder's Involvement

Community involvement in post disaster re-construction is an important ingredient to the overall success of re-development. An interesting innovation and initiative the affected communities may adopt is the institutionalization of the community-based organizations to lead the efforts of the community and government throughout the process. This was exhibited in a post-disaster relocation case in Bokod, Benguet. The Labey Indigenous Peoples Concerned Community Association, Inc. (LIPCCAI) in the relocation area at Sitio Labey, Brgy. Ambuklao, Bokod, Benguet is an organization of the community responsible for the interventions to the decisions about the program for the community relocation. It is an administrative system that was formed by the residents of Sitio Labey which served as a tool in contacting government agencies and keeping the settlers consolidated in facing issues of relocation (De Jesus and Palisoc 2014). These kinds of community-based recovery programs in particular, and disaster management in general, show high level of success based on the assumption that the more the community owns disaster management plans and the resources involved, the easier it is to implement them (IRP 2020). One of the functions of this organization is to uphold the interests of the community, especially in the relocation area. On 21

January 2010, the LIPCCAI started the constitution of the organization in consideration of the advice to create an association of people in the community so that they could have an easier access to projects and their issues raised will be more noticeable. In effect, the organization was able to give them easier contact with projects and assistance such as coordination with the government agencies in relation to the provision of power supply and building of a road leading to the relocation area (CWEARC 2012). This innovation refrains making communities to be reduced as mere passive recipients of relief goods and services.

The same innovation can be adopted in the case of communities in Itogon, Benguet. Given the complexity of the situation and the challenges the LGU is facing in the identification of proposed relocation sites, community members need to consolidate their position and empower themselves to participate in PDRR program. In addition to structures and spatial lay-outs, indigenous socio-political systems and institutions in the region, such as decision-making by consensus where the opinion of elders is given premium, should be recognized in the PDRR process. These socio-political institutions can provide for a platform to discuss important decisions related to the community's relocation. This could provide an opportunity for community members to contribute their knowledge and skills to the process that will in turn affect their future lives.

Consulting communities may also give a hint to further understand the geophysical characteristics and history of the area to provide decision makers guidance in the identification of suitable relocations sites.

Proposed Logic Model in Approaching PDRR

A framework for PDRR programs particularly those related to relocation is proposed based on the experiences of Itogon, Benguet as well as cases and literature cited. The framework intends to facilitate policymakers, Local DRRMCs, and other concerned agencies in the planning and implementation of relocations. The proposed framework builds on ideas and key concepts of the PCHR Framework to provide a more meaningful and comprehensive set of principles to guide post-disaster relocation and housing reconstruction and to highlight genuine participation of empowered residents in decision making and construction; housing design and form that meet people's needs; and related policies that are accountable to all residents.

To illustrate the proposed interventions for the PDRR program relating to relocation, ideas of a Logic Model is used. A logic model serves as a framework and a process for planning to bridge the gap between 'where you are' and 'where you want to be.' Here, we apply

this framework to case of Itogon, Benguet to broadly illustrate how the NBZ policy has influenced PDRR relocation for the affected communities. Such model may be applied and adapted to other PDRR situations to help guide recovery policies. It provides a structure for clear understanding the situation that drives the need for an initiative, the desired end state and how investments are linked to activities for targeted people in order to achieve the desired results.

The starting points of the framework is the ***situation***. In this case, the situation that calls for priority action is the displacement of communities located in the No-Build Zone areas in Itogon, Benguet. The NBZ policy was conceptualized after the onslaught of Typhoon "Ompong" in an attempt to operationalize the 'build back better' principle and to reduce the vulnerability of affected communities to future risks and hazards. The involuntary and planned relocation of these communities are determined in relation to the results of the geo-hazard assessments and studies conducted in the area.

