

# Integrated-systems modelling for resilient city regions and Climate-KIC's 'ACT on NBS'

*A5 - Building inclusive multi-stakeholder and bankable flood resilience in cities*

**26th June 2019 - 14:00 - 13.30 - Room: S34-35**

ICLEI Resilient Cities 2019

10th Global Forum on Urban Resilience and Adaptation, Bonn

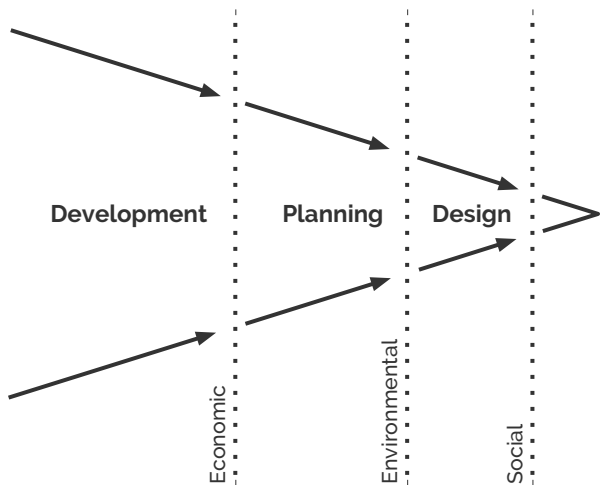
**Andrew Simmons**    Director of Research, Resilience Brokers

# Introduction to Resilience Brokers and the Trust

- UK group to speed up and scale up transformative urban/rural development;
- Operates in space between private, public, knowledge and civil society sectors;
- Leading experts foster **integrated-systems thinking** and **collaborative approaches**;
- Develop tools and demonstrators to support implementation of 2030 agenda in city regions;
- Open source, free-to-use tools - "**resilience.io**" integrated-systems modelling platform
- Data-driven, social and natural science based.

