



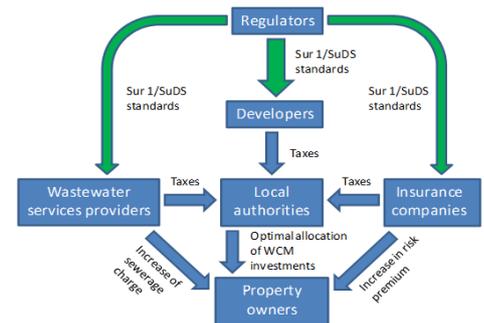
Finance of Collective Action: the Case of Catchment Management

Summary

The study of the financing of water control discussed here is part of a larger analysis of water-catchment management that involves collective action by multiple and diverse stakeholders with differing aims, resources, authority and responsibility. These stakeholders also differ in how the finance is structured (debt, equity or grants), the terms under which finance is acceptable, and how the costs and benefits of projects are perceived.

The example of reducing flood risk through control of surface water run-off is explored here, although the lessons learned are applicable to a broad array of catchment area projects and aims. Five finance schemes are shown to be possible and feasible, with relative acceptability varying across specific projects:

- Financing through taxes: Introduction of new taxes and centralisation of the allocation of new investments in a dedicated agency.
- Third-party financing: The initial investment is financed by actors benefiting from the new infrastructures, as well as banks and other financial institutions.
- Financing by the stakeholders: Stakeholders invest directly in new infrastructure so as to be able to guide investments towards activities that better serve their interests.
- Financing through full-cost pricing: An increase in user fees finances new infrastructure.
- Financing by the developers and/or the landowners: The initial investment is paid by the developers, who expect to recover it by selling the real estate at a higher price.



An example finance structure, where taxes are used to finance community projects

Overview

Collective action issues arise routinely in water catchment projects where diverse stakeholders benefit from and bear the costs of risk reduction. Using storm water run-off and associated flooding as an example, the following questions arise:

- Why do stakeholders value particular projects—or their outcomes—and how is this value reflected in decisions on whether to collaborate in finance?
- How should storm-water run-off control be better financed?
- How can the cost of flooding be reduced?
- How can the cost of water services be reduced?
- How should stakeholders be incentivised to contribute more to the building of storm-water management infrastructures?
- What governance structures are appropriate to provide stability to projects so finance is attracted?

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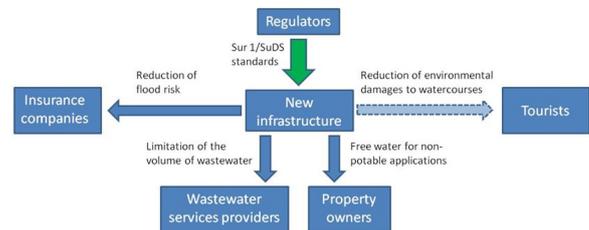
The series is made possible through a generous award from the Three Guineas Trust supporting both the research described and public outreach and engagement.

The societal aim of projects related to control of surface water run-off is to avoid, reduce and delay the discharge of rainfall run-off to watercourses and public sewers. Sustainable Drainage Systems or SuDS potentially allow the reduction of surface-water flooding, improve water quality and enhance the amenity and biodiversity value of the environment, using techniques such as infiltration and retention. The implementation of SuDS might provide any or all the following benefits:

- Reduction of the risk of insurance companies paying compensation and the need for less technical provisions
- Limitation of the volume of waste water to be treated by sewerage service providers (either private or public)
- Source of free storm water for non-potable applications such as gardening, car-washing, toilet-flushing or washing clothes
- Reinforcement of the attractiveness of the properties (green premium)
- Preservation of the watercourses from pollution and other environmental damage

The actors in a catchment area may have several drivers for valuing a project to reduce risk:

- Statutory obligation. A project may discharge a duty of service
- Personal concern. An actor may “care” about some feature of the catchment area, and wish to contribute to its protection or enhancement
- Service benefit. A project may give an actor a direct benefit through the services provided by that project
- Asset value. A project may increase the financial value of an asset owned or managed



Potential gains by actors in a catchment area, through which values might arise.

A distinction must then be drawn between an actor valuing a feature of a catchment area (such as control of surface water run-off) in an abstract sense, and valuing it in the sense of being willing to bear the costs of preserving or enhancing that feature.

Governance

As described in the summary, a variety of finance models are available for such collective action issues. They differ in whether the costs are borne through debt, equity or grants; how the project and associated services are governed; and who bears the investment/transaction costs and receives the investment benefits. Three alternative governance structures were examined and found feasible for the finance models:

- Centralised governance and project delivery through a bespoke body (e.g. a catchment water authority) that carries out the projects
- Centralised project coordination and assistance through a bespoke body (e.g. a catchment water advisory board) that assists actors to coordinate projects
- Confederation of Actors (e.g. a public-private sector catchment water laboratory) that collectively drive projects, including their finance

The result is three modes of governance and five finance structures through which catchment scale projects can be carried out.

The Cambridge Centre for Climate Change Mitigation Research (4CMR) studies the interconnected economic, energy and environmental policies at the heart of climate change policy.

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