1 Background

The Regional Action Learning Group (ALG) on Markets for Watershed Services and Improved Livelihoods was established in April 2004 to analyse and disseminate learning from the project *Who Pays for Water: preparing for the use of market-based mechanisms to improve the contribution of watershed services to livelihoods in the Caribbean* (WPFW) which began in February 2004. The ALG comprises individuals from key national and regional agencies and organisations who have been selected because of their position and potential to serve as “change agents”. It is envisaged that these individuals will play a key role in sharing learning on the project with their national institutions. A list of participants in this fourth ALG meeting is attached at Appendix 1. The meeting agenda is attached at Appendix 2.

The project focuses on two main project countries, Jamaica and Saint Lucia, and two ancillary countries, Trinidad & Tobago and Grenada. St Vincent & the Grenadines was added to the project in mid-2005, based on the identification of an interesting incentive-based model for watershed management and alternative livelihoods, which has been documented in a case study, which will shortly be available from CANARI’s website.

2 Summary of presentations and discussions

2.1 Welcome and introductions (Sarah McIntosh)

Sarah McIntosh welcomed participants by noting that this was the penultimate ALG before the project closed at the end of June 2006. The focus would therefore be on deriving lessons learned from the project to date and consideration of next steps both for the remainder of the project and, more importantly, for the longer term. She therefore encouraged all participants to note on the cards provided the lessons learned and next steps of greatest relevance and importance to them, so that a comprehensive discussion could take place in the final session of the meeting.

The agenda was reviewed and accepted. The traditional field trip had been omitted on this occasion both because Kingston was deemed to be the most convenient location for the panel discussion with the National Integrated Watershed Management Committee (NIWMC) and because the agenda had to accommodate sessions from the 3rd ALG which Hurricane Emily had cut short by a day.

2.2 Recap of outcomes of third ALG meeting (Sarah McIntosh)

This highly interactive session comprised a combination of a slide presentation (see Appendix 3) recapping highlights of the 3rd ALG which would not be captured elsewhere on the agenda and participants’ perspectives on the most important topics covered and suggestions for next steps. Key points to emerge were:

2.2.1 ALG composition
The ALG concept should be given life beyond the end of the project, with representation on an organisational basis but with an attempt to secure continuity of individual representatives and an emphasis on securing people with capacity to influence policy and decision-making.

The value of getting representation on the ALG of someone from a Ministry of Finance was reiterated. While there was broad agreement on this, participants noted how difficult it had been in the national context to secure such participation. It has also been found that one individual does not necessarily transmit project learning throughout the Ministry. It was also unclear how valuable a representative from one country might be in the context of another. It was therefore agreed that a regional conference of finance officials might be more effective in creating a cadre of champions within Finance Ministries throughout region (see next step 8.1 for fuller description).

2.2.2 Feedback on circumstances where payments for watershed services (PWS) make sense:
- Ongoing need to increase appreciation of and build capacity for participatory approaches at the national level in Grenada;
- Need to focus on disseminating information on projects where PWS actually working.

2.2.3 Feedback on Tourism sector
- Potential exists for tourism sector to act as broker/catalyst/host to facilitate increased linkages between stakeholders and discussion of priorities and potential actions. This approach was used in White River Watershed, Jamaica (suggested as a possible case study for CANARI to document).
- The potential to intervene via tourism certification schemes seems limited as they are mainly adopted as marketing tools. Blue Flag has more potential than Green Globe.
- Potential for a powerful and relatively environmentally-aware tourism stakeholder, such as Sandals, to act as champion of downstream/upstream linkages.
- Continue to explore synergies with Caribbean Alliance for Sustainable Tourism (CAST), Association of Caribbean States (ACS) and Travel Foundation.

2.2.4 Feedback on Economic Valuation Studies
- Such studies validate what stakeholders instinctively know but do not have data to back up and/or could not articulate. Good potential as communication tool with national planners/Ministry of Finance.

2.2.5 Feedback on field trip and Integrated Forest Management and Development Programme (IFMDP) case study
- The Saint Vincent Forestry Department is not unique in having capacity problems. The role of a forester has changed significantly since the major USAID and CIDA forest programmes of the 1980s and new needs have emerged such as resource mobilisation techniques, proposal writing, project management, participatory planning and management.
- Potential sources of funding for capacity building might be the International Conventions; Caribbean Development Bank (potential to access funding for Caribbean Development Fund of CARICOM); carbon trading/Clean Development Mechanism (where some progress was noted in Jamaica).
• Review needed of tertiary programmes relating to forest and watershed management to assess whether meeting current needs. Consortium of SIDS universities is addressing this issue.

2.3 Presentation and analysis of diagnostic study updates (Nicole Leotaud)

It had been agreed at the 3rd ALG that the 2002 diagnostic studies would be updated before the 4th ALG. Only Jamaica was able to complete this process prior to the meeting, so the other updates, which are attached at Appendix 4, do not reflect the input of the ALG members of that country who were not present at the meeting.

2.3.1 Jamaica main changes
- Improved understanding of and dialogue with the coffee sector (growers, coffee Board) which eliminated some misconceptions about the reasons for not growing shade coffee. Linkages also evolving between JCDT and the coffee stakeholders through the FAO National Forest Programme Facility.
- Improved understanding of existing incentives regimes and barriers to uptake.
- Increased appreciation of the need for financial incentives to retain Local Forest Management Committee (LFMC) involvement (e.g. demonstration farm).
- Improved understanding of the value of watershed services as result of the valuation study.
- More dialogue between stakeholders and particularly between government and civil society (catalysed by project).
- Enhanced National Water Commission (NWC) understanding of and buy-in to project objectives. The change in attitude has been catalysed in part by the economic losses arising from the impact of physical damage.
- Local Watershed Management Committees (LWMCs) and Local Forest Management Committees now enshrined in policy and legislation.
- More people are aware of the availability of seedlings from Forestry Department.

Feedback on the main changes included the following points:
- Nationally, increased devolution of power, e.g. NEPA allowing user fees to go to NGOs managing Marine Protected Areas (MPAs).
- Incentives should vary according to the differing needs of the group and may not necessarily be monetary.
- Raising of community expectations can be dangerous, so there is a need to manage expectations and to transition groups away from dependency on donor or government support. There is a need to build community capacity to undertake projects rather than just giving funds and it is preferable to support groups and initiatives that are already underway.
- LWMC activity hindered by lack of funds since conclusion of Ridge to Reef (R2R) project. R2R produced documents on the process of establishing LWMCs which may be of interest.
- LFMCs see themselves as local managers of the watershed with the potential for income generation through timber harvesting and reforestation activities. Although have no legal status, this project has increased their visibility.
- Poor/flood-damaged roads are a critical constraint to LFMCs and watershed management generally.

2.3.2 Grenada main changes
• The need to respond to the devastation caused by Hurricane Ivan is driving national decision-making. The Agency for Reconstruction and Development (ARD) was created to co-ordinate post-Ivan project development and implementation. Although much new funding was made available, it was channelled primarily through NGOs, which further stretched limited civil society capacity.
• Ivan has created an increased awareness of forests and watersheds.
• As a result of the earlier participatory development of the Grenada Forest Policy, there is an increased level of community participation in project development. Public enquiries about the management action to be taken by Forestry Department (FD) have also increased.
• FD is talking to National Water and Sewerage Authority (NAWASA) regarding incentives to reduce the increased siltation of catchments.
• FD has initiated a project with the Agency for Rural Transformation (ART) for Après Toute community, one of the poorest in the island, which will involve reforestation, check damming, stream bank planting and other watershed protection activities.