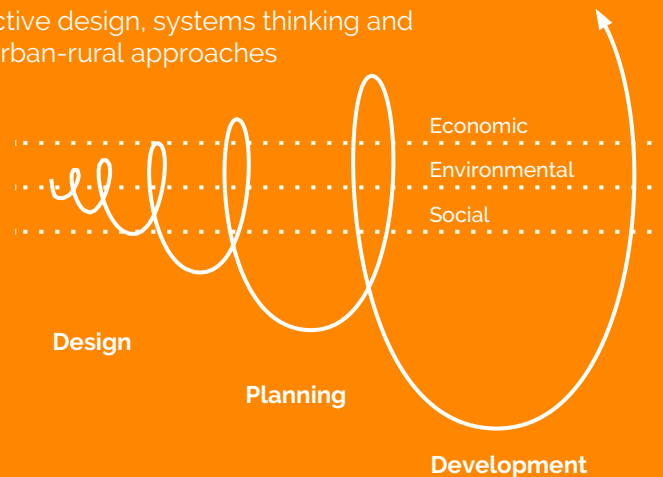


# Current approach

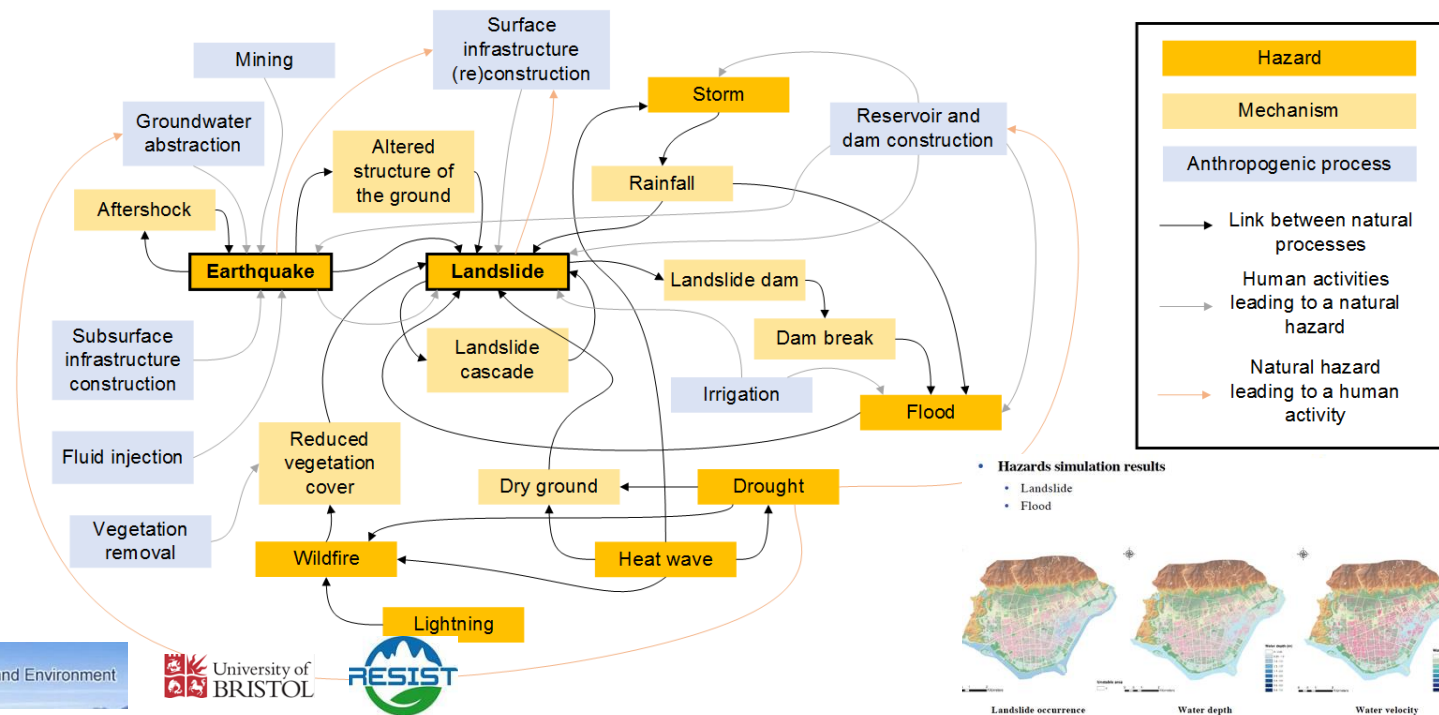


# *CHEER systems health approach*

Increasing investment and shared stakeholder value through interactive design, systems thinking and collaborative urban-rural approaches



# Systems modelling – a primer *(multi-hazards in Sichuan Dujiangyan)*

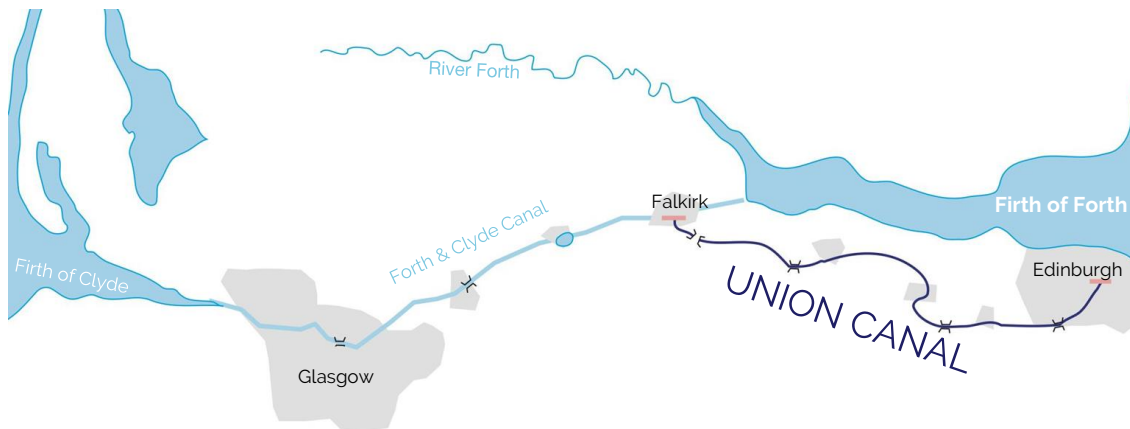


# Use case

## Union Canal (Scotland)

### 'URGED' - Urban Resilience GEO Data Portal

supported by European Space Agency's Artes 20 IAP programme



#### Primary purposes:

- Identification & exposure assessment of flood hazard;
- Relative estimation of urban flood vulnerability;
- Updated flood risks associated with urban-rural land cover scenarios.

