

Who pays for water? A case study of action learning in the islands of the Caribbean

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Introduction

Knowledge management in the islands of the Caribbean is invariably a complex process, partly as a result of geographical complexity. There are 14 sovereign states, five overseas territories of the UK, two overseas *départements* of France, two self-governing units of the Netherlands, one territory of the USA, and the US-associated Commonwealth of Puerto Rico (Brown 2007), resulting in high institutional, cultural and linguistic diversity. Yet many global projects select the Caribbean as one of their project 'countries'. This was the case for the global project co-ordinated by the International Institute for Environment and Development (IIED) under the title 'Developing markets for watershed protection services and improved livelihoods' of which the Caribbean 'Who pays for water?' project formed part. This challenges the implementing agency, in this case the Caribbean Natural Resources Institute (CANARI), to find effective ways to give the Caribbean component a truly regional flavour without compromising the rigour and depth of the research.

For 'Who pays for water', two English-speaking countries (Jamaica and Saint Lucia) were selected as the main research sites, with three others participating actively in the project's action learning processes (Grenada, Saint Vincent and the Grenadines, Trinidad and Tobago). While the five countries have differences (e.g. in terms of size, biodiversity, ethnicity), they also share many commonalities in terms of a history and culture built on the violent and early elimination of indigenous societies, the forced importation of slave labour and the blending of traditions originating from various continents (Brown 2007).

Project overview

The 'Who pays for water? Preparing for the use of market-based mechanisms to improve the contribution of watershed services to livelihoods in the Caribbean' project was implemented by CANARI between 2004 and 2006. The project focused on project sites and case studies in five Caribbean islands (Jamaica, Saint Lucia, Grenada, Trinidad and Tobago and Saint Vincent and the Grenadines) while seeking to draw lessons of wider regional interest. The characteristics of the six case study sites are described in summary in Table 1. The case studies of the two main project sites (Pantin 2005, Pantin 2006), which included the most extensive economic valuation of the goods and services provided by the respective watersheds, were conducted by staff from the Sustainable Economic Development Unit of the University of the West Indies, St Augustine campus, Trinidad. The remaining case

study analyses were conducted by CANARI staff and Associates (John 2006, Leotaud 2006 and Lum Lock 2006).

The Caribbean project focused primarily on strengthening the capacity of regional and national institutions to assess the potential of economic instruments (specifically payments for watershed services) to improve the quality and delivery of watershed services and local livelihoods.

‘Who pays for water?’ was the Caribbean component of a global project ‘Developing markets for watershed protection services and improved livelihoods.’ The global project was implemented by the International Institute for Environment and Development (IIED) with financial support from the UK Department for International Development (DFID). The global project included activities in India, Indonesia, South Africa, China and Bolivia in addition to the Caribbean. The purpose of the global project was to increase understanding of the potential role of market mechanisms in promoting the provision of watershed services for improving livelihoods in developing countries.

How action learning was interpreted in and adapted to the Caribbean context

Action learning is a means of development, intellectual, emotional and physical, that requires a group of subjects, through responsible involvement in some real, complex and stressful problem, to achieve intended change sufficient to improve observable behaviour (Revans, 1979; Koo, 1999). It is similar to learning-by-doing (IFAL 2007) but distinguished by the degree to which a process of learning is designed and organised (for example, excluding the everyday actions and learning of an animal or child). It also differs from experiential learning, which can apply to an individual alone, by the degree to which reflection is supported by a group of colleagues (McGill and Beaty, 2001) often referred to as action learning set. Action learning requires both existing knowledge (i.e. from book learning or course work) and appropriate group questioning or reflection while trying to apply that knowledge to solve a real problem (Raelin, 1997). It is a broad developmental approach that can involve a wide array of participatory processes and tools to which entire publications series have been devoted (for example, Participatory Learning and Action published by the IIED).

