

## PLANETARY HEALTH

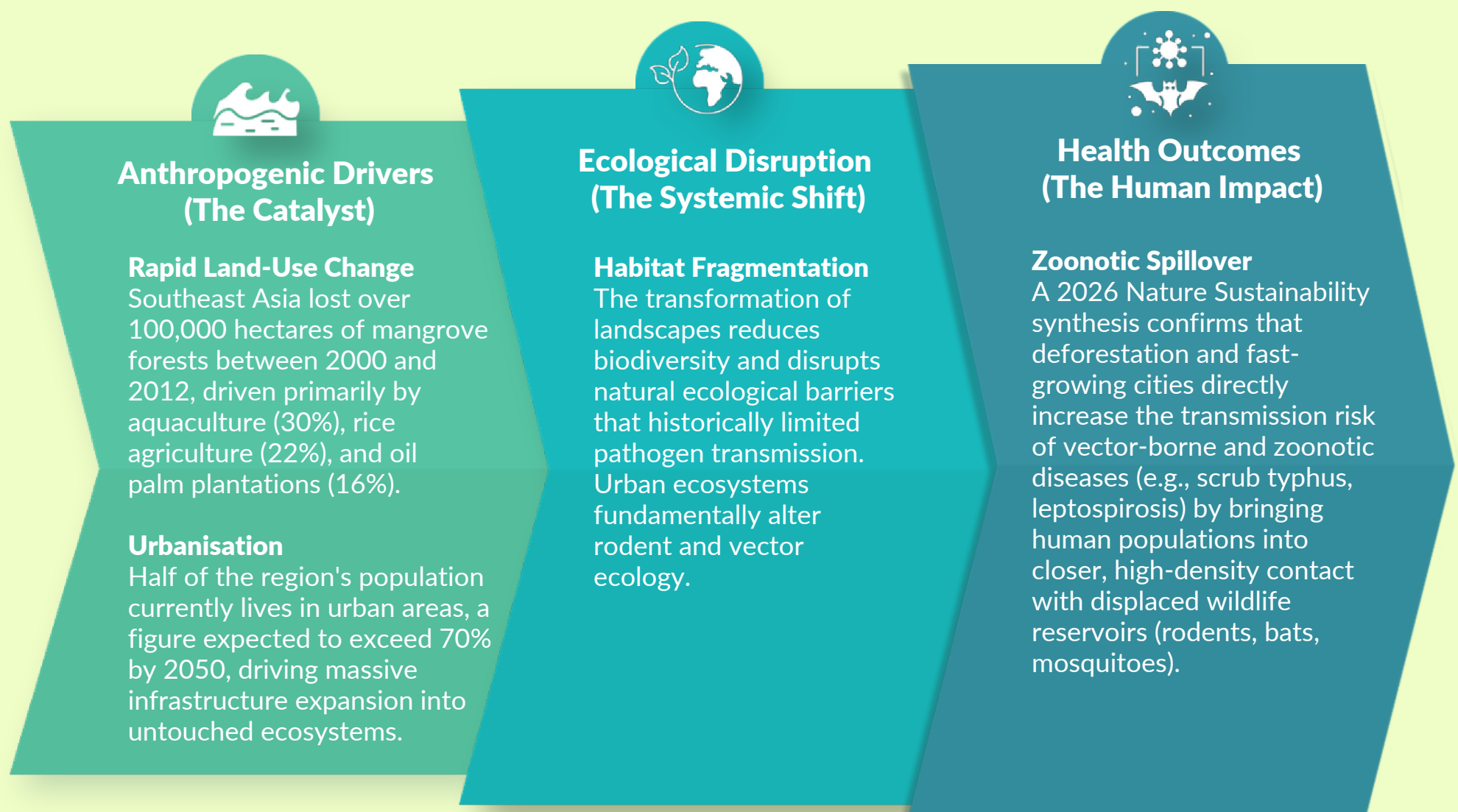
### Security Vulnerabilities of Environment-Health Nexus