#### Tools and techniques:

- **RasterFrames Earth-observing (EO) data analysis:**  
ERDAS Imagine, Harris ENVI and SARscape and SNAP;
- **Vector data management:**  
FME, QGIS, GDAL and PostGIS;
- **Hydrological analyses:**  
MIKE FLOOD, WhiteBox;
- **Time series and forecasting:**  
R-Shiny/R-Studio.

# *Emerging use case*

## **Infrastructure Interdependencies**

China - Jingjinji Metropolitan Region  
(Beijing-Tianjin-Hebei Megacity)



# Adaptive Cities Through Nature Based Solutions ('ACT on NBS')

Create more liveable, resilient cities through substantially increasing the introduction of nature-based solutions and enhancing natural systems.

Climate-KIC, Resilience Brokers  
*Over 20 cities and over 17 involved partners*

# #ACTonNBS Cities

- Milan
- Madrid
- Orleans Metropole
- Torino
- Prague
- Vejle
- La Spezia
- Savona
- Warsaw
- Union of Towns and Cities in Slovakia
- Amsterdam (Engineering dept)
- London
- Bratislava
- Utrecht
- Valladolid
- Bologna

# ACT on NBS - engagement process

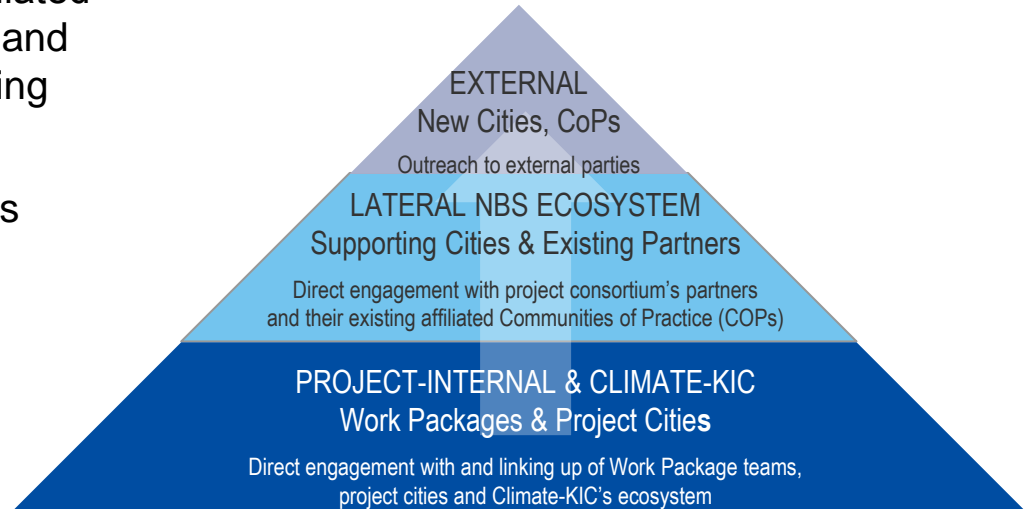


## Community team activities and process: Towards a knowledge-sharing platform

1. Map and engage network;
2. Co-establish interfaces between WPs, cities, C-KIC and resource needs;
3. Co-identify knowledge exchange needs, gaps and opportunities;
4. Sustain collaboration, relationships and knowledge exchange with cities and WPs;
5. Adopt project Monitoring, Evaluation & Learning (MEL) framework;
6. Examine and disseminate project lessons with network, CoPs and events; ... Expand network...

# ACT on NBS - key functions

- To facilitate knowledge exchange between WPs, project cities and with Climate-KIC;
- To engage with consortium's affiliated Communities of Practice (CoPs) and their partners relevant to advancing NBS knowledge and practice;
- To proactively seek out new cities and relevant CoPs (e.g., EIB, LIFE, WBCSD, H2020, ICLEI, World Bank);
- Knowledge capture and dissemination (e.g., events, webinars).



Categorization of Engagement - The Flow of Knowledge Sharing:  
With whom does the community managers engage?

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