Table 1: A summary of the case study sites (Source: McIntosh 2007)

<i>Project site</i>	<i>Buff Bay/Pen car watershed, Jamaica</i>	<i>Talvern Watershed, Saint Lucia</i>	<i>Dunn's River watershed, Ocho Rios, Jamaica¹</i>	<i>Speyside watershed, Tobago²</i>	<i>Fondes Amandes Community Reforestation Project, Trinidad</i>	<i>Island of St Vincent³</i>
<i>Population</i>	Approximately 24,000 people in a predominantly rural area	Rural community comprising 315 households (2005)	Main town in watershed is Ocho Rios, with population of approximately 20,000 (2005) ⁴	Speyside is a small coastal village of approximately 1,000 persons (2000)	37 families of informal settlers, making a total of about 160 residents (2005)	106,000
<i>Topography and drainage</i>	Very steep slopes	Variable although slopes are not excessively steep	Very steep slopes in upper watershed, dissected by gullies.	Steep slopes in upper and mid watershed. Drained by one small river system.	Steep slopes of 30-40 degrees on the ridgeline and about 45 degrees closer to the ravines.	Extremely rugged terrain, with slopes up to 30 degrees
<i>infall and surface water</i>	High rainfall	Mean annual rainfall approximately 2,380 mm,	Annual rainfall ranges from 1,243-1,676 mm p.a.	Tobago annual rainfall is 2,500 mm ⁶	Trinidad has an average annual rainfall of 2,110 mm	Rainfall ranges from 7,000 - 1,700 mm p.a.
<i>Use of watershed services</i>	Surface water is the main source of potable water in Jamaica. Also agriculture	Talvern watershed accounts for approximately 40-50% of the water supplied to the capital of Castries for its potable water supply	Tourism, one hydroelectric plant and extraction for potable water supply	Tourism and extraction for potable water supply	Extraction for potable water supply	Domestic and other water, generation of hydroelectric power

While all these project countries adopted an action learning approach, every country involved a different set of actors, each with their own context-specific knowledge about watershed management, and each with their own set of questions or reflections. For example, in Bolivia (and also India and South Africa) questioning was directed primarily towards testing incentive mechanisms between upstream and downstream watershed users that would improve services (e.g. Asquith and Vargas, 2007). In Indonesia, the main area of reflection was on the process of interactive negotiation and payment that would clarify the role of water resource managers in the context of decentralisation (Munawir and Vermeulen 2007). In the Caribbean questioning was primarily about how to develop a group of change agents – through mutual exposure to the potential and limitations of market mechanisms as a tool for watershed

management (McIntosh 2007). Strong emphasis was therefore placed throughout the project on both the process of action learning and the adaptive management of the project, as well as on the findings of the various activities. The Caribbean project also had to overcome the unique challenge of implementing the project in and sharing information between five different countries, with distinct and differing institutional structures, and geographically spanning the island chain from Jamaica in the north to Trinidad and Tobago in the south.

The Caribbean action learning process included:

- a 25-person multi-stakeholder regional Action Learning Group (ALG), with representatives from all the project countries, plus at least one IIED or CANARI representative who took part in meetings of the global project steering group. The ALG met at six-monthly intervals, rotating between the project countries;
- two national multi-stakeholder learning groups in the main project countries, Jamaica and Saint Lucia, which met as needed to review project findings or adapt the project approach;
- three sectoral action learning meetings, with participation from ALG members and additional representatives of the three main sectors upon which these meetings were based (water, tourism and agriculture), especially those with potential to act as buyers and/or sellers of watershed services;
- a study visit to Costa Rica to examine institutional arrangements for markets for environmental services – which involved a subset of the regional ALG;
- training workshops for ALG and national learning group members on economic valuation; and land use and hydrology assessment and participatory resource mapping;
- analysis by CANARI of a range of case studies of incipient or potential payment for watershed services (PWS) schemes that were then shared with ALG and national learning group members (John 2006; Leotaud 2006; Lum Lock and Geoghegan 2006).