Based on the Itogon's experience following the landslide in 2018, and literature cited, five (5) interdependent factors are highlighted to guide LDRRMCs and policy makers in approaching PDRR. First is the ***geographic and spatial development characteristics*** of the affected area. The topography and spatial characteristic of an area play a key role in shaping the long-term consequences of the disaster in the communities. With most social and economic activities reliant on the topography and spatial characteristic of an area. Disasters with major physical impact may require the need for a new land use framework to consider changes in the topography and the land use of the area after a disaster. This is reflected through the avoidance of hazardous and environmentally critical areas such as steeply sloping areas, sink holes, subsidence areas, erosion and flood prone areas. However, as argued in the article, while geographic characteristics of an area is an important factor in PDRR, it is important to note that disasters and disaster risk should be understood also as socio-economic issue than just a technical problem. The case of Itogon, Benguet also revealed that limited land-use and development options affect the availability of suitable relocation sites, thus, prolonging the distress of the communities in the NBZ waiting to be relocated. Related to this, infrastructure design in relocation areas should suit the region's steep topography, high vulnerability to various hazards, and land classification. As these play a major challenge in the implementation of identified recovery and rehabilitation projects, there is a need to adopt more appropriate designs, construction and cost standards including protective structures and measures in areas that are in highly vulnerable to landslides and flooding.

In relation to the formulation of PDRR spatial development strategies, the no-build zone policy of Itogon, Benguet, taken as a case

study, provided that there are instances when PDRR policies may produce unintended consequences and in the long term, may even increase the existing socio-economic and environmental weaknesses that turn natural hazards into disasters. The case highlights the implications of a vulnerability reduction policies such as NBZs and relocation which will only become an effective post-disaster strategy if complemented by effective and efficient coordination among key stakeholders and anchored on a broader Rehabilitation and Recovery Plan. ***Local governance and the capacity to implement PDRR programs*** is vital in the process. This include the adoption of a Comprehensive Rehabilitation and Recovery Plan, formulation of relocation policies and guidelines in post-disaster context and institutional arrangements to guide the coordination of Local DRRM Council, DRRMCs, private organizations.

Community involvement and key-stakeholders' engagement in post disaster re-construction is an important ingredient to the overall success of re-development. Implementing agencies need to design PDRR programs along with involvement and consultation of stakeholders and communities. PDRR should promote localized decision-making recognizing the importance of local and indigenous knowledge, expertise, and solutions to address identified priorities as well as the recognition of the role of community-based organizations in the decision-making processes. Among the critical decision points include choosing relocation site location, housing design and spatial layout, type of economic and livelihood capacity building initiatives needed as interventions. Engaging community and key-stakeholders in important decisions in post disaster recovery alters their status from passive pawns in the process, to active and contributing directors of their own destiny (Sullivan 2003, 4–27). The perspective from communities must be understood by the people facilitating planning process. Community involvement also involve the utilization of existing indigenous socio-political institutions in the conduct of consultations and decision-making processes and using indigenous knowledge to further understand the geophysical characteristics and history of the area to provide decision makers guidance in the identification of suitable relocations sites.

Another factor the planned relocation of Itogon, Benguet should consider is to ensure ***social and economic sustainability.*** By focusing too much on the implementation of the NBZ policy and not addressing the factors contributing to the progression of vulnerability, such as socio-economic disparities, poverty, land tenure concerns and socio-economic conditions of affected communities, the policy displaced and worsened many of the problems that made people more vulnerable to landslides. Thus, to reduce and mitigate the social and economic impacts of relocation appropriate measures can be

implemented to ensure long-term livelihood prospects. A great deal of attention should be provided to ensure that the introduction of new economic activities and industries complement rather than abolish the pre-existing indigenous technologies and ways of the community. This will ensure that the program intervention will not increases the dependence of communities on external sources and suppliers over whom they have no social control (Korten 1980).

The study also confirmed that a ***context-specific approaches*** of PDRR adaptation is crucial in the process of recovery of communities. The Cordillera, as home to numerous ethnolinguistic groups and predominantly indigenous community in a highland community setting, should then consider in the formulation of relocation policies that are aware of the adaptive resilience of communities which can be located in their indigenous knowledge and practices. Context-specific and sensitive approaches also entail that needs of women, men, children, differently-abled people, indigenous peoples, and other vulnerable groups are addressed. For instance, instead of a pre-determined housing design in relocation sites, the government may let the community draw their respective housing designs in accordance with their individuals needs as well as cultural relevance. Likewise, context-specific approaches also encompass pre-disaster situation in indigenous communities with high regard to social relationships and networks like the Cordillera.

In addition to these overarching factors identified, the environment in which the program exists includes a variety of ***external factors*** that can influence the program's success. External factors include the geophysical characteristics and limited land-use and development options, changes in the demographic patterns, and the availability or non-availability of policies and guidelines in approaching a disaster-induced relocation.

