

Addressing Disaster Risk and Recovery in the Anthropocene

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Civil
Engineering



The Cities &
Infrastructure
Systems Lab



Matrix Institute for
Applied Data Science

IESVic
integrated energy systems

Break Differently

e.g., Earthquake and Tsunami

2011

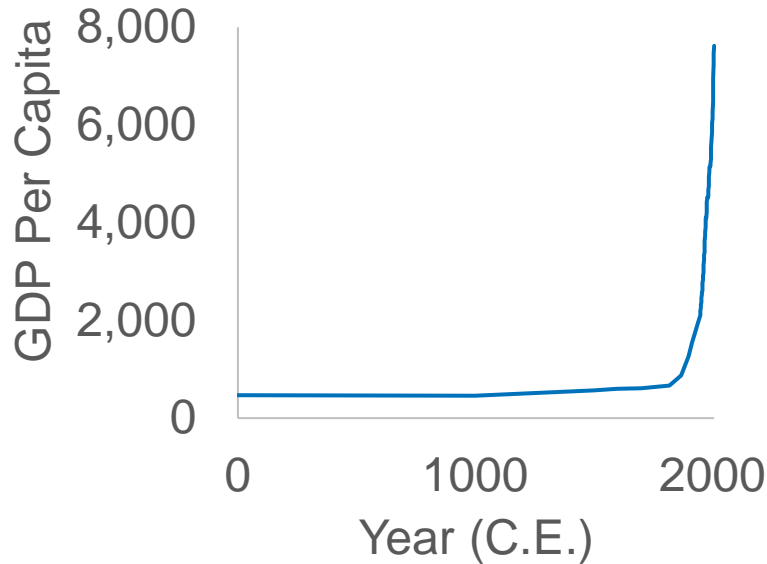
Damage to assets
Interruption of infrastructure networks
Human caused secondary hazards