The primary objective of the action learning approach was to build a community of change agents prepared to adapt and shape new watershed market initiatives and disseminate learning from the project in their countries and sectors. The regional ALG also served as a project steering committee, helping to adapt the design of individual project components to overcome challenges (e.g. the passage of Hurricane Ivan and the unavailability of anticipated data), respond to new project findings (e.g. the limited potential of tourism certification schemes as the basis for payment mechanisms), identify new research priorities that emerged from regional and national ALG discussions and case study analyses (e.g. analysis of the impact of agricultural policy incentives on watershed practice) and identify new project case studies (e.g. a fledgling payment for watershed services scheme in Saint Vincent).



Figures 1 and 2: Stakeholders share experiences on designing field watershed assessments

The initial membership of the ALG comprised mainly representatives of government forestry departments, water resource management agencies, and environmental planning and management agencies, plus a couple of representatives from academia and non-governmental organisations (NGOs). The sectoral meetings highlighted the value of the different perspectives of and contributions from other sectors. As a result, expertise in tourism, land use planning, the private sector and public utilities were added to the team, either for the ALG itself or for activities such as the study visit.



Figure 3: The Community Liaison Officer for the Integrated Forest Management and Development Programme (IFMDP) of the Government of St. Vincent & the Grenadines, Junior Cottle (far left), shares information on the issues facing Forest User Groups in St. Vincent in a panel discussion with representatives from the national water and hydroelectric companies and the Head of the IFMDP.

All action learning activities were conducted in an informal setting, designed to facilitate experiential learning and stimulate participation from all stakeholders. This facilitated open dialogue between members, whose opportunities to interact with other sectors, either within their own countries or the wider region, are usually limited and confined to formal meetings. Meetings were rotated between participating islands. This allowed field trips to various case study sites over the duration of the project. Panel discussions, incorporating rich exchanges between ALG members and local stakeholders from CBOs, NGOs, the private sector and other government agencies, also became a strong feature of the action learning process.



Figure 4: Local forest users in St. Vincent interact with members of the regional ALG on a field trip to review watershed management issues

How the project contributed to knowledge sharing about economic instruments for watershed management

Diagnostic studies of the status of incentive regimes were conducted in all the project countries except St Vincent and the Grenadines prior to the inception of the project (Bass 2002, Geoghegan 2002, Krishnarayan 2002a and 2002b). These informed the initial design of the project, which was subsequently refined by knowledge sharing between ALG members at the regional and national level. Both the conceptual framework and the selection of sites and case studies for the research relied heavily on the collective knowledge of ALG members of and the richness of the exchanges about:

- the level of national or local concern about the degradation of watersheds and watershed services and/or the increasing costs of watershed management and water supply;
- whether the country had or was in the process of privatising water supply or introducing metering for water;
- the potential to build on existing ‘experiments’ or incentive schemes that had the dual objective of improving watershed services and contributing to livelihoods;

- the availability of relevant hydrological and economic data: for example, a lot of relevant data had been collected on the Buff Bay/Pencar watershed under the Trees for Tomorrow project funded by the Canadian International Development Agency (CIDA) and the Government of Jamaica;
- the ability to build on existing relationships between watershed managers (formal or informal) and the beneficiaries of watershed services;
- the willingness of the agencies with formal responsibility for watershed management (usually the Forestry Department) to collaborate in the project;
- the potential to leverage additional resources provided by externally-funded projects (e.g. Trees for Tomorrow and Ridge to Reef Watershed project in Jamaica and poverty reduction/structural adjustment funds in Saint Lucia);
- the existence of economic actors who were clear beneficiaries of watershed services but perceived not to be paying the full costs (e.g. tourism, water and agriculture sectors).

Members of the regional and national ALGs also played a critical role in assisting with identifying and gathering data and information. They were able to draw on their existing networks of contacts in the countries and to advise on what data and information was available and to advise on the use of proxy data where needed.