2.3.3 Trinidad and Tobago main changes
• Land prices have risen and there is pressure for land conversion to housing. Both squatting and quarrying have increased.
• A 10-year National Watershed Reforestation Project (NWRP) has been established, using community-based NGO ‘contactors’ to implement. This has raised the awareness of watershed issues at the level of the political directorate which has led to an improved policy climate. Public awareness has also increased and there has been a reduced incidence of forest fires.
• The Water Resources Policy was approved by Cabinet in 2005.
• The 2000 Environmental Management Act made provision for Environmentally Sensitive Species and Environmentally Sensitive Areas and some have now been declared.
• 1200 farmers registered for an agricultural incentive programme, based mainly on reduced taxes and duty on vehicles and equipment, together with the provision of free seedlings. The programme needs refinement, both in terms of its objectives and its implementation (e.g. screening of farmers, choice of species).

2.3.4 St. Lucia
• There has been a reduction in watershed degradation due to the decline in the banana sector (with a concomitant negative impact on livelihoods). This is partially offset by increasing urban activity leading to solid waste pollution and siltation from road cutting.
• Improvements to the water supply infrastructure are planned for the north, with the 2007 Cricket World Cup the main driver.
• In the south, a demonstration site using rainwater harvesting will be established under the GEF funded- Mainstreaming Adaptation to Climate Change (MACC) project.
• The Water Resources Agency (WRA) will be established by April 2006. A new Water and Sewerage Commission will be constituted, to be supported by WRA. Private Sector Participation (PSP) will be promoted under the new arrangements.
• Increases in water tariffs have been mooted but are unlikely before the next election. Willingness to pay is tied to seeing improved services.
• The development of the new Water Policy has generated significant awareness of water and watershed issues island wide
• The UN Food and Agriculture Organisation (FAO) is contributing to the establishment of a water resources information system.
• Some additional information exists on watershed valuation, and additional work will be done under MACC.
• There are a number of regional or national projects underway or about to be launched which have elements of watershed protection management, including:
  o Integrated Watershed and Coastal Area Management Project (IWCAM) with focus on valuation and remediation of the Mabouya Valley (see 8.3.1. for more detail of overall project);
  o Preventing Land Degradation in Small Island Ecosystems in the Caribbean (see 8.3.2. for more details);
  o Water provision to communities funded by the Basic Needs Trust Fund and the Poverty Reduction Fund;
  o EuropeGAP, designed to change cultivation practices;
  o EU-funded support to Natural Resources Programme.
• A new agricultural incentive scheme has been designed. Current incentives include provision of seedlings to farmers; duty exemptions on agricultural equipment; duty concessions to hotels for tanks and other equipment.

2.3.5 St. Vincent and the Grenadines (SVG)
No SVG baseline diagnostic study was done but the Forestry Department (FD) representative updated the meeting on developments since the last ALG.
• The goal is for Forest User Groups (FUGs) to become independent of the FD once the IFMDP finishes. FUGs have started to derive revenue from some non-timber forest products (NTFPs), e.g. production of charcoal, broomsticks. Mauby production is planned with small grant support from UNDP GEF and Institute of Environment and Development (IIED). Other ideas include bottled spring water and tea bag project in Gregg, but the group currently lacks adequate capacity.
• Synergies are being fostered with other agencies, e.g. Social Investment Fund, Centre for Enterprise Development.

In the subsequent discussion, it was noted that:
• Although registered, FUGs have yet to develop a business mind set.
• For many, marijuana trading is based on bartering, with the ability to make major profits being confined to a small number of people.
• Forest users in St. Vincent include users from other countries in the region (e.g. Saint Lucians, Grenadians, Trinidadians).

2.3.6 Summary of changes and reasons
The facilitator noted that the main changes could be summarized in terms of increased knowledge; more linkages between stakeholders and greater use of participatory processes in natural resource management; shifts in national economic and development priorities; changes in land use.

Key drivers of change include natural disasters and the concomitant raised awareness both of the services provided by watersheds and the current degree of degradation. Also of significance were the changes in the national and regional economy, principally externally driven, e.g. decline in banana industry, increase in oil prices. These in turn had led to changes in external donor funding (e.g. post-Ivan hurricane relief, Stabex funding).
It was noted that monitoring and evaluation needed to be more effectively factored into project development and that it would be interesting to evaluate why changes that were anticipated at the start of the WPFW project had not materialized.

3 NIWMC

3.1 Panel Discussion with NIWMC Representatives (Chair: Sarah McIntosh)

Panellists
Jacqueline da Costa, Chair, Advisor to the Cabinet
Vivian Blake, National Environment and Planning Agency (NEPA), Secretary to NIWMC
William Masterton, Director, Masterton Ltd, private sector representative on NIWMC
Marilyn Headley, Conservator of Forests, Forestry Department
Donna Blake, Director of Natural Resources, Ministry of Land and the Environment
Keates Hall and Guy Sands, The Forest Conservancy.

The panel was asked to address the following questions, together with any other points they felt would be relevant to colleagues from other islands who are evaluating the best institutional structure for their own context.

- What was the impetus for the NIWMC coming into being?
- What are the membership, structure and TOR of the NIWMC?
- Under what legal mandate does it operate?
- How does it determine its priorities and work plan?
- What role does it play in co-ordinating watershed management initiatives?
- What role does it play in influencing policy?
- What resources does it have (financial and human)?

The NIWMC evolved from earlier initiatives to bring together watershed stakeholders. The Council, which meets monthly, is multi-sectoral with 16 permanent representatives from government, donor agencies, private sector and civil society organisations. It has a number of subcommittees, some of which are very active and some of which are almost dormant.

The establishment of the Council in 2001 was approved by Cabinet but it has no legal locus standi. While NIWMC members are still weighing up the pros and cons of being legally established, ALG members thought this was a critical step if it was to wield real power and influence. Panellists characterized its present function as primarily one of facilitating the exchange of information and of building a cadre of watershed champions within the individual agencies. There was some debate as to whether the NIWMC is more than the sum of its parts and the panellists responded that it stands united on certain issues but separate on others as dictated by their individual organisational objectives.

The Council has no direct funding and has not yet developed a clear sense of strategic direction in terms of implementing initiatives, in spite of holding a couple of retreats. Although a report is being prepared for Cabinet summarizing members’ recommendations regarding goals, the challenge still remains as to how it should raise funding and establish the necessary staffing to become fully effective. Since it is not a legal entity, funding of activities has to be through members’ individual fundraising efforts.

One example of an initiative which will support the NIWMC’s objectives is the new Tropical Forest Conservation Fund, an arrangement under a Debt for Nature Swap with
the USA which was signed in September 2004 committing US$15.9 million over 19 years. The Jamaica Protected Area Trust (JPAT) has been set up as the fund manager with an Oversight Committee comprising 3 permanent members (United States Government, Government of Jamaica and The Nature Conservancy) and 4 temporary members (NGO representative [currently Jamaica Institute of Environment Professionals], a private sector company, Jamaica Protected Area Network, and the Permanent Secretary in the Ministry of Land and Environment). The focus is on implementing the Forest Plan, the Biodiversity Action Plan and, to a lesser extent, the Protected Area Plan. Priority sites have been identified (Forest Reserves & terrestrial protected areas) and the first year’s work plan includes sensitization of the public and a call for proposals (short term and long term). The fund can be accessed by NGOs, scientific and academic institutions and, under exceptional circumstances, the government of Jamaica. Eligible activities include research, protection, establishment and maintenance of protected areas.

Other highlighted activities of the NIWMC and its members included The Forest Conservancy’s support to local groups to prepare grant proposals, which has not yet come to fruition due to the short timeframe for recent calls for proposal from Environmental Foundation of Jamaica (EFJ) and the UNDP Small Grants Programme.

