

DIFFERENTIAL IMPACTS OF DISASTERS BASED ON ECONOMIC RESOURCES

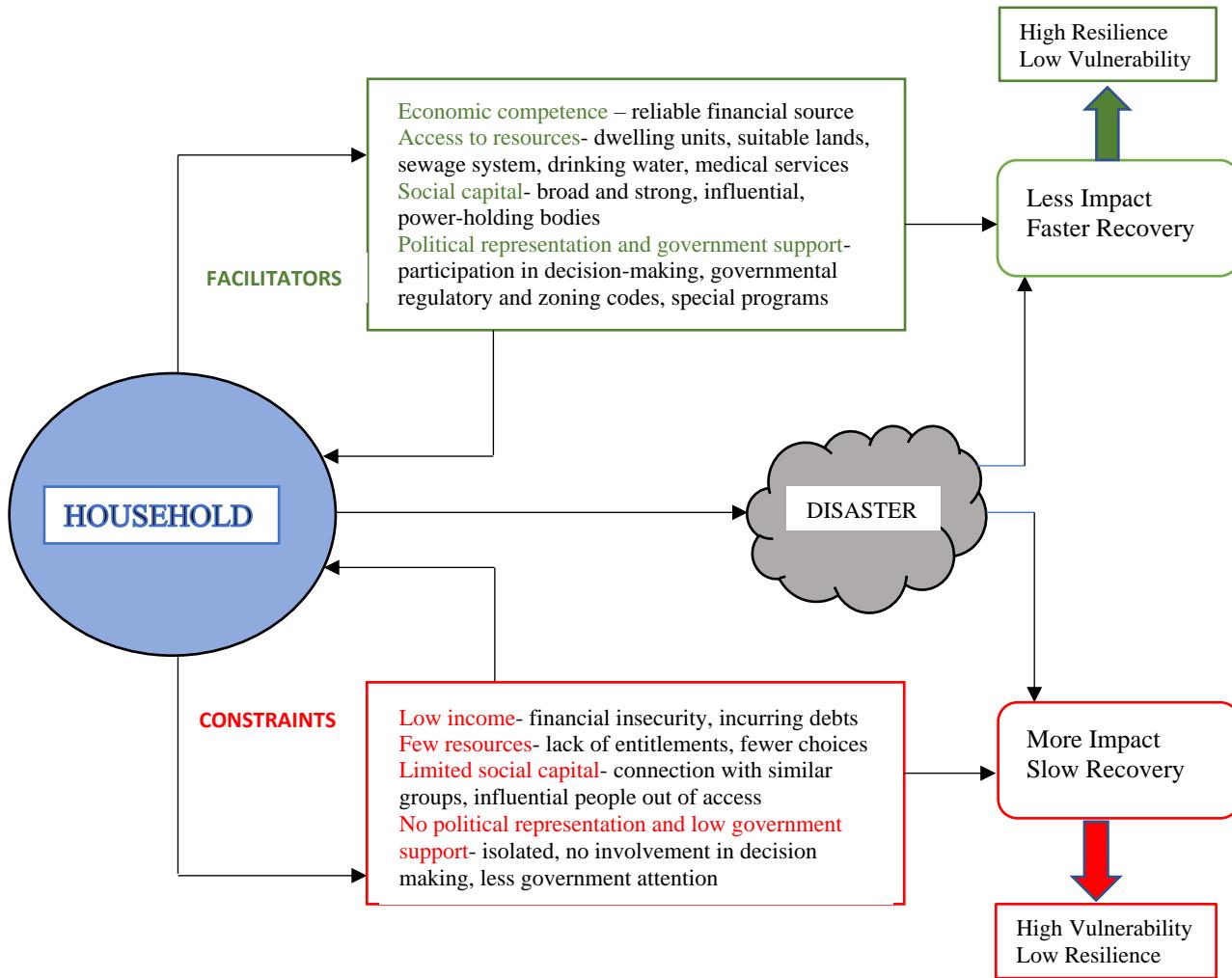


Fig. 1 System Map

Main Issue

It is known that when disasters occur, the social and economic activities as well as the well-being of the people are very likely affected. Income or the economic status, as one of the parts of social vulnerability, is the major indicator of the extent of impact and speed of recovery that an individual or a household will have. Previous studies have found that disasters exacerbate the vulnerabilities of the households that are not equipped with resources and have low income (Adeagbo et al., 2016; Allison, 2012; Doherty & Clayton, 2011; Donner & Rodriguez, 2008; E. Ali & Talukder, 2010; E-axes Forum on Climate Change, Macro and, Finance, 2021; Fothergill & Peek, 2004; Karim & Noy, 2016; Kim, 2012; Lee, 2020; Markhvida et al., 2020; Sufiyan, 2014; Substance Abuse and Mental Health Services Administration, 2017; TEDx Talks, 2011; Zoleta-Nantes, 2002). These households suffer the most in terms of assets and well-being losses. Poor households' disaster problems are intimately linked to survival problems such as decent housing availability, infra- structure maintenance (such as energy, sewer system and water) and the scarcity of financial resources. And while the monetary value of their asset loss is lesser than that of wealthy household, their losses compared to their economic condition looks greater (Markhvida et al., 2020; Patankar, 2019; Zoleta-Nantes, 2002). The amount of government assistance they receive is also not up to the level of suffering they bear on a yearly basis. Thus, people living in poverty face double jeopardy during the disaster. They are already the victims of poverty who are further victimized by the disasters (Lee, 2018; Sufiyan, 2014). Moreover, climate change is worsening the disasters and pushing the poor households further down the vulnerability scheme (E-axes Forum on Climate Change, Macro and Finance, 2021).

System Map

The system map in Figure 1 above shows how different households interact with various facilitators or constraints which influences their post disaster recovery. The issue we are addressing is mostly on a community or a town/city level. The hazard susceptibility of different neighborhoods in the affected community or a city varies among different social groups that are spatially and socially segregated. Poor neighborhoods consist of congested and compromised settlements while wealthy residential neighborhoods are characterized by households who can afford to rent or own a single housing unit (Zoleta-Nantes, 2002). Poor household interact with constraints and have slow recovery and increased vulnerability, while wealthy household interact with facilitators and have faster recovery and lower vulnerability. The root causes of these differential impacts are characterized into 4 areas:

1. Economic Competence

Poor household have lower economic condition pre-disaster and have to bear even more loss after the disaster. They are then slowest to recover, especially when they incur debts they are not able to pay back immediately. The debts are retained for several years and compete with the limited earnings of the household that is only enough to provide for their daily subsistence. On top of that, they are less likely to obtain material and financial assistance from the government which restrict their recovery and increase the vulnerability towards emotional disruptions and negative implications of future disasters (Karim & Noy, 2016; Patankar, 2019; Sufiyan, 2014; Zoleta-Nantes, 2002).