Throughout the process, ***monitoring and evaluation*** of programs and projects and assessing its progress of implementation is important in ensuring that rehabilitation and recovery program stays on track to achieve its intended results. Timely implementation and completion of projects will mitigate or minimize aggravation of the negative impacts of the disaster.

This framework suggests that planning strategies could be adopted to supplement the key factors identified. By assessing the conditions of each community in relation to these key factors, and then implementing appropriate planning strategies, communities would come to more satisfying and improved outcomes of resilience and sustainability.

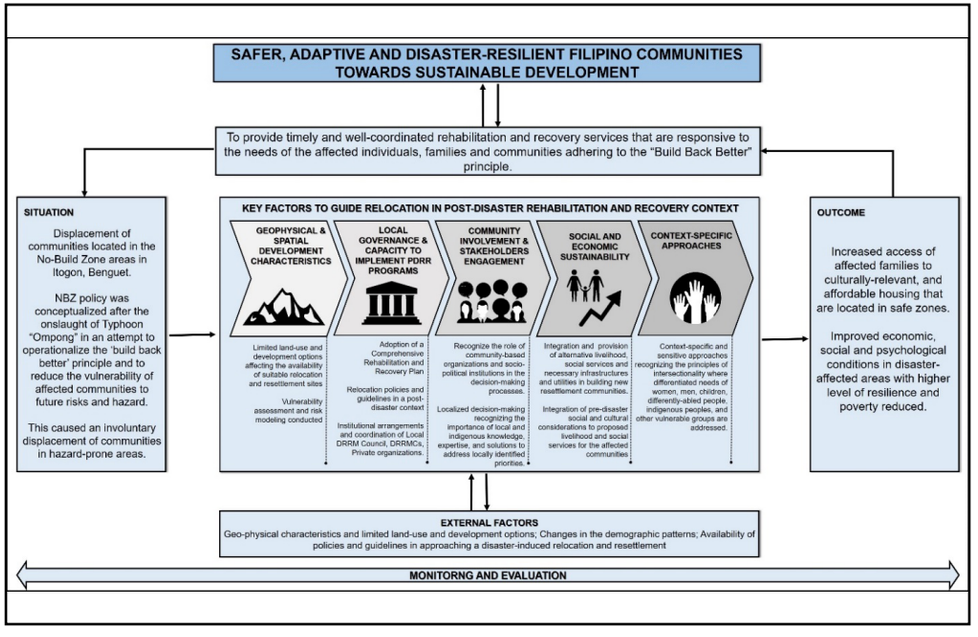

Figure 3. Proposed disaster logic model in approaching post-disaster rehabilitation and recovery in relation to planned relocation of communities in the no-build zone areas in Itogon, Benguet.

Conclusions and Recommendations

The enactment of the PDRRMA, institutionalization of the NDRRMF and formulation of the NDRRMP addressed issues on rehabilitation and recovery through the institutionalization of PDRR as a distinct thematic area. The PDRR was conceptualized not only focusing on restoration efforts damaged facilities and communities but in relation to reduction of disaster risks. These policies recognized the importance of implementing land-use and spatial development strategies including relocation as a transformative disaster risk reduction, and development strategy with the assumption that relocation reduces the vulnerability of communities.

However, the article argued that the notion that relocation is a good practice for PDRR strategy is not always true. The case study provides an empirical case in point of a DRR framework translated in the national and local DRR context. The study showcases that such transition without the required conceptual underpinnings can create more challenges. The case study also provides a new case to better illustrate the argument on the narrow understanding of the 'build back better' principle. The case of Itogon, Benguet provided

that such implementation does not always reduce the vulnerability of the communities simply by removing them away from the hazard prone area. Policies and plans crafted in PDRR situation should be able to address the unintended consequences of such policies which may even increase the existing socio-economic and environmental weaknesses that turn natural hazards into disasters.