Members of the ALG were also able to catalyse knowledge sharing with other key stakeholders in their countries. For example, some of the ALG members also serve on Jamaica's National Integrated Watershed Management Council (NIWMC), a Cabinet-appointed multi-sectoral and multi-stakeholder advisory and coordinating body for watershed policy and management. Key findings of the economic valuation case study in Jamaica were therefore presented to the NIWMC to inform its strategic planning process. Other members were able to share information within their sectors; for example, the Chair of Trinidad and Tobago's Regulated Industries Commission shared the project findings with other regulators at a regional meeting.

The five project countries share many common watershed management issues but proved to have differing capacity and diverse policy, legal and institutional frameworks. This added to cross-learning between countries but also compounded the complexity of regional analysis and conclusions. For example, some of the institutional models being tried in Jamaica, which initially seemed of interest to the other countries, were determined to be less appropriate for a different geographic scale or political systems with weaker local governance. Specifically, while ALG members initially saw Jamaica's NIWMC as a potential model for integrated watershed management in their own countries, further analysis of the NIWMC structure and capacity, combined with the study tour of institutional arrangements for payments for watershed services (PWS) in Costa Rica, significantly refined their perception of what would be most effective in their national contexts in terms of institutions, capacity building, and incentive or payment mechanisms. The Costa Rica study tour took place near the end of the project but was the first time that many ALG members could fully conceptualise how PWS schemes work in practice.

The ALGs at the national level in Jamaica and Saint Lucia proved to be a useful mechanism for bringing together different and often differing stakeholder perspectives and refining the characterisation of the watershed management challenges and consequently the potential or otherwise for market-based solutions. For example, in Saint Lucia it rapidly became clear that a key stakeholder and potential buyer of services, the Water and Sewerage Company (WASCo), remained unconvinced of the impact of the community-based Water Catchment Group's activities on the water quantity and quality. In Jamaica, a member of the Coffee Board rapidly disabused the local ALG of its perception that Blue Mountain coffee growers would not shift to shade grown coffee because there were insufficient economic incentives. Instead, he indicated that there is already an adequate premium attached to shade grown coffee but clear cutting continues because it is the only identified way of preventing American leaf spot fungus. Nevertheless, the Jamaican group was able to conclude that there are significant land use management practices that could be implemented by coffee growers to reduce soil erosion and chemical contamination of the watercourses.

Adaptive learning in the face of challenges and emerging issues was a feature of the project implementation at regional, national and project management level. For example, in both main pilot sites some of the preconditions for a market-based scheme proved to be absent (e.g. identification of a willing buyer and pre-conditions for conditionality such as the availability of data to demonstrate effectiveness of interventions, systematic monitoring and evaluation). Similarly, the initial scoping of the potential of tourism certification schemes to stimulate or promote market-based mechanisms concluded that the potential was limited within the project time frame. However, these findings were then usefully applied in the design and selection of subsequent research activities such as the two tourism sector case studies (Leotaud 2006) and the St Vincent case study on how payments from public utilities are contributing to watershed rehabilitation and alternative livelihoods for former marijuana growers (John 2006).

Key lessons

The process of action learning identified a number of key constraints to the implementation of PWS in Caribbean Small Island Developing States (SIDS):

- a fragmented policy and institutional framework in which independently-developed and often conflicting laws and incentives from different sectors militate against an integrated approach to watershed management;
- informal land occupancy and/or lack of tenure security for key groups within the upper watershed, which complicates any formal contractual arrangements;
- a policy environment anchored more in concepts of social justice than market efficiency;
- subsidised water pricing, particularly for certain economic sectors such as agriculture, and a resistance from both politicians and consumers to full cost pricing;
- scarcity of willing downstream buyers on a scale that matched the extent of upstream remedial action required;

- as in other small countries with small and micro-watersheds, high transaction costs relative to the small scale of the watersheds and the value of the services secured;
- data gaps and, in many cases, insufficient human capacity within national institutions to identify critical problems for watershed services; design desirable land use interventions and quantify their hydrological impacts; and conduct economic analyses to determine the potential of payment schemes to address the problems;