2. Access to resources

Due to low income, poor households also have lower access to resources. They have fewer resources for preventative and adaptive measures, meaning, they lack the endowments that provide resources to cope with the effects of natural disasters (Donner & Rodriguez, 2008; Ibarrarán et al., 2009). They also lack access to the resources such as decent dwelling units, suitable building land, a sewage system and drinking water supply, health centers and medical services. These entitlements are needed for relief and recovery. Gaining access to resources that will improve their living environment is very difficult. Poverty and a resource inaccessibility both lead to poor people being more vulnerable to disasters. Furthermore, the poorest of the poor have fewer choices, less insurance coverage, fewer possessions to liquidate, have more problems finding loans, and have greater dependency ratios in labor migration (Ishtiaque & Nazem, 2017; Substance Abuse and Mental Health Services Administration, 2017; Sufiyan, 2014).

3. Social Capital

Wealthy households have broad and strong social networks compared to poor ones. With such social capital and economic competence, wealthy households can afford to stay at hotels or at friends/relatives residing in other towns when disaster strikes. On the other hand, low-income households have limited social capital who are also in the same situation as them. The wealthy residents use their legal claims as taxpayers and property owners and use their social connections to influence the members of power-holding bodies. Unlike them, low-income groups are less likely to contain connections with influential people, such as money lenders and government officials, which automatically puts them at a disadvantage for post-disaster resources (Donner & Rodriguez, 2008; Ibarrarán et al., 2009; Ishtiaque & Nazem, 2017; Zoleta-Nantes, 2002).

4. Political representation and Government support

Apart from being poor, spatial isolation and lack of participation in government decision making intensifies the vulnerability of the low-income populations. The differences in the economic conditions and political representation among the residents of wealthy neighborhoods, and the poor determine their ability to buffer themselves against the damaging impacts of disasters. The political connections that help direct towards the resources are largely absent for the lower income groups. Political and governmental processes like land use land cover change, conversion of agricultural lands into commercial use and inefficient land management practices displaces poor households and compels them to settle in more hazardous places without adequate forms of protections and benefits from governments' regulatory and zoning codes (Donner & Rodriguez, 2008; Lee, 2018; Sufiyan, 2014). The poor also may not be part of a government's social insurance program because they are concentrated in economic sectors that cannot afford or choose not to contribute, which includes the informal sector, small businesses, or self-employment. Without private or public insurance, the poor often turn to informal insurance agreements. However, these plans may also fail because providers are also often hit by the disaster and financial resources may be diverted to rebuild infrastructures rather than compensate for the loss of livelihoods (Ibarrarán et al., 2009; Ishtiaque & Nazem, 2017).