1700

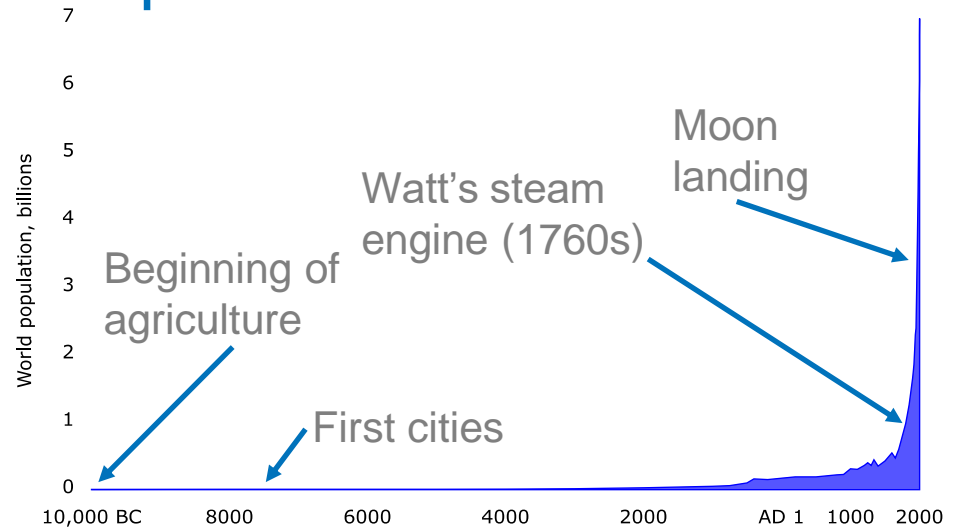
Erased assets
No survivors

More to Lose

Income



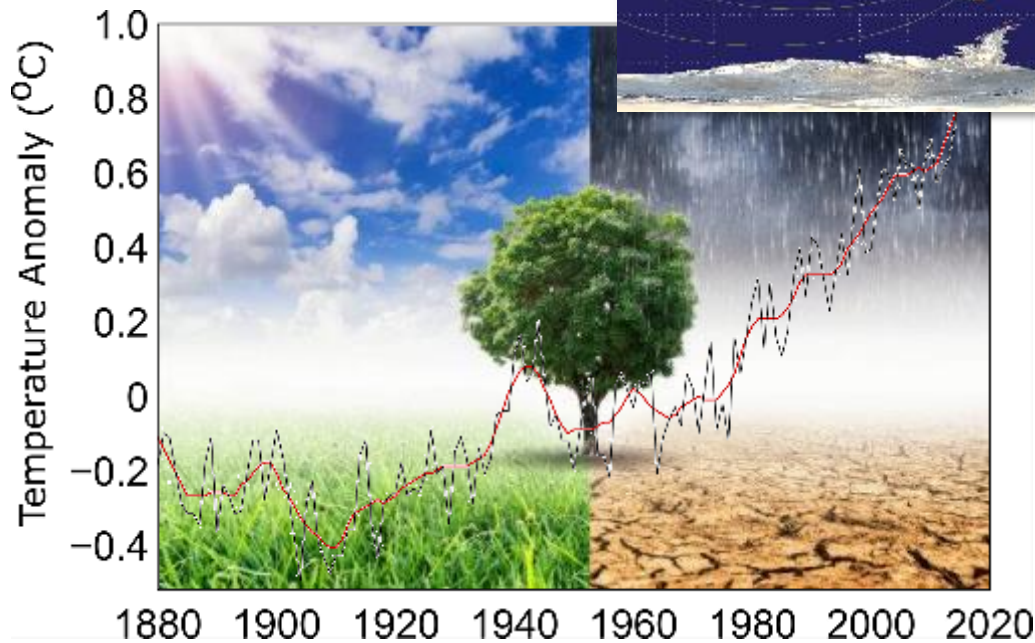
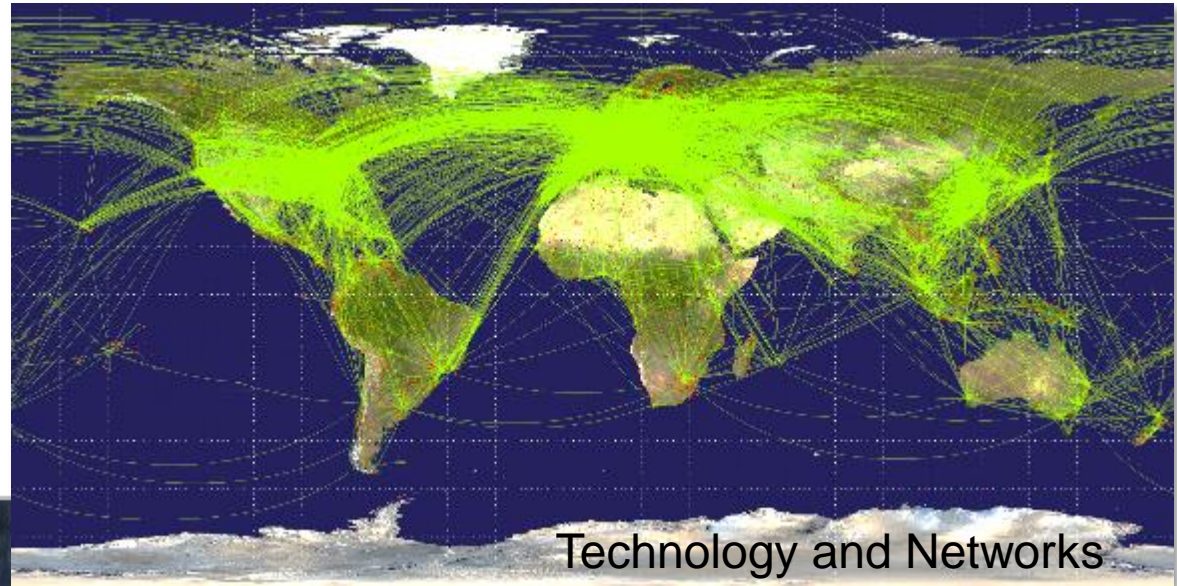
Population



Original Population Figure: <https://en.wikipedia.org>

GDP/cap In 1990 International Geary-Khamis dollars, www.ggdc.net/maddison

Changing Hazards



Opportunities to Accelerate Disaster Recovery

1. Examine coincident concerns from atypical events
 - Assessments of multiple rare hazards shows the wider benefits of reducing risk together
2. Look outward when assessing rare events
 - Whose operations can you really depend on?
 - Who is really depending on you?
3. Coordinate across networks
 - Extensive coordination in investment in assets and restoration plans across sectors with emergency management and communities for whole-of-society disaster risk reduction

Thank-you

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