These constraints hindered the introduction and testing of payment schemes at any of the proposed testing sites. However, the analyses contributed significantly to an improved regional understanding of the prerequisites for selecting PWS sites with prospects of success for both the services and livelihoods. They also provided a greater understanding of the alternatives, including pointers as to what constitutes effective incentive and community-based watershed management regimes that can contribute to the enhancement of watershed services and livelihoods. In the long term, this is likely to prove as useful to policy makers as pilot tests of PWS that might not have been replicable in other islands or on a larger scale.

Key lessons learned from the action learning process include:

- PWS cannot substitute for effective land use planning or poverty reduction strategies, particularly in restricted geographic areas. In many Caribbean SIDS, there is no comprehensive or up-to-date land use plan and legislation is often conflicting and/or unenforced. Development for housing or tourism is a major and contributor to watershed degradation, yet incentive schemes designed to secure watershed services are targeted mainly at small scale farmers. The potential of these schemes to benefit the poor is also limited by the fact that most require proof of ownership or legal tenure;
- an effective integrated institutional structure for watershed management must have a legal basis for power, clear authority, and the ability to devolve power and authority to well funded and technically competent local watershed institutions. An effective institutional process must assure the flow of information up and down;
- the tools and methods which underpin PWS, such as the valuation of watershed services, hydrological assessments, the design of appropriate land use interventions and participatory resource mapping, can be useful in the broader context of determining what is the most effective approach to watershed management in a specific context.
- the water, tourism and agricultural sectors offer the greatest potential to become 'buyers' for enhanced watershed services in the Caribbean. But in most instances they consider themselves over-taxed or contributing adequately already. Progress towards PWS would need to be underpinned by valuation of sectoral contributions to and benefits from watershed services

and an assessment of the efficacy and equity of existing tax regimes. Scope exists to enhance the contribution of such sectors primarily by:

- involving them in integrated watershed planning;
 - increasing their linkages with and support for community-based managers;
 - developing sectoral policies that reflect the importance of watershed services (as is the case with the new agricultural incentives regime in Saint Lucia);
 - developing appropriate and attractive incentives; and
 - removing perverse incentives or subsidies (e.g. those that encourage the use of pesticides)..
- direct benefits are not the only motivation for buyers. For example, many of the incentives and rewards identified in the case of Fondes Amandes, Trinidad came not from direct beneficiaries but from organisations and agencies with no direct stake in the protection of the watershed. Similarly, in Jamaica the tobacco company, Carreras, funded reforestation projects under its corporate social responsibility programme not because it was a direct beneficiary of the watershed services. In Saint Lucia, some of the funding for the Talvern Water Catchment Group (TWCG) was secured under a Stabex programme designed to alleviate poverty following the decline in banana cultivation

The project concluded that PWS must be considered just as one potential tool in the watershed management toolbox and not as a panacea for the failures of other approaches. The scope for PWS in Caribbean SIDS is likely to remain limited to sites where the cost of the remedial action becomes affordable to the buyers, for example watersheds serving major urban centres or tourist resorts where concern over the loss of watershed services is high and there are enough people willing to pay . However, lessons from this examination of the role of PWS could usefully be incorporated in reshaping and re-testing existing local management initiatives, incentive regimes and the enabling institutional framework.