These root causes also play as the main power dynamics that segregate wealthier households from poorer ones. For wealthy households the upper big box shows the interaction between the households and these four dynamics of power. And for the low-income groups, the lower big box shows the interaction between the households and those power constraints or power absence.

Towards the further right, we can see how these gaps or segregation of these two income groups further increases post disaster, making powerful ones even more powerful in higher position and vulnerable ones even more vulnerable in the lower position.

Thus, it is evident that economic condition of the household greatly influences the capability to cope with the impacts of disasters and recover from them. The existing political, economic, physical, and technological constraints in a community determine one's vulnerability to hazards and other environmental variations. These uneven dimensions in wealth and power pressurizes the marginalized ones and leaves them with no options but to live in sub-optimal conditions that lead to pre-mature death.

REFERENCES

- Adeagbo, A., Daramola, A., Carim-Sanni, A., Akujobi, C., & Ukpong, C. (2016). Effects of natural disasters on social and economic well-being: A study in Nigeria. *International journal of disaster risk reduction*, 17, 1-12.
- Ali, E., & Talukder, D. (2010). Analysis of poverty dynamics: Bangladesh perspective. *Journal of Third World Studies*, 27(1), 273-284.
- Allison, A. (2012). Ordinary refugees: Social precarity and soul in 21st century Japan. *Anthropological Quarterly*, 345-370.
- Doherty, T. J., & Clayton, S. (2011). The psychological impacts of global climate change. *American Psychologist*, 66(4), 265.
- Donner, W., & Rodríguez, H. (2008). Population composition, migration and inequality: The influence of demographic changes on disaster risk and vulnerability. *Social forces*, 87(2), 1089-1114.
- E-axes Forum on Climate Change, Macro and, Finance. (2021, June 29). *The real economic impact of natural disasters: accounting for distributional impacts* [Video]. Youtube.
<https://www.youtube.com/watch?v=oOvoqs7wZoc>
- Fothergill, A., & Peek, L. A. (2004). Poverty and disasters in the United States: A review of recent sociological findings. *Natural hazards*, 32(1), 89-110.
- Ibarrarán, M. E., Ruth, M., Ahmad, S., & London, M. (2009). Climate change and natural disasters: macroeconomic performance and distributional impacts. *Environment, development and sustainability*, 11(3), 549-569.

Ishtiaque, A., & Nazem, N. I. (2017). Household-level disaster-induced losses and rural–urban migration: Experience from world’s one of the most disaster-affected countries. *Natural hazards*, 86(1), 315-326.

Karim, A., & Noy, I. (2016). Poverty and natural disasters: a regression meta-analysis. *Review of Economics and Institutions*, 7(2), 26.

Kim, N. (2012). How much more exposed are the poor to natural disasters? Global and regional measurement. *Disasters*, 36(2), 195-211.

Lee, D. (2020). The impact of natural disasters on neighborhood poverty rate: A neighborhood change perspective. *Journal of Planning Education and Research*, 40(4), 447-459.

Markhvida, M., Walsh, B., Hallegatte, S., & Baker, J. (2020). Quantification of disaster impacts through household well-being losses. *Nature Sustainability*, 3(7), 538-547.

Patankar, A. (2019). Impacts of natural disasters on households and small businesses in India. *Asian Development Bank Economics Working Paper Series*, (603).

Substance Abuse and Mental Health Services Administration. (2017). Disaster technical assistance center supplemental research bulletin, greater impact: How disasters affect people of low socioeconomic status.

Sufiyan, A. M. (2014). Disaster and poverty: the differential impacts of disaster on the poor in the Gulf Coast region.

TEDx Talks. (2011, August 9). *The relationship between poverty and natural disasters / Kristina Scott / TEDxRedMountain* [Video]. YouTube.

<https://www.youtube.com/watch?v=DTXNr8UsnTQ>

Zoleta-Nantes, D. B. (2002). Differential impacts of flood hazards among the street children, the urban poor and residents of wealthy neighborhoods in Metro Manila, Philippines. *Mitigation and Adaptation Strategies for Global Change*, 7(3), 239-266.