The NIWMC’s appointment of Local Watershed Management Committees (LWMCs) has increased public awareness of watershed issues and the NIWMC is now seeking funding from the EFJ to support the LWMCs. Members are individually and collectively responsible for ensuring that relevant information from the NIWMC is disseminated to their own stakeholders. However, it was felt by some ALG participants from Jamaica that the relationship between the NIWMC and the LWMCs needs to be reviewed, as does the structure of the LWMCs. Specifically, it was suggested that the LWMCs might be more effective if they mirrored the multi-sectoral, multi-stakeholder nature of the national body.

Hazard mitigation mapping has been done. The NIWMC and its members have highlighted to politicians the need to reduce vulnerability.

Capacity building needs identified by NIWMC members included:

- environmental accounting skills and valuation of environmental services;
- resource mobilisation techniques and project management skills for the Forestry Department.

In summarizing input from the presentations and subsequent discussions, the Chair noted the following key points which had emerged:

- A large multi-sectoral group of this kind facilitates exchange of information but presents challenges in terms of determining priorities and collectively implementing programmes or projects;
- The committee has reached a stage where members perceive an urgent need for strategic planning;
- The absence of a legal structure prevents the committee from fundraising on its own account and potentially reduces its authority and influence;
- There is a need to strengthen the linkages with the LWMCs.

She also noted, in the context of the WPFW project, that the majority of new funding appears to be for conservation, with little consideration of livelihoods. Also, many of the Jamaican incentives which had been discussed relate to tax breaks which tend to exclude the poor and those without formal land tenure.
3.2 Feedback on panel discussion

In a review of Day 1 on the morning of Day 2, ALG participants noted that the NIWMC seems to play a useful role for coordination and information sharing and has potential for integrated planning. However, for the smaller countries of the region, it may be better to have a single broader council that could deal with the environment in a holistic and integrated manner with broad thematic areas, possibly handled by subcommittees, such as biodiversity, climate change and watershed management. Saint Lucia is considering this approach. The representative from Grenada noted that there are several national committees there, with areas of overlap. Size notwithstanding, the same applies in both Trinidad & Tobago and Jamaica resulting in duplication of effort and a drain on resources.

It was noted that the Jamaican NIWMC is different from other national committees that are driven by commitments to international conventions since it was nationally stimulated and addresses the national agenda. However, its structure seems to have evolved somewhat haphazardly and there is now a need for it to be more strategic, to review its membership to ensure all relevant stakeholders are included, and to initiate monitoring and evaluation of its effectiveness.

Participants concluded that key elements of an effective integrated institutional structure are a legal basis for power, clear authority, and the ability to devolve power and authority. Similarly, a key element of an effective institutional process is the flow of information up and down.

4 Update on Saint Lucia Action Learning Project (Lyndon John)

After providing an overview of the land use and watershed management issues in the Talvern water catchment (see Appendix 5 for slides), the facilitator noted the following challenges:

- The difficulty of assessing and measuring the impact of the activities of the Talvern Water Catchment Group (TWCG) on the watershed and on livelihoods in the absence of baseline data and routine analysis of water quality;
- The difficulty of assessing and measuring the impact of other activities, such as the cutting of new roads, on the watershed;
- TWCG’s lack of capacity and funding to stay active when project funding ends.

It was suggested by Saint Lucian participants that the real value of TWCG lies in its advocacy role. Also, any assessment of the effectiveness of Water Catchment Groups (WCGs) should include the social and economic impacts that would result if the programmes which support them came to an end. The original Forestry Department project in 1992 included a participatory monitoring component, using schools and community groups. Equipment was secured and initial training provided but the programme lapsed in the absence of the ongoing technical assistance from the relevant agencies (Forestry and Water Resources).

After some discussion, the following lessons were distilled:

Monitoring and evaluation

- The baseline data needed should encompass a broader geographic area than just the Talvern catchment;
- The baseline needs to include an assessment of community (and other stakeholders);
- Any project intervention should be based on a thorough root cause analysis and an assessment of the real interests and needs of the community;
• The expectations of any project intervention should be realistic in terms of the time and scale of that project;
• Since complex ecological systems are influenced by many and changing variables (e.g. changing land use, climate), it is difficult to assess the impact of a small project intervention of this kind.
• Long-term monitoring and evaluation (i.e. beyond the timeframe of a project) may be needed to assess the effectiveness of interventions.

Institutional structures and capacity
• A variety of local watershed management groups have been established throughout the region so it would be useful to carry out a comparison of their structures, objectives and processes to see if there are common lessons. In some cases, such as TWCG, the objectives at the outset seem to have been unclear and hence there is no commonly-agreed yardstick of success.
• Such groups need to be established at a level that prevents interference from politicians.
• Capacity needs to be built within the community to improve the WCGs' capacity to communicate with their members, other people in the community and the wider stakeholder group.
• Programmes initiated by government agencies need to factor in sustained technical support and a long-term relationship between government and community.

5 Update on Jamaica Action Learning Project [JALP] (Nicole Leotaud)
The facilitator presented an update on the status of the JALP since the last ALG (see Appendix 6 for slides), noting particularly the presentation to the NIWMC of the Valuation Study of the Buff Bay/Pencar Watershed carried out by Dennis Pantin and the completion of the study by Sharon Wright of three incentive programmes:
• Private Planting Programme (PPP)
• Approved Farmer Status (AFS)
• Remission of Property Tax (RPT)

The study concluded that
• there is a need to increase awareness of existing incentive programmes;
• the PPP should consider supporting land clearing and maintenance;
• the AFS income tax incentive is not effective with small farmers because they don’t pay tax;
• the RPT is only attractive to large landowners

Local participants clarified that although full conditionality is lacking, there is follow up and monitoring and evaluation, e.g.
• Forest officers check the performance of existing seedlings before delivering additional seedlings;
• Under the AFP, Rural Agricultural Development Agency (RADA) officers do an assessment every 5 years on the trees planted.

The following points were made during the ensuing discussion:
• There appears to be a lack of political will to implement the RPT, probably because of the potential loss of tax revenue. This is evident from the difficulties land owners have had in actually securing remission of land taxes.
• Consideration should be given to having land tax payments go into the Tropical Forest Fund
Further updates on the JALP included an outline of how the Buff Bay LWMC plans to use the small grant from IIED of £1000:

- Development of a schedule of meetings of LFMCs;
- Plan for joint LFMCs meeting in March 06;
- Development of a training workshop;
- Plans for community forums to build awareness.

The possibility of the NIWMC providing support to the LFMCs is also being explored, along with a review of whether they should become LWMCs and/or how the two groupings should relate to one another.

The point was once again made that the NIWMC needs to communicate more effectively with the community-level stakeholders and that its role should include linking policy makers with community level activities.

6 Update on Tourism Sector Studies (Nicole Leotaud)

The facilitator presented an update on the progress since the last ALG of the two tourism studies (Dunn's River, Jamaica and Speyside, Tobago) (see Appendix 7 for slides). Both case studies relate to watersheds that are not significantly degraded and where linkages between upper watershed managers and downstream tourism interests are relatively weak so there is considerable potential for a proactive joint approach to preventing watershed degradation and generating sustainable livelihood activities for the upper watershed managers.

6.1 Dunn's River

Dunn's River presents a very complex institutional landscape and relationships between stakeholders still need some clarification and facilitation of new linkages, which may need to be the focus of the remainder of the project rather than the valuation. Although participation in the first consultation had been good overall, representation from the tourism sector was weak which implied a need for a revised mobilisation strategy. The second consultation was due to take place that week.

Key points emerging from the discussion of this study included:

- The existence in Jamaica of several land management agencies yet none which clearly has ownership of watershed management. Hills United Development Organisation (HUDO) is the most active local group in the upper watershed. However, the Urban Development Corporation (UDC) wields strong political influence and plays a lead role in Dunn’s River through its subsidiary St Ann Development Corporation (SADCO). UDC should be the leader in rallying community mobilisation.
- The St. Ann’s Parish Development Plan should be reviewed and factored into the discussions.
- The cruise ship industry needs to be factored in as a major tourism stakeholder.
- This project might usefully make linkages with the White River Project which would also be an interesting case study.