These trade-offs concerning post-disaster policies that aim to reduce underlying vulnerably of communities should be carefully studied and looked into before actual implementation. It is rarely enough to assess and focus on one risk—for instance, the landslide—attention should also be paid to a multitude of risks and changing risk profiles especially new and potential risks emerging from socio-economic, political, and cultural dimensions. There are many concerns in planning a safe and sustainable relocation specially in the context of the Cordillera being a predominantly indigenous community in a highland topography with limited land use development options. The vulnerabilities of many communities to landslide and other hazards create the necessity to have relocation as an alternative option and a potential PDRR measure particularly in areas such as Itogon, Benguet.

Achieving the desired recovery outcome of the beneficiaries and affected communities, provides to the need to address and match the assistance provided to the actual needs of the beneficiaries when designing recovery strategies. As described in article, PDRR and relocations should be a context-specific and not a one-size-fits-all approach. As contended, recovery programs and projects in relation to health and sanitation, infrastructure reconstruction, livelihood and employment, housing and relocation, among others, should be guided by a full understanding of differentiated needs rather than focusing solely on reducing existing vulnerabilities. In addition, the article was developed based on the understanding of the current situation and challenges being identified in the implementation of the NBZ policy and planned relocation of communities in Itogon, Benguet. While it may be adopted in other communities and regions, it should be noted as well that it may also not address adequately the diverse needs of other affected communities.

The rehabilitation and recovery efforts of Itogon, Benguet is a classic example of a PDRR anchored on the principles of 'build back better' into the relocation of communities to decrease their vulnerability through the NBZ policy. This brings us to these three important ways on how should we understand and re-think relocation as a people-centered PDRR strategy:

Foremost, in cases of relocations, the implementation of NBZs and prohibitions on return to hazard-prone areas should never be sought without actual plans for the relocation of affected communities, and progress in the acquisition and social preparation for the victims. This

pattern in the failed implementation of NBZs and relocations should drive the government to effectively outline implementation guidelines in consideration of the existing vulnerabilities, land tenure, as well as capacity of the LGU to implement such policies. The Cordillera should also consider in the formulation of relocation programs policies that are aware and sensitive of the adaptive resilience of communities which can be located in their indigenous knowledge and practices.

Finally, the case further recommends that references to PDRR land use planning and spatial development strategies should also recognize the impact and projected consequences related to housing and relocation. The case of Itogon, Benguet provided that there are instances when such policies may produce unintended consequences and in the long term, may even increase the existing socio-economic and environmental weaknesses that turn natural hazards into disasters.

Based on the foregoing findings and conclusions, the following recommendations and interventions are also offered to cover a holistic PDRR program:

1. The NDRRMC and / or the Cordillera RDRRMC should consider the formulation of relocation and housing support policies and guidelines in the context of a post-disaster situation.

2. Eviction of communities located in hazard-prone areas as a response to the impact of a disaster must be taken with caution specially in circumstances where appropriate plans for relocation are not available.

3. PDRR policies should make full use of pre-existing local indigenous knowledge and institutions. These indigenous institutions related to community decision-making, indigenous knowledge is hazard and risk mapping, may be used to fully understand the resilience prospects of the affected community.

4. In cases where relocations sites are not available due to the existing geophysical characteristics of the proposed sites, structural and engineering interventions may be sought to reduce the physical risks in the identified area.

5. There is also a need to explore the full institutionalization of the concept and practice of Pre-disaster recovery planning (PDRP).

6. A bigger picture in the PDRR process—funding and investment programming—should likewise be included in further studies.

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Notes

1. For this specific article, the term and acronym Post Disaster Rehabilitation and Recovery (PDRR) will be used to differentiate it from Disaster Risk Reduction (DRR).

2. For this paper, the term 'relocation' will be used in the context of a post-disaster situation

3. With the issuance of Executive Order No. 335 creating the Civilian Emergency Administration (CEA). The country's experience during World War II and its vulnerability to the nuclear arms race in the 1950s prompted the government to legislate Republic Act 1190 known as the Civil Defense Act of 1954.

4. Ordinance No. 34 s. 2017 titled: An Ordinance adopting and approving the updated Comprehensive Land Use Plan of the Municipality of Itogon, Benguet for the period 2015–2024.

5. The bulk of the rainfall brought by the Tropical Cyclone was received over Luzon particularly in the Ilocos and Cordillera Administrative Regions with the highest observed 4-day rainfall (12–15 September 2018) of 794 mm in Baguio City, Benguet. This value has exceeded the typical amount of rainfall for the month of September by 39.1% (normal is 570 mm).

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