Compiled by **Pey Peili**

As ASEAN operationalises Vision 2045, the most pervasive threats to regional stability stem from the systemic disruption of our natural ecosystems. Addressing these compounding crises requires a shift to a Planetary Health paradigm, a structural approach to Non-Traditional Security (NTS) which recognises that human health and economic resilience are inextricably bound to ecological stability. When macro-level anthropogenic activities breach environmental boundaries, they trigger cascading crises that transcend borders and overwhelm national social protection systems. To illustrate this, this NTS Fast Fact illustrates how upstream environmental degradation drives direct health security risks, and how the escalating climate stressors disproportionately compound the vulnerabilities of ASEAN's rapidly ageing demographic.



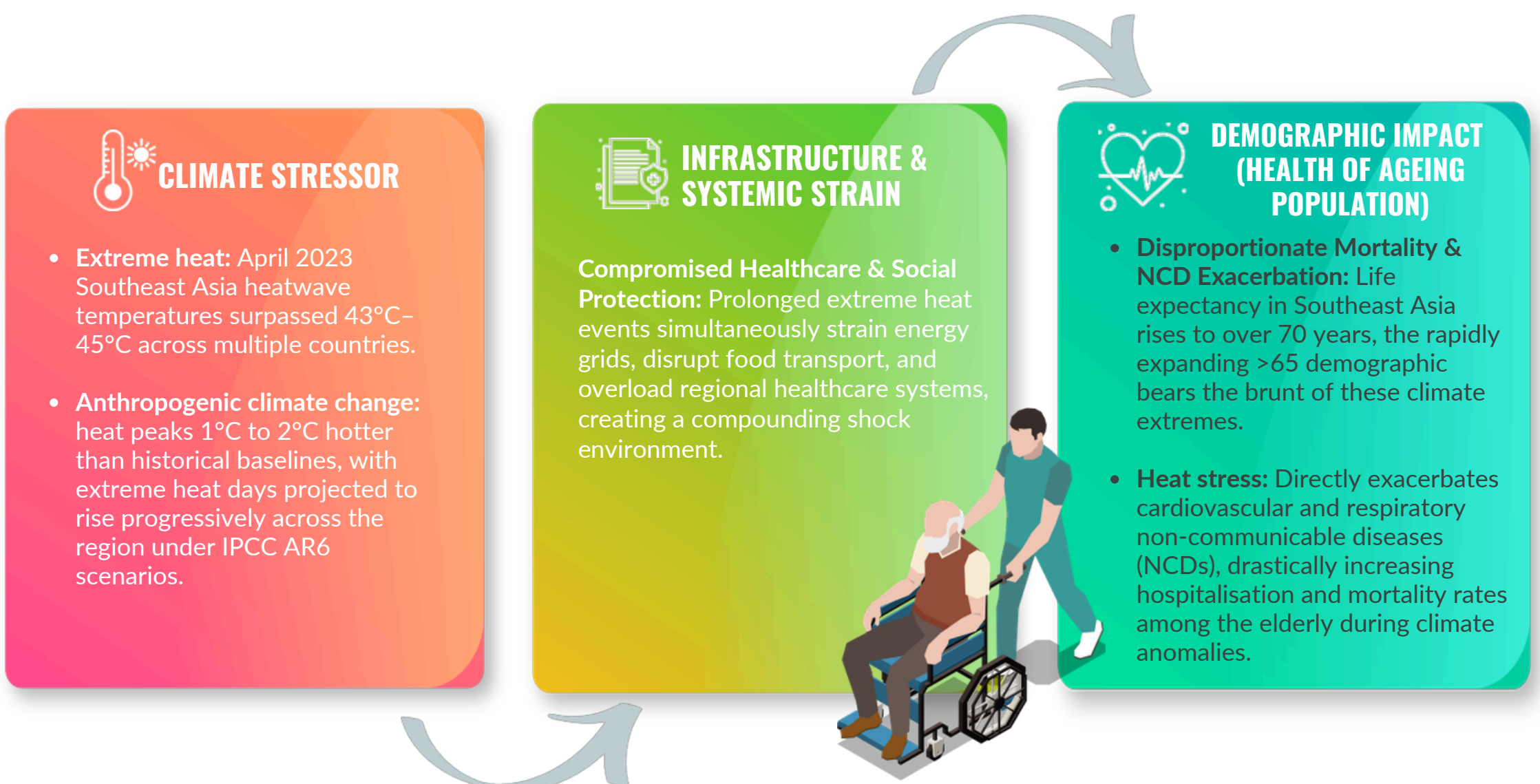
**FIGURE 1: CASCADING RISKS: ANTHROPOGENIC DRIVERS AND PLANETARY HEALTH OUTCOMES IN SOUTHEAST ASIA**



