

Anticipated outputs and products:

- Policy and legislative briefing notes to be distributed to policy makers and government planners
- Integrated research reports. Contents will include impacts of catchment management strategies, suggestions for possible compensation mechanisms, and policy recommendations
- GIS databases and maps
- Dissemination materials such as posters and pamphlets for distribution in schools and colleges to inform people of the wider impacts of their land use decisions.
- A project website and articles in the popular press
- Journal papers for dissemination of the project results to the wider scientific community.

Project team

The project team consists of a number of national and international researchers and practitioners with extensive knowledge and experience of forest and water resources management

Organisation	Team members	Background and role	Email
Centre for Ecology and Hydrology Wallingford, UK	Caroline Sullivan	Environmental + resource economics. Water policy + management	csu@ceh.ac.uk
	Nick Jackson	Agroforestry and forest hydrology. CEH Team Leader.	naj@ceh.ac.uk
	Anna Maria Giacomello	Forest economics	amgi@ceh.ac.uk
	Tim Fediw Dermot O'Regan	Environmental economics GIS specialist	tsf@ceh.ac.uk dpo@ceh.ac.uk
Government Forestry Department Grenada	Gordon Paterson	Senior forestry officer. Watershed management.	fnpd@caribsurf.com
	Alan Joseph	Chief forestry officer	fnpd@caribsurf.com
Centre for Land Use and Water Resources Research, Newcastle University, UK	Ian Calder	CAMP Project Manager	i.r.calder@ncl.ac.uk
	Caspar Hewett	Hydrologist. Integrated systems modelling	c.j.m.hewett@ncl.ac.uk
	Rob Hope	Sustainable livelihoods specialist	robert.hope@ncl.ac.uk

This publication is an output from a project funded by the UK Department for International Development (DFID) for the benefit of developing countries. The views expressed are not necessarily those of DFID.



For more information about the project please contact:

Gordon Paterson:

Upland Watershed Management Unit, Forestry Department, Government of Grenada, Queens Park, St Georges, Grenada
T: +1473 440 2934 F: +1473 440 6197

Nick Jackson:

Centre for Ecology and Hydrology, Wallingford, UK.
T: +44 1491 692336 F: +44 1491 692424

Managing Watersheds for a Better Future

Improved catchment management methodologies to achieve poverty alleviation through better access to water

A project funded by the Forestry Research Programme of the UK Department for International Development (Project Number R7937)



Changes in land use and management are felt across whole catchments, because they alter water availability to upstream and downstream users. Alternative land use by stakeholders at one set of locations impacts the water utilisation, economic productivity and livelihood strategies of other groups. Thus, land use policies must account for hydrological impacts on the whole catchment and for the resultant economic trade offs among stakeholder groups.



Background to the project:

An integrated approach to natural resource management is now generally accepted, especially in relation to the management of forests and water. Forest-based activities form an important part of the livelihoods of many people of Grenada.

- Stretching from the coastal mangroves to the central slopes, these forests provide timber and non-timber forest products, as well as the benefits to local communities of ecotourism and recreation.
- Numerous small-holdings occur within the forest, often along the streams and rivers, and fisheries close to the mangroves provide additional opportunities to generate incomes.
- There is a significant overlap in livelihoods; for example, people employed in the towns will often own land on which they farm, while also participating in coastal fishing.
- The participatory process employed to develop Grenada's new Forest Policy allowed forest values to be determined and ranked according to their importance, and showed that the most important values were environmental services, including water supplies for domestic use and other activities such as tourism, landscape and biodiversity, and agricultural support systems including soil and water conservation.
- The new policy calls for an integrated approach to watershed management, by conserving all ground and surface water resources; and reducing depletion, pollution and sedimentation. In addition, in all watershed areas, minimising soil erosion and the prevention of deforestation are important objectives.
- In this project, one of the objectives is to investigate the benefits of different approaches to natural resource management. Unchecked exploitation of natural resources at a local scale may often impact on those at wider scales, particularly in the case of water. It is therefore important that the approach taken to natural resource management takes sufficient account of socio-economically differentiated impacts on livelihoods at local scales, where the livelihoods concerned are those of the poorest in society.
- The work in Grenada forms part of a larger project (Catchment Management and Poverty) which aims to compare and contrast differing approaches to land and water management within catchments in Grenada, South Africa, and in Tanzania.
- Grenada provides a suitable field site for testing the methodology being developed in the South African part of the CAMP project. Being at a very different scale, it provides a test of the generic applicability of the project outputs. The problems of natural resource management in Grenada differ from those in South Africa, both in nature and in scale, but they are real and growing problems, which may increasingly impact on the well-being of local communities. Through its participation in the project, the Grenada Forestry Department is contributing to the development of a better understanding of these issues worldwide.

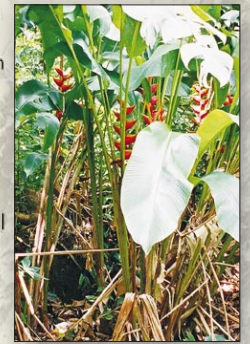


Project objectives:

- Test methodologies developed in the South African part of the project in the context of the smaller and differing catchments in Grenada.
- Identify appropriate policy instruments which will improve the livelihoods of poor people, while protecting the resource base, e.g. the "ecological reserve" flow in rivers.
- Develop policy and legislative briefing notes for government and sectoral agencies responsible for water/forest resource management in Grenada.

Project activities:

- Case study catchments have been identified (Concord River, and Annandale) known to be associated with poverty and/or equity-related issues affected by natural resource constraints.
- The linkages between organisations involved in water/forest/poverty policy have been mapped.
- Key policy issues relating to whole catchment management have been identified:
 - Water quantity: Water is currently stored for use in cisterns and storage tanks, as well as behind several dams. Some form of revenue from the tourist sector (such as a voluntary levy) could compensate the community of water users (e.g. providing finance for extra storage facilities inland).
 - Water quality: Control cultivation immediately adjacent to the rivers and streams, particularly in the upper reaches of the catchment. Current practices lead to degradation of water quality through soil erosion and the leaching and runoff of pesticides, which affect downstream water users.
 - Land use zoning: Use of GIS and the identification of water user groups might allow the project as a demonstration to show how land use zoning might be applied to other areas in Grenada.
- Biophysical and socio-economic data for catchments will be collated
- Information and methodological needs of decision makers relating to land use management (involving forest-based activities) will be identified.
- Combine catchment-scale hydrological and economic modelling with household-level studies to determine impacts of alternative policy instruments relating to forestry and water allocation



- Evaluation of trade-offs in productivity among economic activities resulting from changes in water quantity and quality in upstream and downstream regions, dependent on changes in land use and management across a catchment and within stakeholder groups.
- Identify trial policy instruments for poverty alleviation, compensation, and water allocation mechanisms, aiming to compensate stakeholders for changes in livelihoods resulting from land-use change.