Overall, participants thought this project offered tremendous scope for future study and analysis and the development of projects which link tourism stakeholders (and possibly Jamaica Promotions (investment arm of the Jamaican government) and upper watershed managers. What is learned about institutional relationships might usefully serve to inform the management of other waterfall sites.
6.2 **Speyside, Tobago**
Speyside also offered an interesting case study, with participants noting that the proposed valuation and data collection (e.g. livelihood data) by Dennis Pantin was a clear next step. It was also suggested that more emphasis needs to be placed on the value of the dive sites and their vulnerability to poor watershed management practices.

6.3 **Next steps and other potential tourism case studies/projects**
It was suggested that CANARI might develop a “code of conduct” for sound watershed management for the benefit of the tourism sector, which could be linked in with the “ethical tourism” movement. For example, it might cover what constitutes ‘participation’, valuing and acknowledging the benefits received from sound watershed stewardship.

CANARI should also continue to explore the potential of certification schemes and examine how the incentives provided under tourism policies in the project countries currently or potentially impact on watershed management. Tourism policies should also be analysed to identify points of intervention.

It was suggested that similar case studies/fostering of linkages might usefully be conducted in
- Grenada; Anondale Falls
- St. Lucia: Choc watershed-Sandals project
- Jamaica: inland tourism, e.g. LFMC Buff Bay project

7 **Update on Training (Nicole Leotaud)**

7.1 **Valuation training (Justin Ram)**
A 3-day training workshop on the valuation methodology used by SEDU was held in November 2005 in Speyside, Tobago. Nineteen watershed managers from government and civil society in Grenada, St Vincent, Jamaica, Saint Lucia, and Trinidad & Tobago participated.

The purpose of training was not to turn the participants into environmental economists but to develop participants’:
- awareness of the importance and value of environmental economics;
- ability to develop Terms of Reference (TOR) for a valuation consultancy;
- understanding and ability to comment on a valuation TOR or report;
- ability to collect field data for valuation.

7.2 **Institutional arrangements study visit to Costa Rica (Sarah McIntosh)**
It was proposed that instead of a traditional training workshop, the training would consists of a 5-day study visit to Costa Rica for about 12 people. This would take place in March after the February global project study visit to Costa Rica, in which Nicole Leotaud would participate and lay the groundwork for the March visit.

The objectives of the study would be to:
- Get an overview of some of Costa Rica’s well-established payments for watershed services and their institutional arrangements;
- Analyse which Costa Rican case studies offered potential for learning and/or replication in the insular Caribbean context;
• Provide input to proposed project publications such as sectoral papers (e.g. forestry, agriculture, tourism, water, physical planning, finance, community/social development, civil society) and guidelines on institutional arrangements
• Motivate potential champions, who may not currently be ALG members.

It was agreed that CANARI would develop criteria/guidelines for participation and email them to all ALG members who will submit their nominations for the best candidates from the region. The goal will be to put together a multi-sectoral team.

8 Lessons learned and next steps (Sarah McIntosh)
Following a presentation by Duncan MacQueen on progress and lessons learned from the global project (see Appendix 8 for slides), it was noted that the Caribbean project differed from most other project sites in that it had not focused primarily on catalysing incentive schemes. In the Caribbean, the focus had been on the action learning process, the catalysing and reinforcing of linkages and relationships, the exploration of the complexities of actual and potential institutional arrangements, and the implications of different types of payment and incentive schemes on livelihoods. This learning could provide the basis for the design of regionally-appropriate innovative watershed management approaches, including but not confined to PWS schemes.

It was also evident that each country site had adopted different screening criteria in determining the potential for implementing PWS and it would be useful to see what lessons could be derived from a comparison of the respective approaches. Except in South Africa, the absence of reliable hydrological and/or socio-economic data had been a common factor, so a key area for consideration is the identification of the key data that can stimulate or facilitate decision-making. There is also a need to build consensus on indicators for monitoring the success of PWS schemes.

The WPFW project timeframe was unlikely to be sufficient to fully evaluate the effectiveness either of the Caribbean processes or the pilot PWS schemes in other countries. Consideration is therefore being given to a follow-up project with two threads emerging at the global level as potential next steps
• Further work on incentives in countries/sites where they have been catalysed
• Exploring broad picture on innovative approaches to watershed management and the linkages to both livelihoods and disaster mitigation, including but not confined to incentives.

In the context of the Caribbean, it was suggested that research might focus on the development of a decision-making framework for watershed management which would include
• Watershed problem analysis and the identification of the core problems;
• The circumstances under which PWS are the most cost-effective and livelihood-beneficial options;
• The identification of other innovative alternatives and the circumstances when they would be more cost-effective and livelihood-beneficial

With regard to the role, potential and expectations of local watershed management groups, emphasis might usefully be placed on providing access to small grant funds to strategically catalyse processes in the communities and to building the capacity of the groups to access grant funding or corporate sponsorship and to develop sustainable revenue-generating activities.
Suggestions for next steps fell under three broad headings:

8.1 Influencing policy and practice:
- 3-4 day CANARI regional conference for senior technical staff from Ministry of Finance with stated objective of building awareness and capacity for mainstreaming environmental – and specifically watershed management - issues in financial policy and decision-making. Topics covered might include overview watershed services and PWS schemes, environmental valuation, cost-benefit analyses, EIAs.
- Updating and enhancement of the CANARI WPFW website including the creation of links to other useful sites, such as SIDSNet;
- Exploring the potential for information to be hosted on the website of the Sustainable Development Division of CARICOM;
- Dissemination of project findings at relevant conferences and using these occasions to learn about strategies in other countries;
- Repatriating relevant research to the community level and building the capacity of local organisations to advocate effectively;
- Creating linkages with UWI and ensuring that UWI is not only a repository of regional research but also an effective disseminator of research information to stakeholders at all levels, including policy-makers and the community;
- Seeking to ensure that the curricula of the regional training institutes for forestry and other relevant disciplines reflect relevant research;

8.2 Additional or new research
- Assessment of the impact of the project on the Buff Bay Pencar LFMC, including comparison with other initiatives such as Ridge to Reef;
- Exploring the potential for exchange visits between community groups in different countries to share learning;
- Assessment of extent of dissemination and uptake of project learning

8.3 Potential for linkages with other major regional projects

8.3.1 Integrating Watershed and Coastal Areas Management in the Small Island States of the Caribbean (IWCAM)
IWCAM is a 5-year US$112 million project with five major components:
  i. Project management coordination
  ii. Demonstration, capture and transfer of best practices based on demonstration sites in a number of Caribbean islands including Jamaica (East Portland); Saint Lucia (Fond D’Or) and Trinidad & Tobago (Courland & Buccoo Reef). The choice of the demonstration sites was based on hotspot mapping criteria using consultative processes.
  iii. Development of a toolbox of approaches for assessment, including the development of environmental stress indicators, designed to lead to stress reduction action.
  iv. Review and where necessary reform of the legislative, policy and institutional frameworks at the national level;
  v. Regional and national capacity building, sharing of information and networking between agencies

The Caribbean Environmental Health Institute (CEHI) is the implementing agency and will establish a Project Management Unit. Each country will establish a multisectoral and multistakeholder National Implementing Committee and a manager will be appointed to
oversee the local demonstration project. There will also be a regional steering committee, on which the head of the national committees will sit.

IWCAM presents many opportunities to link with and build on WPFW, including the possibility of continuing the ALG format through the regional steering committee.

8.3.2 Preventing Land Degradation in Small Island Ecosystems in the Caribbean. CEHI is also co-implementing with the OAS a US$400,000 sustainable land management project designed to
- build local and regional capacity to support sustainable land management;
- develop pilot demonstration activities on sustainable land management at the community level.

