**Figure S1 online:** Ordinary differential equations for the system dynamics model. CF = community functioning; SC = social cohesion; PR = preparedness and response; ER = external resources; PM = prevention / mitigation; PVID = population vulnerability, inequality, and deprivation; *α* = CF depletion rate constant (a value of 5 was selected; this needs calibration in future work); Event was parameterized as a mono-exponential decline; Event0 = the magnitude of the event (selected as 1.0; this needs calibration in future work); and *k* = event damage rate constant (a value of 4 was selected; this will vary by nature of event; this needs calibration in future work).

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