This diagram illustrates the structural causality between economic development activities and non-traditional security (NTS) health threats in ASEAN. It demonstrates that emerging infectious diseases and zoonotic spillovers are not isolated biological anomalies, but direct consequences of anthropogenic environmental degradation. By mapping land-use change and urbanisation to habitat fragmentation and subsequent disease risk, this diagram underscores the necessity of a Planetary Health approach, where environmental preservation is treated as a primary public health intervention.

**Sources:** Compiled from Richards, D. R., & Friess, D. A. (2016). Rates and drivers of mangrove deforestation in Southeast Asia, 2000–2012. *Proceedings of the National Academy of Sciences (PNAS)*. <https://www.pnas.org/doi/10.1073/pnas.1510272113>, accessed 12 May 2026; Fell, A., et al. (2026). Global evidence synthesis on land-use change and zoonotic risks. *Nature Sustainability*. <https://research.bangor.ac.uk/en/publications/global-evidence-synthesis-on-land-use-change-and-zoonotic-risks/>, accessed 12 May 2026; and, Hassell, J. M., et al. (2021). Rats and the city: Implications of urbanization on zoonotic disease risk in Southeast Asia. *PNAS*. <https://pmc.ncbi.nlm.nih.gov/articles/PMC9522346/>, accessed 12 May 2026.

**FIGURE 2: INTERSECTING VULNERABILITIES: CLIMATE STRESSORS AND THE HEALTH OF ASEAN'S AGEING DEMOGRAPHIC**



This diagram isolates the intersection of three defining ASEAN Community Vision 2045 megatrends: climate change, health, and the rapid ageing of the regional population. Climate adaptation strategies must account for demographic vulnerabilities. As anthropogenic climate change increases the frequency and intensity of extreme heat events across Southeast Asia, the region's growing elderly population faces disproportionate health risks. There is an urgent need to integrate climate resilience into the care economy, ensuring that healthcare and social protection systems are specifically tailored to protect vulnerable ageing populations from environmental shocks.

**Sources:** Compiled from Intergovernmental Panel on Climate Change (IPCC). (2023). *Climate Change 2021 – The Physical Science Basis: Working Group I Contribution to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change*. Cambridge: Cambridge University Press, <https://www.cambridge.org/core/books/climate-change-2021-the-physical-science-basis/415F29233B8BD19FB55F65E3DC67272B>, accessed 12 May 2026; Mengaldo, G., & Faranda, D. (2024). 15th April 2023 Southeast Asia heat peak influenced by both human-driven climate change and natural variability. *ClimaMeter*, Institut Pierre Simon Laplace, CNRS, <https://www.climameter.org/20230415-southeast-asia-heat-peak>, accessed 12 April 2026; and, Villarroel, P.M.S., et al. (2023). Emerging and re-emerging zoonotic viral diseases in Southeast Asia: One Health challenge. *Frontiers in Public Health*. <https://www.frontiersin.org/journals/public-health/articles/10.3389/fpubh.2023.1141483/full>, accessed 12 May 2026.