The countries taking part in the project include: Antigua and Barbuda, Barbados, Dominica, Grenada, Jamaica, Saint Lucia, St. Kitts and Nevis and St. Vincent and the Grenadines.

This first phase of the project will focus on the development of a major GEF grant proposal through extensive regional and national stakeholder consultations, including among communities and the preparation of national reports.

In view of the obvious synergies between WPFW and the CEHI projects, it was agreed that a meeting should be organised between CEHI and CANARI in the near future to discuss potential areas of collaboration.

9 Date of next meeting
The date and venue of the next ALG were tentatively set for the first week of June in Grenada.
Caribbean Natural Resources Institute (CANARI)

4th Meeting of the Action Learning Group

9-11 January 2006
Kingston, Jamaica

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4th Meeting of the Action Learning Group

9-11 January 2006
Kingston, Jamaica
Fourth Meeting of the Regional Action Learning Group on Markets for Watershed Services and Improved Livelihoods

10-11 January 2006
Kingston, Jamaica

Draft Agenda

Tuesday 10 January
Morning
• Welcome and introductions
• Recap of outcomes of third ALG meeting
• Analysis of updated country matrices

Afternoon
• Presentation and discussion of progress on Saint Lucia Action Learning Project
• Presentation and discussion of progress on Jamaica Action Learning Project
• Panel discussion on institutional arrangements for watershed management with the National Integrated Watershed Management Committee (NIWMC) of Jamaica

Wednesday 11 January
Morning
• Review of Day 1
• Presentation and discussion of progress on Tourism Sector studies (NL/DP)
• Review of past and upcoming training
  o Valuation
  o Institutional arrangements

Afternoon
• Update on global project progress and lessons learned
• Lessons learned in Caribbean project
• Dissemination of lessons (project communications and publications)
• Next steps within and beyond the WPFW project
Topics covered at ALG

- Overview of Caribbean project
- Overview of global project
- Tourism sector forum review and current studies
- Valuation studies and findings to date
- Water Sector study
- Field trip to Colonarie Watershed and panel discussion
- Discussion of next steps
Sessions omitted

- Updates on Jamaica and Saint Lucia ALPs
- Updating of diagnostic matrices
- Review of proposed training programmes and other capacity needs
- Review of proposed publications and regional and national dissemination strategies
Key findings and lessons learned

Global lessons re circumstances when PWS make sense

- Important downstream irrigation or agricultural water or tourism / industrial demand;
- Dry season water scarcity;
- Water use patterns that generate economic benefits;
- Presence of conflicts of interest between upstream and downstream users;
- High level of community organization with the presence of economic, social or other community based organization;
- Local interest in improving living standards;
- Open local attitudes to improving watershed management;
- History of valuing environmental services initiatives;
- Threatened upstream ecosystems.
Regional reactions to global findings:

- Many of the facilitating conditions for markets are missing in the Jamaican context;
- The regional trend is to privatize water distribution but not management and regulation which are retained as government functions for security reasons;
- Pricing from the demand side may be socially unacceptable;
- True valuation of aggregate services is difficult;
- Focus should be on innovative approaches to effective watershed management with market-based incentives (MBIs) one possible approach;
Regional reactions to global findings:

- Small islands and watersheds offer the potential to conduct pilot valuation and market studies, e.g. Speyside.
- The high level of leakage in water distribution system, (e.g. in Trinidad) influences people’s perception of the value of water and affects willingness to pay;
- Might be possible to have a market with one major monopoly buyer (e.g. state) who would then sell to a series of smaller buyers via one or more intermediaries;
Key findings and lessons learned

Tourism sector studies

- Initial findings confirm potential to
  - positively influence the management of watersheds that are not severely degraded;
  - raise awareness of the tourism sector’s dependency on good watershed management;
  - create innovative participatory structures and institutions to address watershed management issues.
Key findings and lessons learned

Economic valuation studies

- serve several important functions:
  - providing a common language between policy makers, business community and the poor themselves;
  - identifying important sources of economic value that would otherwise be under- or unappreciated in decision-making;
  - providing a justification for pilot interventions;
  - establishing an order of priority for interventions.
Discussion of valuation studies:

General

- Most regional water tariffs do not cover full cost of water production.
- Integrated national planning is needed to rationalise the objectives and incentives of different sectors, e.g. agriculture and watershed management.
- Both incentives and disincentives (e.g. taxes) can be effective in modifying behaviour.
- Difficulty of estimating the “value of a statistical life”, e.g. in the case of deaths from flooding.
Discussion of valuation studies:

Talvern

- Absence of reliable baseline data or agreed indicators of success had made it difficult to get consensus on the impact of the TWCG;

- No project definition of livelihoods has been adopted. The contribution of the TWCG would be assessed much more positively if broad definition adopted;

- Importance of involving all stakeholders from the outset and particularly those, such as WASCO, who may be expected to pay for watershed services.
Key findings and lessons learned

Field trip and IFMDP case study:

- Gap between utility companies’ perspective (desire to see evidence of impact of investment) and that of civil society (they are not investing enough given profit levels).

- Need for further refinement of institutional structures (e.g., intermediary to allocate funds; greater involvement of Forest User Groups in decision making);

- Forestry Department hampered by lack of capacity;

- Weak institutional basis and economic arguments for conversion from marijuana to alternative livelihoods.
Next steps for Caribbean WPFW

- Focus on fostering dialogue and strengthening existing incentive-type schemes;
- Nationalise ALG concept and consider what incentive needed to retain involvement of community groups;
- Develop toolbox of guidelines and case studies;
- Improve monitoring and evaluation through development of indicators of impact and collection of relevant baseline data;
Next steps

- CANARI/ALG act as clearing house for linkages/exchange of information with complementary projects (IWCAM, FAO National Forest Programme Facility);
- Assess incentives in other sectors such as agriculture and build on existing schemes;
- Identify examples of good practice at local level (e.g. Fondes Amandes).
Next steps

Saint Lucia

- Convene meeting of relevant policy and decision makers to discuss institutional arrangements that facilitate integrated planning and MBIs, possibly using the Jamaica NIWMC as a model;
- Introduce WPFW project objectives to Ministry of Agriculture directorate and policy makers.

Jamaica recommendations

- Present findings of the Buff Bay Pencar valuation study to a meeting of the NIWMC
**Actions**

- Dissemination (CANARI) and completion of diagnostic studies (country action learning partners);
- Develop indicators of socioeconomic and environmental impacts (CANARI/IIED);
- Identify examples of good practice at local level (e.g. Fondes Amandes);
- Identify additional ALG members;
- Develop Agriculture Sector TOR and identify consultant;
- Investigate Costa Rica study tour as alternative to Institutional Arrangements training;
- Identify intervention points and messages for dissemination by ALG members.
## Markets for Watershed Services and Improved Livelihoods

**Draft Matrix for Defining 2002 Baseline and Monitoring Change in Jamaica Updated August 2005**

<table>
<thead>
<tr>
<th>Conditions for introducing market-based approaches</th>
<th>Baseline (2002 diagnostics)</th>
<th>Now (July 2005)</th>
<th>Reason for change, particularly any impacts of project</th>
</tr>
</thead>
</table>
| Main watershed issues potentially benefiting from new approaches | Illegal tree cutting in critical watershed areas and riparian zones for yam sticks, fuel wood, and timber.  
Hillside farming methods, including the use of fire, that result in heavy soil erosion.  
Poor domestic sanitation practices and facilities in rural and urban areas, increasing faecal coliform and nutrient levels in upper watersheds.  
Pesticide and fertiliser run-off, particularly in relation to poor farming practices and under contamination.  
Construction of buildings and roads on steep slopes.  
River-bed sand mining. | Cutting trees to reduce shade on coffee.  
Clearing for coffee farming is the main concern.  
Issue raised at LFMC meeting last year. Plan for workshop on sanitation/waste management proposed. Issue also raised with Parish Councillor at meeting.  
Both government and private practice Confirmed. Some road failure. Active sand mining in Pencar none in Buff Bay Valley. | Fear of leaf disease from excess shade.  
Price of coffee  
Increased resources of awareness of environmental issues in the watershed at LFMC meetings.  
Limited land space in steep valleys.  
Official sanction (licences) |
| Interest and willingness of key watershed management actors to consider market-based approaches | Consensus that adoption of fully-fledged market-based approaches would be not be culturally, politically or economically appropriate at present but some scope for non- | Downstream exploitation of resources, small, limited. | Individuals and LFMC are able to amenable to incentives such as FD Private Planting Programme with contribution for maintenance. |
# Draft Matrix for Defining 2002 Baseline and Monitoring Change in Jamaica

