OPINION PIECE

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Beyond the aggregate: defining and measuring households' resilience

The severity of natural disasters is usually measured based on the "direct damages" they provoke. These "direct damages" include physical damages to assets (e.g. after a hurricane or an earthquake) and losses in agricultural production (particularly in the case of droughts). In most cases, direct damages are estimated as the expenditure needed to repair or replace damaged assets, from repairing roads and roofs to replacing lost appliances and cars. Sometimes the loss due to the interruption in economic activity during the event is also considered.

According to Munich Re, a global provider of reinsurance, primary insurance and insurance-related risk solutions, economic losses due to natural disasters averaged US$ 187 billion per year between 2009 and 2018, a 30 per cent increase over the 30-year average of US$ 41 billion (Munich Re, 2019). However, this increase in direct damages does not fully inform as to the real impact of these disasters. Other dimensions – such as the impact of disasters on health, education or quality of life – are not usually incorporated into disaster loss estimates, even though they are often the main drivers of the full impact of these shocks.

This is not only a measurement issue. One implication of using aggregate economic losses as the unique measure of disaster impacts is that disaster risk management strategies tend to favour the wealthy. Interventions targeting poor people, who have few assets and small incomes to start with, cannot generate large gains in terms of avoided economic losses and are therefore discouraged. Similarly, avoided losses cannot measure the benefit from "soft solutions", such as financial inclusion or social protection, and tend to favour hard solutions such as investments in infrastructure.

This metric is therefore unlikely to prioritize attractive solutions aimed at helping poor people to become more resilient, i.e. better able to cope with and recover from disasters and other shocks (Hallegatte et al., 2017). In addition, risk management does not give sufficient attention to small interventions that could reduce the stunting of children, disease transmission, absenteeism from work and school, lost wages, and other impacts on well-being that reduce resilience.

Interventions that leverage trade to make populations more resilient are also undervalued when benefits are measured solely in terms of avoided asset or economic losses. They do not capture the benefits that accrue from using imports to replace critical goods, such as food or medicine, that cannot be produced domestically. The fact that firms trading with clients and suppliers outside an affected area tend to recover more quickly than firms trading solely within the affected area is often not considered (Todo et al., 2015). The vulnerability that results from being dependent on imports for essential goods and services, and therefore dependent on major ports or airports (Hallegatte et al. 2019), is also not quantified.

A better assessment of risk management solutions would result from metrics which could (1) better capture the impact of disasters on well-being and (2) account for the ability to cope with disaster impacts, including by means of supply chains, trade and financial instruments. The concepts of socioeconomic resilience and well-being losses (i.e., a measure of the impact of disasters that captures the specific vulnerability of poor people) aim to capture these effects. The application of these metrics to the assessment of trade policies would make it possible to balance the benefits that trade brings in terms of resilience against the risks it can also create.