Thames basin: Green & grey storage solutions to reduce insurance losses to fluvial flooding

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AIM

- To co-develop and test the **eco:actuary** policy support tool with project partners & stakeholders in London and surrounding towns.
- Eco:actuary will map insurance-relevant natural capital based on local to global data and spatial modelling using the most robust climate, land cover, terrain and mitigation infrastructure data.
- These will be combined with maps of socio-economic exposure based on agriculture, infrastructure, population and urban exposure to highlight **areas at risk and identify local or upstream mitigating actions**.
- Key risks to be analysed are urban drainage and upstream fluvial floods (coastal flooding by storm surges are out of scope for GI investments in this project).

Nature based Solutions

- Potential interventions include urban green infrastructure and SUDS and upstream rural land management coupled with grey infrastructure
- Urban GI and SUDS will have co-benefits for recreational ecosystem services and pollution/sewer overflow management. Rural GI will have co-benefits for biodiversity, nature based tourism and other ecosystem services
- Schemes would likely involve green/grey investments associated with green bonds, working with Thames Basin partner Global Garden Ltd. Also reductions in insurance policy costs for **farmers** upstream of London, who can increase water storage on their land and regulatory **storage loss offset and banking** by infrastructure and housing developers

Methods and data to be used -

Using the widely used tools of the eco:engine platform as a basis, NAIAD will build an insurance industry-relevant policy support system to assess the biophysical role of natural capital in hazard mitigation, and the impacts of proposed risk reduction investments, working alongside insurance companies and green bonds developers. We will focus on green and grey urban and rural infrastructure in the face of continued climate change and urbanisation in this basin. The resulting Eco:actuary tool will provide the biophysical basis for economic valuation of insurance risk.

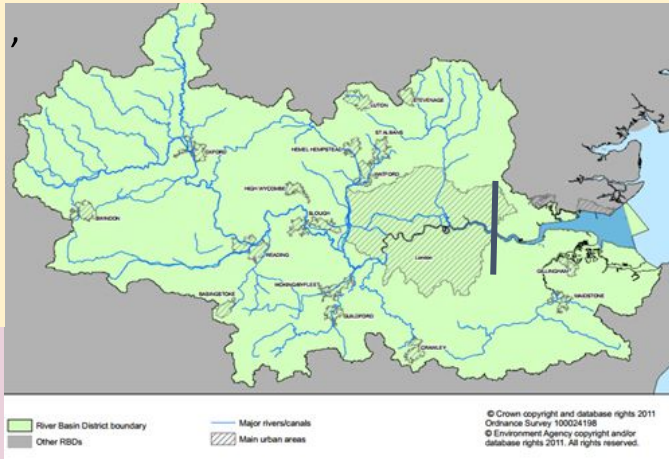
Main Outcomes Sought

- More and better use of scientific evidence in flood risk and mitigation decision making
- Improved flood protection strategies for London, better distribution of benefits
- Co-benefits for environmental conservation and the urban environment

Thames basin:
13 million people
London:
22% UK economy
(21% of UK Tax)
City of London:
3% UK economy

INSURANCE:

1. Most insurance does not factor in ecosystems
2. Green bonds will have a role in future
3. City of London is globally important insurance hub



Key Stakeholders.

Environment Agency - for planning and investment decisions. **Regional and local planning authorities** - development planning and emergency planning. **Thames Water** - water resources planning, **Association of British Insurers** to test and use the eco actuary system. **London Climate Change Partnership**. **Insurance industry. Green bonds investors.**

Partners participating:

KCL - modelling, data, links with NAIAD consortia, .gov and .org.
AmbioTEK - user interfaces, data, links with insurance and bonds.