<table>
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<tr>
<th>Conditions for introducing market-based approaches</th>
<th>Baseline (2002 diagnostics)</th>
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</tr>
</thead>
<tbody>
<tr>
<td>market and pre-market incentives.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Information on hydrological requirements for improved watershed services</td>
<td>National Water Commission (NWC) has relevant data but needs analysis and dissemination.</td>
<td>Still need analysis</td>
<td></td>
</tr>
<tr>
<td>Information on appropriate land uses to support hydrological requirements</td>
<td>National Water Commission (NWC) has relevant data but needs analysis and dissemination.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Information on economic value of watershed services and costs of maintaining them</td>
<td>No: identified in diagnostic as a key need, using a broad valuation of multiple watershed services.</td>
<td>Dennis .......... did assessment</td>
<td></td>
</tr>
<tr>
<td>Policies and legislation enabling of market-based approaches</td>
<td>• Policy change that enabled private companies rights to Crown Land for water abstraction.</td>
<td>Private company can get licences to abstract water</td>
<td></td>
</tr>
<tr>
<td>Structures to support learning about and testing market-based approaches</td>
<td>• Establishment of National Integrated Watershed Management Council (NIWMC) and its working groups • Local Forest Management Committees • Water user groups • Great River Watershed Management Committee • Ocho Rios Environmental Advisory Group • USAID-Government of Jamaica (GOJ) 5-year Ridge to Reef watershed management improvement programme.</td>
<td>Still active</td>
<td>Increased awareness through training and regular meetings.</td>
</tr>
</tbody>
</table>

|                          | | | |
|                          | Active, willing to assist process. | Still active | |
|                          | Developed Rio Grande Watershed Management Committee | | |

---
### Draft Matrix for Defining 2002 Baseline and Monitoring Change in Jamaica

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<tr>
<td>• UNDP GEF-funded IWCAM project. &lt;br&gt;• Increasing emphasis on environmental standards and certification schemes within tourism sector. &lt;br&gt;but need for more mechanisms to bring actors together for cross-project learning</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Awareness of upstream and downstream actors of requirements for protecting watershed services</td>
<td>Variable. More education and awareness identified as a priority.</td>
<td>Unchanged</td>
<td>No specific activity organised</td>
</tr>
<tr>
<td>Organization of watershed service providers and willingness to contribute to improved services</td>
<td>See figures 2 and 3 for stakeholders and institutional framework. Structure of NIWMC does not mirror landscape of the water cycle (see Figure 1) and excludes direct representation of some stakeholders such as farmers Diagnostic assumption was that the main watershed service providers that could be incentivized by market-based instruments were farmers and other private watershed actors.</td>
<td>NIWMC reflect the major institutional stakeholders.</td>
<td>This remains valid</td>
</tr>
<tr>
<td>Organization of watershed service consumers and willingness to pay for improved services</td>
<td>See Figure 2 for consumers. Willingness to pay constrained by perception of water as common</td>
<td>Constraints remain</td>
<td>NWC major abstractor of water, not sharing cost of production</td>
</tr>
</tbody>
</table>
## Draft Matrix for Defining 2002 Baseline and Monitoring Change in Jamaica

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<tbody>
<tr>
<td>services</td>
<td>property and a right; lack of understanding of full costs of watershed management.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Existence of, or tangible suggestions for, incentives for improved land use/watershed behaviour</td>
<td>Actual</td>
<td>Continue</td>
<td>Capacity of CBOs to write projects</td>
</tr>
<tr>
<td></td>
<td>Forestry Dept’s free seedling programme for farmers and landowners, regardless of income level</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Small grants from EFJ and USAID-GOJ Ridge-to-Reef project for community-based projects to improve watershed management</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Water conservation incentives built into NWC’s rate structure.</td>
<td>No</td>
<td>Farmers earn income</td>
</tr>
<tr>
<td></td>
<td>Sandals partnerships with local farmers</td>
<td>No change</td>
<td></td>
</tr>
<tr>
<td>Suggestions:</td>
<td>Tax write-offs, public recognition (e.g. EFJ Champions of the Forest Programme) or certification scheme incentives for reef –to-ridge donation programme in which hotels and other downstream users are encouraged to support watershed management activities</td>
<td>Some tax measures through FD and RADA</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Branding and marketing of agricultural, horticultural and industrial products and bottled water (e.g. Great River brands) based on</td>
<td></td>
<td>Low awareness of some aspects</td>
</tr>
<tr>
<td>Conditions for introducing market-based approaches</td>
<td>Baseline (2002 diagnostics)</td>
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</tr>
<tr>
<td>--------------------------------------------------</td>
<td>--------------------------------------------------------------------------------------------</td>
<td>-------------------------------------------------------------------------------</td>
<td>--------------------------------------------------------</td>
</tr>
<tr>
<td>agreed and applied standards.</td>
<td>Gaining traction</td>
<td>Increasing public awareness and community action.</td>
<td></td>
</tr>
<tr>
<td>Grants and tax write-offs for establishment of community mini-dams and household water storage tanks (in conjunction with standards and public education programmes).</td>
<td>Discussion at institutional level not yet at community level. Initiative did not develop into project.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Competitions to identify and reward best examples of good practices and behaviours.</td>
<td>Simplex Spinal Forest initiative as basis for</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Using EFJ Spinal Forest initiative as basis for</td>
<td>• Seeking donations for buying-up lands critical to upper watershed services;</td>
<td>FD and RADA.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Providing incentives for upper watershed land owners to move out of uneconomic agriculture and into re-afforestation and fruit trees;</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Addressing land tenure issues of upland farmers by tying security of tenure to improved practices</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Tax incentives to improve land use of larger upper watershed land owners;</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Seeking Kyoto Protocol Clean Development Mechanism funds for re-afforestation.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Conditions for introducing market-based approaches</td>
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</tr>
<tr>
<td>---------------------------------------------------</td>
<td>-----------------------------</td>
<td>-----------------</td>
<td>-----------------------------------------------</td>
</tr>
<tr>
<td>Understanding of livelihood dimensions of watershed service provision and allocation (who would stand to gain or lose from changes in land use and the creation of markets?)</td>
<td>Perception that the poor and the large number of watershed dwellers without tenure are likely to be excluded from market opportunities, and could create negative externalities to the introduction of markets based on improved land use.</td>
<td>Perception remain Mechanisms cannot be tied solely to tenure; opportunities in the form of services; transparency of process critical.</td>
<td>FD incentives (Private Planting Programme) not tied to tenure. Increase public awareness</td>
</tr>
<tr>
<td>Other constraints to the implementation of market-based approaches.</td>
<td>Financial resources. Poor water supply infrastructure. Perception that water belongs to the people of Jamaica and that GOJ has an obligation to make it available to all.</td>
<td>Rural River water (open) access River water (cost)</td>
<td>People willing to pay for domestic water (at reasonably price).</td>
</tr>
</tbody>
</table>
Objective:
To assess the potential for creating rural livelihood opportunities through markets to sustain community-based watershed protection services of the Talvan Water Catchment Group (TWCG)
About Talvan catchment

