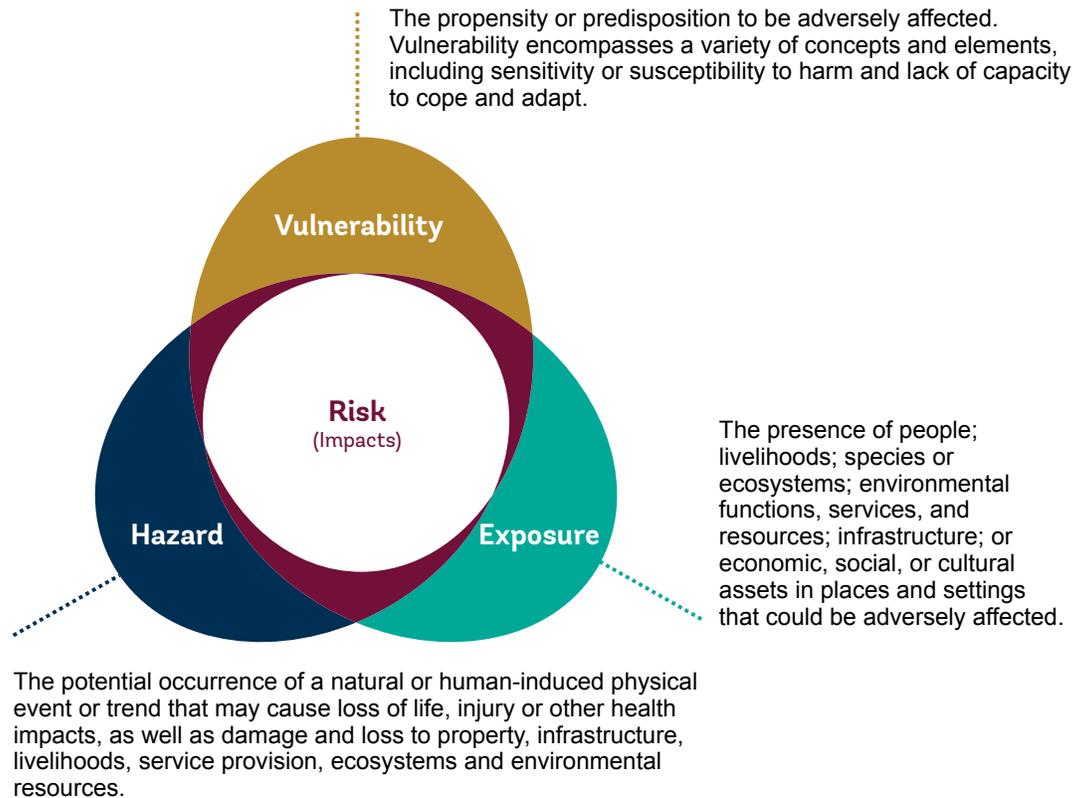


live (exposure). Vulnerability captures how much a given negative weather event affects a household's income or well-being. As noted, poor households are particularly vulnerable to weather hazards because they disproportionately rely on natural capital to earn income and because their lack of other assets makes it much harder to manage the impacts of a weather hazard.

Policies are needed in each of these areas. The probability distribution of hazards in the future can be altered through mitigation policies. An example is carbon taxes, which reduce emissions, particularly in high-emitting countries.<sup>5</sup> However, other policies, such as those that encourage increasing tree cover, can also bring more immediate changes in local weather conditions.<sup>6</sup>

Exposure can be altered by policies that enable households to move themselves or their assets to locations less affected by hazards. Policies that change a household's vulnerability to hazards range from those focused on adaptation, such as encouraging households to invest in water management and soil quality or in better-quality housing, to more general development policies that increase the capital of poor households, thereby allowing them to better cope with climate shocks or earn more income from activities less affected by hazards. For example, increasing the quality of education, building better roads that connect households to markets, improving city planning, adopting early warning and evacuation systems, or facilitating financial inclusion can all contribute to reducing a household's vulnerability.

**FIGURE 3 – Understanding climate impacts: The hazard, exposure, and vulnerability framework**



Source: IPCC AR5/6

<sup>5</sup> For example, see Rafaty et al. (2021); for Europe, Lin and Li (2011); for the United Kingdom, Martin, de Preux, and Wagner (2014); for Canada, Rivers and Schaufele (2015) and Metcalf (2019); and for Sweden, Andersson (2019).

<sup>6</sup> See, for example, Harlan et al. (2006), Schwaab et al. (2021), and Ziter et al. (2019).