

LONG-TERM ENVIRONMENTAL CHANGES HAVE A BIGGER IMPACT ON MIGRATION PATTERNS THAN SUDDEN DISASTERS: Evidence from Indonesia

The migration of whole households within a country in response to environmental changes seems to be driven mostly by increases in temperature. Sudden disaster events tend to have a much smaller impact on such migration and the direction of the effect may depend on whether people are directly or indirectly exposed to disaster.

These are the key findings of a study by Dr **Pratikshya Bohra-Mishra** and Professor **Michael Oppenheimer**, to be presented to the NORFACE migration conference at University College London this week.

The authors suggest that the counterintuitive migration response to natural disasters may partly be explained by 'risk aversion', a hypothesis that posits that exposure to natural disasters increases risk-averse behaviour among households. This may influence their ultimate migration response.

The motivation behind this study rests in the availability of household level panel data from Indonesia with an exceptional tracking rate combined with frequent occurrence of natural disasters – thus providing a natural experiment to conduct the influence of environment on migration.

The study investigates the effects of sudden and long-term environmental changes on the probability of migration of whole households across province. The results suggest that temperature may be the main environmental driver of whole household migration, which has significant implications for long-run effects of global warming on migration of entire households.

Sudden disaster events on the other hand, tend to have much smaller impact on whole household migration and the direction of the effect may vary by the type of exposure.

The researchers hypothesise that exposure to natural disasters may increase risk-averse behaviour among households and therefore households from provinces with higher exposure to disaster events may respond by lowering their movement because migration is a risky endeavour.

On the other hand, households that directly experience economic hardship due to loss from disaster may respond to their increased perception of risk by resorting to migration instead because for them the risk from not migrating outweighs the risk involved with migration, which could also be used as an insurance mechanism.

The household panel data are used to generate records of provincial level migration flows as well as direct measures of disaster experienced by households over time. A different dataset recording multiple measures of disaster effects by year aggregated at the province level is also used to capture indirect measures of disaster. Finally, metrics of longer-term environmental factors are introduced by using the level of precipitation and temperature for each province.

Dr Bohra-Mishra, lead author of the study, says:

'The effect of temperature seems to dominate migration decisions of households at least at the provincial level while natural disasters appear to have much smaller impact on such migration.

'More work needs to be done however, to verify the hypothesised relation between exposure to natural disasters, risk averse behaviour and migration response.'

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