- Area: 320 ha
- Important water source to north-central communities; Babonneau, Cacoa, Forestiere
- Agricultural watershed; becoming increasingly urbanized
- 40-50% of 347.89 m.gls/yr of water produced by Hill 20 Treatment Plant is supplied by Talvan valued at approximately US$ 460,095
- Land degradation historically acute
  - Sediment, chemical and waste pollutants
- Land area mainly under private ownership; presents management constraints
- Community-based approaches to watershed management as alternative to costly acquisition
Location of the Talvan Catchment and water intake network

Hill 20 water supply sources

Government forest reserve in green shading
Water intakes represented by blue squares
<table>
<thead>
<tr>
<th>Watershed services</th>
<th>Who affects it?</th>
<th>Who is affected by it?</th>
</tr>
</thead>
</table>
| Maintenance of water quality       | Banana, root crops and animal farmers  
Homeowners  
TWCG  
Forestry Department               | Water consumers  
Water sellers                          |
| Regulation of flow                 | Banana farmers  
TWCG                               | Water consumers  
Water sellers  
Downstream communities              |
| Soil stability (landslide control) | Banana and animal farmers  
Developers  
Forestry Department                   | Downstream communities  
Farmers  
Water sellers                          |
| Erosion control                    | Banana and animal farmers  
Developers  
Forestry Department               | Downstream farmers                      |
| Biodiversity protection            | Forestry Dept                         | All St. Lucians                          |
**CLASS A** - Primary (including plantation) forest. Photo shows sharp divide between cultivated areas and the Castries Waterworks Forest Reserve at Forestiere

**CLASS B** - Abandoned cultivation / fallow lands. Dominated by regenerating vegetation and scattered tree crops; mango, breadfruit, coconut.

**CLASS C** - Mixed farming, temporary crops (bananas, vegetables) with tree crop overstorey (mango, breadfruit, coconut) along with fragments of secondary forest.

**CLASS D** - Intensive hillside cultivation; predominantly bananas and vegetable production (fish ponds are visible in the upper right corner of the photo).

**CLASS E** - Densely vegetated low-intensity agriculture. Dominated by tree crops (mango, breadfruit, coconut, others) and dense residual (secondary) forest cover.

**CLASS F** - Intensive vegetable cultivation; backyard gardens

**CLASS G** - Rural settlement
<table>
<thead>
<tr>
<th>Watershed actors</th>
<th>Negative practices</th>
<th>Positive practices</th>
<th>Who represents their interests?</th>
<th>Who/what influences their practices</th>
</tr>
</thead>
<tbody>
<tr>
<td>Banana farmers</td>
<td>Land clearing without erosion controls, pesticide use, banana sleeving disposal</td>
<td>Tree planting (by TWCG) on farms along riverbank, Participation in TWCG, Installing VIP’s, Reuse of banana sleeving</td>
<td>WIBDECO, BERU, Banana companies (TQF, SLBC) Min.AFF</td>
<td>Market demand SLDB agric. loans Land tenure TWCG Agricultural Extension Legislation re: agricultural practices (Pesticides Control Act, Agricultural Small Tenancies Act) Europe GAP certification</td>
</tr>
<tr>
<td>Animal farmers</td>
<td>Grazing near rivers, causing erosion, pollution of water supply</td>
<td></td>
<td>MAFF</td>
<td>TWCG</td>
</tr>
<tr>
<td>Talvan residents</td>
<td>Pollution of water supply (pit latrines, garbage)</td>
<td></td>
<td>TWCG</td>
<td>Land tenure Infrastructure</td>
</tr>
<tr>
<td>Developers</td>
<td>Land clearing without erosion controls, forest clearing</td>
<td></td>
<td>Government regulation</td>
<td></td>
</tr>
<tr>
<td>Owners of undeveloped land</td>
<td></td>
<td></td>
<td>Market demand for potential uses (e.g. farming, housing construction, tourism amenities) Personal and family considerations (esp. family land)</td>
<td></td>
</tr>
</tbody>
</table>
Erosion sources and sediment transport in the Talvan watershed.

(A) Damaged road culvert along Combat Road
(B) Overland erosive flow on road cut during heavy rain
(C) Sediment-laden flow upstream of Cacao Bridge during heavy rain
(D) Rapid erosive flow during heavy rain in farm drain
Talvan intake

Hill 20 Treatment Plant

Water quality after storm

Raw water to Hill 20 Treatment Plant following heavy rain. (the highly turbid Talvan catchment supply is on left and adjacent Marquis catchment supply in on the right)
| TWCG                  | Education, riverbank stabilization, River cleaning, Best practices demonstration, Technology transfer to other WCG’s national/regional Community cohesion Employment opportunity | Self Forestry Dept Small grant providers (OECS ESDU and Poverty Reduction Fund) | Forestry Dept and WRMU (tech. assistance and advocacy) Poor water supply and quality Compensation (small grants) Poverty reduction policy EU banana sector relief policy |
Talvan Water Catchment Group

Project grant support received to date: approximately EC $212,836

Riverbank Erosion Control
- planting wattles
- Geotextile fabric
- Planting grasses
- Timber trees & Tree crops
- Demonstration farm (contour drainage, multicropping)

Water Quality Control
- River Debris removal
- Ventilated Improved Pits (VIP’s) installed
- Public education
Hydrologic Assessment and Watershed Management Plan for the Talvan Water Catchment.

Major recommendations

• Install a hydrologic monitoring network for the watershed

• Continue rehabilitation measures along degraded segments of the main watercourse and within upland cultivated areas

• Assess the pollutant risk from the livestock production units and develop control measures to minimize such risk.

• Assess the pollutant risk from households, particularly those in close proximity to the main channel at Talvan and develop control measures to minimize such risk.

• Establish national raw water standards so as to set appropriate benchmarks against which effectiveness of watershed remedial measures can be assessed.

• **Build capacity within the Talvan Water Catchment Group to undertake monitoring of the watershed and to play a lead role in undertaking rehabilitation works in conjunction with land owners**
Impact of TWCG on water quality and quantity:

Given the level of land use change, particularly in terms of abandoned farming, mainly out of banana, it would be difficult to attribute any significant changes in water quality and quantity directly to the activities of the TWCG.

Particularly since the TWCG’s activities have been restricted mainly to stream bank stabilization. It is more likely that reduced farming activity would have played a more significant role in improving water quality.
VALUATION OF THE CONTRIBUTION OF THE TALVERN WATER CATCHMENT GROUP TO WATERSHED MANAGEMENT

The study set out to assess whether the Talvern Water Catchment Group (TWCG):
1. Was known by members of the Talvern farming and general community;

2. Whether Talvern community members were aware of the work of the group;

3. Whether there were behavioural changes among farmers and community members as a result of TWCG;

4. Whether or not the work of the Talvern Water Catchment Group affected the water supply.
VALUATION OF THE CONTRIBUTION OF THE TALVERN WATER CATCHMENT GROUP, ST. LUCIA TO WATERSHED MANAGEMENT

Direct impacts on the Talvern watershed were assessed in terms of:
• Water quality;
• Flow regulation;
• Soil erosion control and soil fertility/health;
• Ecosystem integrity, biodiversity, and landscape beauty.