The value of the interaction between CANARI and IIED, and between the Caribbean project and the other global projects

Action learning was not restricted to the Caribbean alone. It also took place at the international level through four meetings involving the entire IIED project team, external advisors and project leaders from all the countries. Additionally, IIED staff attended ALG meetings and acted as a channel for knowledge sharing between the global and regional projects. IIED also coordinated a study visit to Costa Rica to examine the institutional arrangements for markets for environmental services there. Two representatives from each of the project countries participated and the process included considerable sharing among participants as well as with local stakeholders in Costa Rica. IIED also assisted with the planning of the study visit of the Caribbean ALG to Costa Rica. While there are few obvious points of comparison between the Caribbean project countries, with their small and micro-watersheds and more

centralised forms of government, and the other much larger countries, these exchanges were useful in terms of:

- exposing Caribbean staff to contexts in which the pre-requisites for PWS actually existed (e.g. in South Africa where watershed problems are acute, data abundant and tenurial arrangements secure)
- validating and/or comparing approaches (e.g. the selection of test sites for PWS);
- providing a broader global context to the conceptual frameworks adopted in the Caribbean (e.g. developing thinking about pre-requisites for PWS);
- updating the Caribbean project team on the latest thinking on watershed management and PWS (e.g. definition of criteria by which PWS might be distinguished from other approaches) ;
- deriving some common lessons on the application of PWS at local levels.

Conclusions

Prospects for pro-poor PWS in the Caribbean

While the project did not succeed in testing economic instruments as originally anticipated, it contributed to a much wider understanding of both the potential for PWS and ways in which existing alternatives, such as incentives, could be improved and adapted.

With hindsight, ‘Who pays for water?’ may have been ahead of its time in the Caribbean. One of the underlying assumptions of the global project was that PWS was gaining momentum worldwide but more research was needed to ensure it was implemented in a way that benefited the poor. Yet in 2003 water privatisation in the Caribbean, where it was taking place at all, was proceeding more slowly than anticipated and the concepts of ecosystem services and markets for these services had barely entered the political discourse. This has changed to some extent, possibly as a result of the publication of the Millennium Assessment reports, the increasingly gloomy outlook for small island developing states under the latest scenarios from the International Panel on Climate Change, and the growing emphasis placed on carbon markets by the multinationals in the region. There is now a growing awareness that development decision making should include valuation of the full range of services provided by watersheds and that this is becoming urgent as changing patterns of rainfall reduce the supply of water even in the islands where it has historically been plentiful.

CANARI and its project partners therefore need to continue to share and disseminate the lessons learned to date and to engage in research on the market instruments that are most beneficial to poor people living within and around the region’s watersheds.

Lessons learned on knowledge sharing

CANARI has over 25 years experience of researching, promoting and facilitating participatory processes which provide for the equitable inclusion of stakeholders in the decision-making about the natural resources critical to development and

livelihoods. This includes meetings, workshops and other mechanisms (such as participatory mapping) for bringing together actors with disparate interests and a wide range of educational backgrounds, skills, knowledge and experience to address an issue of common interest. In a sense therefore it has been ‘action learning’ since its inception, so the transition to a project ALG seemed like a natural progression, which may explain why no attempt made at the start of the project to formally define ‘action learning’.

ALG members and the participants in the sectoral meetings, as well as those consulted and involved at the level of the local case studies, all found the action learning process a valuable one for exchange of knowledge between countries, between sectors, and between potential buyers and sellers of watershed services. They also noted in the evaluations at the end of the sectoral meeting and the final ALG that the project had also facilitated the development or reinforcement of relationships between formal managers, informal managers and beneficiaries of watershed services, including opportunities for both traditional and scientific knowledge to contribute to a more widespread valuing of the range of services that watersheds provide. Some direct and immediate application of knowledge gained by ALG members was evident. For example, one member was able to utilise the findings to inform the design of a proposed PES scheme in Saint Lucia and another used it to refine the approach used in the IMFDP in St. Vincent. The appearance of PES in recent policy documents (for example the Trinidad & Tobago Forest Policy which is currently being drafted) may suggest some contribution of the ALG process to knowledge at national levels.

Nevertheless, at the final regional ALG meeting, there was consensus that the action learning process could have been further enhanced by:

- incorporating a wider cross-sectoral perspective at the project design stage;
- inclusion of updates by ALG members at each ALG meeting on policy, institutional and other changes in their countries and sectors;
- more systematic identification of opportunities for ALG members to disseminate project learning in their countries and sectors;
- inclusion in the group of someone working in the area of poverty reduction and a relatively senior person from the Ministry of Finance;
- more regular project updates and other communications between ALG meetings.

