



Science for Environment Policy

Exploring interlinked drivers of human migration in the context of environmental change

A framework on the effects of environmental change on human migration has been developed by researchers. It makes clear that environmental change can influence migration directly but also indirectly through impacts on economic, social and political factors. The framework can be used to guide further research, evaluate policy options, or develop predictions for migration under global change, say the researchers.

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Migration in response
to environmental
change

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There are several global environmental changes which may cause human migration.

[Climate change](#) is, of course, a major factor. Sea level rise, changes in storm or cyclone frequency, changes in rainfall patterns, forest fires, increases in temperature and ocean acidification may result in loss of homes or livelihoods. Apart from climate change, land degradation, in the form of loss of nutrients, [soil](#) erosion, pollution and salinisation can also drive changes that lead to migration. Similarly, degradation of coastal and [marine ecosystems](#), as a result of fishing as well as agricultural and urban pollution can impact livelihoods and prompt movements.

Extreme environmental events such as hurricanes, tsunamis, floods and landslides can also cause immediate loss of income and therefore encourage population displacement. However these displacements tend to be at short distance and often within the same state.

However, there are multiple drivers of migration and rather than trying to identify 'environmental migrants', which may be difficult or even impossible, it might be more helpful to examine all drivers of migration and then focus on how environmental changes might influence them.

The framework produced for this study does exactly that. On a large scale the researchers identified five main factors which influence people's decision to stay or go:

- 1) **Economic**, which includes employment opportunities, income and the price of living.
- 2) **Social**, which includes the search for educational opportunities or obligations to kin, such as marriage or inheritance practices.
- 3) **Political**, which includes discrimination or persecution, conflict, levels of security and policy incentives, for example a change in land ownership policy.
- 4) **Demographic**, which includes population density and structure and risk of disease.
- 5) **Environmental**, including exposure to hazards and land productivity and habitability.

On a smaller scale personal characteristics such as age, sex, education, wealth or marital status may all have an influence. Furthermore, it should be recognised that none of these drivers occur in isolation from each other. For example, population density is unlikely to drive migration alone, but high densities in combination with low income could well mean that people decide to leave.

Environmental change might affect all these main drivers, directly in the case of environmental factors but also indirectly for the others. For instance, by reducing agricultural or fisheries' productivity, environmental change can affect economic factors such as income, especially those of rural people. This may occur slowly, during gradual change of rainfall patterns, reducing outputs and incomes over long periods of time — but an event like a cyclone can also result in loss of livelihoods overnight.

Political drivers can also be affected by environmental changes, when, for example, the scarcity of essential resources such as [water](#) can precipitate or exacerbate conflict. Policies towards reductions in carbon emissions and eventual decarbonisation may also result in shifts of the locations of areas of economic growth, again influencing people's decision of whether and where to move.

The researchers say that this framework can be used in a number of ways, helping to improve knowledge, evaluate policy options, or predict future movements. Importantly, it clarifies the interlinked nature of the drivers of migration and how these might be affected by environmental change.