These recommendations are being incorporated into the design of subsequent action learning processes being facilitated by CANARI. The ALG format is being used for CANARI’s Forests and Livelihoods programme which was launched in June 2007, and which builds both on the findings and the process of ‘Who pays for water?’ This new programme currently encompasses two regional projects, one under the Food and Agriculture Organisation of the United Nations (FAO) National Forest Programme Facility and the other under the European Commission’s Programme on Tropical Forests and other Forests in Developing Countries.

The composition of the ALG for this programme reflects a better balance between government and non-governmental and private sector stakeholders, and between

forest management and social development practitioners. Consensus has been built at an early stage on the roles and responsibilities of ALG members and of the project coordinators. It has also been decided that a communication framework should be designed at an early stage of the project to ensure more effective and systematic knowledge and information sharing between the project coordinators and ALG members and more effective and regular communication with the wider target audience.

Consideration is currently being given to the most appropriate participatory method of monitoring and evaluating the effectiveness and impacts of the action learning process with a view to providing clear lessons on designing and implementing action learning processes in the Caribbean.

The action learning approach is also being applied in a CANARI-facilitated research and capacity building project designed to establish what conservation NGOs in the region need in terms of an enabling environment and internal capacity to enhance their sustainability and effectiveness. One of the project hypotheses is that NGO capacity building is often donor-driven and rarely effectively leverages existing capacities, instead bringing in short-term external facilitation, often of a culturally inappropriate kind. The project will therefore focus strongly on cross-learning between the participating NGOs (including CANARI), including a project action learning group, case studies, field visits and study exchanges).

References

- Asquith, N. and M.T. Vargas (2007) Fair deals for watershed services in Bolivia. *Natural Resources Issues* No. 7. International Institute for Environment and Development, London, UK. Available at: <http://www.iied.org/pubs/pdf/full/13536IIED.pdf> [Cited September 2007]
- Bass, S. and T. Geoghegan (2002) *Incentives for watershed management in Jamaica: results of a brief diagnostic*. CANARI Technical Report No. 314, CANARI, Laventille.
- Brown, N, T. Geoghegan and Y. Renard (2007) *A situation analysis for the wider Caribbean*, IUCN: Gland, 52pp
http://www.iucn.org/programme/files/IUCN_SA_carrib_en.pdf
- IFAL (2007) Action learning in brief. International Foundation for Action Learning, Lancaster, UK. Available at: <http://www.ifal.org.uk/brief.html> [Cited September 2007]
- Geoghegan, T (2002) *Incentives for watershed management in St. Lucia: results of a brief diagnostic*. CANARI Technical Report No. 317: CANARI, Laventille
- John, Lyndon (2006) 'From growing ganja to planting trees: Stimulating legal livelihoods and watershed management in Saint Vincent through payments from public utilities.' *Who Pays for Water Project Document* No. 4. CANARI, Laventille.

- Krishnarayan, Vijay (2002a) 'Incentives for watershed management in Grenada: results of a brief diagnostic.' *CANARI Technical Report* No. 315, CANARI, Laventille
- Krishnarayan, Vijay and Dennis Pantin (2002b) 'Incentives for watershed management in Trinidad: results of a brief diagnostic.' *CANARI Technical Report* No. 316, CANARI, Laventille
- John, L. (2006) 'From growing ganja to planting trees: Stimulating legal livelihoods and watershed management in Saint Vincent through payments from public utilities.' *Who Pays for Water Project Document* No. 4. CANARI, Laventille, Trinidad.
- Koo, L. (1999) 'Learning action learning.' *Journal of Workplace Learning* 11(3): 89-94.
- Leotaud, N. (2006) 'Linking tourism to watersheds and people: a preliminary analysis of the potential of the tourism sector to contribute to payments for watershed services in Dunn's River, Ocho Rios, Jamaica and Speyside, Tobago.' *Who Pays for Water Project Document* No. 3, CANARI, Laventille, Trinidad.
- Lum Lock, A. and T. Geoghegan (2006) 'Rewarding community efforts to protect watersheds: Case study of Fondes Amandes, St. Ann's, Trinidad and Tobago.' *Who Pays for Water Project Document* No. 12, CANARI, Laventille, Trinidad.
- McGill, I and Beaty, L. (2001) *Action learning: a guide for professional, management and educational development*. Kogan Page, London, UK.
- McIntosh, S. and N. Leotaud (2007). 'Fair deals for watershed services in the Caribbean.' *Natural Resources Issues* No. 8. International Institute for Environment and Development, London, UK. Available at: <http://www.iied.org/pubs/pdf/full/13541IIED.pdf> [Cited September 2007]
- Munawir and S. Vermeulen (2007) 'Fair deals for watershed services in Indonesia.' *Natural Resources Issues* No.9. International Institute for Environment and Development, London, UK. Available at: <http://www.iied.org/pubs/pdf/full/13539IIED.pdf> [Cited September 2007]
- Pantin, D and V. Reid (2005) 'Economic Valuation Study: action learning project on incentives for the Buff Bay/Pencar Watershed.' *Who Pays for Water Project Document* No.2, CANARI Laventille.
- Pantin D, V. Reid and N. Maurice (2006) 'Valuation of the contribution of the Talvern Water Catchment Group, St Lucia to Watershed Management.' *Who Pays for Water Project Document* No. 8, CANARI, Laventille.
- Raelin, J. (1997) 'Action learning and action science: are they different?' *Organizational dynamics* 26 (1): 21-34.
- Revans, R. (1979) 'The nature of action learning.' *Management Education and Development* 10: 3-23.

A wider range of Caribbean project documents can be downloaded from <http://www.canari.org/alg.htm> and from the global project at www.iied.org/pubs/

Abstract

This paper documents a case study of knowledge management and sharing in the Caribbean. The case study documents an action learning project on payments for watershed services (PWS) and their potential to enhance rural livelihoods, which is more fully described in the final project report (McIntosh and Leotaud 2007). The paper considers how action learning contributed to knowledge sharing about economic instruments for watershed management and their potential to contribute to improved rural livelihoods. It documents the approach taken to action learning in a region comprising many small islands with differing institutions. It also examines the value of the partnership between a southern and a northern non-governmental organisation (respectively the Caribbean Natural Resources Institute and the International Institute for Environment and Development) and compares the Caribbean process with those in the other project countries. Finally, it identifies ways in which the action learning process could be further enhanced and adapted to the region, and how these are being incorporated into a new action learning programme on Forests and Livelihoods.

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¹ Environmental Solutions Ltd. 2003. Dunn's River Watershed Baseline Environmental Assessment. Environmental Foundation of Jamaica. Kingston

² http://www.procaribe.org/networks/clawrenet/reports/z_tt/tmp221.htm accessed on 22/01/07

³ <http://www.answers.com/topic/saint-vincent-and-the-grenadines> accessed on 22/01/07 and Williams, A.N. 2003. St. Vincent & the Grenadines: Country experience in land issues. Land Tenure Centre, University of Wisconsin-Madison. Under Subcontract to Development Alternatives, Inc. Financed by U.S. Agency for International Development, BASIS IQC LAG-I-00-98-0026-0 accessed at <http://www.basis.wisc.edu/live/St.%20Vincent.pdf> on 22/01/07

⁴ <http://jamaica-guide.info/accommodations/a.to.z.hotels/sandals.dunn.s.river.golf.resort.and.spa/nearby/> accessed on 22/01/07

⁶ http://en.wikipedia.org/wiki/Geography_of_Trinidad_and_Tobago accessed on 22/01/07