Indirect impacts on the Talvern watershed in terms of:
Positive behaviour changes of Talvern community members whose actions impact directly or indirectly on the watershed: e.g. farmers, households in terms of waste disposal, etc.
<table>
<thead>
<tr>
<th>Item</th>
<th>Yes</th>
<th>No</th>
<th>Don't know</th>
<th>Quite a lot better</th>
<th>A lot better</th>
<th>A little bit better</th>
<th>A lot worse</th>
<th>A little bit worse</th>
<th>Worse</th>
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<tbody>
<tr>
<td>Improvement in water quality</td>
<td>41%</td>
<td>57%</td>
<td></td>
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<td>No improvement in water quality</td>
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<td>Improvement in water quantity</td>
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<td>2%</td>
<td>15%</td>
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<td>Improvement in water quantity</td>
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<td></td>
<td>3%</td>
<td>14%</td>
<td>24%</td>
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<td>No improvement in water quantity</td>
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<td></td>
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<tr>
<td>Aware of TWCG</td>
<td>88%</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Know of work of TWCG</td>
<td>82%</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Change in river use</td>
<td>28%</td>
<td></td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Aware of debris removal</td>
<td>64%</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Aware of public awareness</td>
<td>265</td>
<td></td>
<td></td>
<td></td>
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<td></td>
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<tr>
<td>Aware of employment of community members</td>
<td>36%</td>
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</tbody>
</table>
Water Quality Survey Results

Farmers
28 farmers were surveyed
61% said water quality had improved
(of that percentage only 4% said water quality had improved “quite a lot”)

32% said water quality had not improved

Community members
58 community members surveyed
59% of the respondents said that water quality had not improved
41% said that it had improved (only 1% thought that it had improved “quite a lot”)
Water Quantity Survey Results

Farmers
28 farmers were surveyed
57% said water quantity had improved
(of that percentage only 1% said water quantity had improved “quite a lot”)

36% said water quantity had not improved

Community members
58 community members surveyed
60% of the respondents said that water quantity had not improved
40% said that it had improved (only 3% thought that it had improved “quite a lot”)
Knowledge of Talvern Catchment Group Survey Results

Farmers
28 farmers were surveyed
93% knew of the TWCG
90% associated them most with riverbank stabilisation work
53% were aware of stream debris removal
28% were aware of TWCG public awareness activities
25% were aware of the group’s community member employment arrangement and efforts at demonstrating agricultural best practices

Community members
58 community members surveyed
83% knew of the TWCG
78% associated them most with riverbank stabilisation work
63% were aware of stream debris removal
25% were aware of TWCG public awareness activities
36% were aware of the group’s community member employment arrangement and efforts at demonstrating agricultural best practices
Behavioural change over past five years impacting on Talvern River
Farmers
54% indicated change of farming practices, of which 42% associated that change with TWCG
10% attributed change to other reasons including rainfall patterns or change in crops (e.g. banana to vegetables)
28% supported TWCG streambank planting activities
21% indicated positive changes including not dumping waste in river and implementing erosion control measures

Community members
69% indicated no change in use of river
28% indicated change in use of river
(these behavior changes included bathing only below the catchment or only using the river when it rains)
General Feedback of Community members and farmers

1. Community facing constant challenge of trade offs between keeping the river safe for water consumption while facing water shortages
2. Most understood the need to keep the river clear of debris and were in favour of restricting bathing to below the catchment
3. Lower awareness of TWCG activities among the youth
4. TWCG best known for its tree planting
5. Significant perception that TWCG is dormant at present
6. TWCG not perceived as good communicators of their purpose (community members not aware of who were members)
7. Of those who were aware of the TWCG, many thought it was mainly for employment
8. Most were keen to say that they adhered to the advice of TWCG
Impacts on overall watershed management in St. Lucia

• Lessons of Talvern Group experience applied to management of other watersheds in St. Lucia.

• WRMU island survey revealed strong approval for such water catchment groups

Impacts on overall watershed management in the OECS and rest of Caribbean and World in terms of lessons of Talvern Group experience applied to other management of watersheds elsewhere (e.g. St. Kitts & Nevis and St. Vincent.
<table>
<thead>
<tr>
<th>Question</th>
<th>No. of Respondents*</th>
<th>Gender</th>
<th>Age</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>M (%)</td>
<td>F (%)</td>
<td>20-29 (%)</td>
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<td>3. Area of Residence:</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Fond Assau</td>
<td>7</td>
<td>43</td>
<td>57</td>
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<tr>
<td>Talvern</td>
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<td>Other</td>
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<td>4. Occupation</td>
<td>6</td>
<td>67</td>
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<tr>
<td>Farming</td>
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<tr>
<td>Other</td>
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</tr>
<tr>
<td>5. Years of membership</td>
<td>2</td>
<td>100</td>
<td>-</td>
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<tr>
<td>0-1 year</td>
<td>5</td>
<td>20</td>
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<td>75</td>
<td>25</td>
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<tr>
<td>Over 5 years</td>
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<td>6. Group role</td>
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<td>General member</td>
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<td>7a. Paid to do work/provided materials</td>
<td>10</td>
<td>50</td>
<td>50</td>
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<tr>
<td>Yes</td>
<td>3</td>
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</tr>
<tr>
<td>No</td>
<td></td>
<td></td>
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<tr>
<td>7b. Number of occasions</td>
<td>4</td>
<td>-</td>
<td>100</td>
</tr>
<tr>
<td>Once</td>
<td>6</td>
<td>83</td>
<td>17</td>
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<tr>
<td>2-3 times</td>
<td>-</td>
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<tr>
<td>3-5 times</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>More than 5 times</td>
<td>-</td>
<td>-</td>
<td>-</td>
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<tr>
<td>8a. Other source(s) of income</td>
<td>4</td>
<td>25</td>
<td>75</td>
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<tr>
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<td>9</td>
<td>56</td>
<td>44</td>
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<tr>
<td>No</td>
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<tr>
<td>9a. Wage paid as a major income source</td>
<td>5</td>
<td>60</td>
<td>40</td>
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<tr>
<td>Yes</td>
<td>6</td>
<td>33</td>
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<tr>
<td>9b. Percentage of household income</td>
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<td>50</td>
<td>50</td>
</tr>
<tr>
<td>10-20%</td>
<td>1</td>
<td>100</td>
<td>-</td>
</tr>
<tr>
<td>20-40%</td>
<td>2</td>
<td>50</td>
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</tr>
</tbody>
</table>
Key Results of the Valuation Study of the TWCG St. Lucia Action Learning Project Meeting (25 May, 2005)

• The project's assumption based on the results of the socio-economic survey is that the TWCG is having a positive impact by influencing the Talvern community in exercising positive watershed management practices. The objectives of the incentives is to provide support to the Group directly which would enhance their ability to implement watershed management.

• The project needs to secure support from the St. Lucia partners (WASCO, WRMU, Forestry Dept.) and potential private sector partners (e.g. Bottled water companies) to provide support for providing incentives that will address capacity gaps and needs of the TWCG.

• Private sector representatives from two bottled water companies were invited to take part in the ALP meeting but were unable to attend.

• TWCG provided the ALP with a draft workplan which identified areas for capacity building.

• The meeting concluded on the selection of (1) develop a capacity building initiative for incentive based support and (2) the identification of a “hotspot” for reforestation within the Talvern watershed as the two areas to be developed for incentive based support.
Thank You
Jamaica Action Learning Project

Presentation for the Action Learning Group (ALG) Meeting

January 2006, Kingston, Jamaica
Progress

Completed research:
- Valuation study presented to NIWMC
- Study of existing incentives completed

Current actions on testing incentives:
- Learning on clean-cleared coffee
- Small grant to Buff Bay LFMC
- Potential work with NIWMC?
Valuation study

- Presentation of valuation study on Buff Bay / Pencar to NIWMC Sept 2005
- NIWMC wants recommendations for next steps:
  - Further pilot projects & research needed
  - Incentives
  - Implications for water rates
  - Links with agencies e.g. Urban Development Company (UDC)
Study to evaluate existing incentives
Buff Bay / Pencar Watershed
Jamaica
PURPOSE OF STUDY

- To assess the usefulness of the existing economic incentives as a tool for improved watershed management in Jamaica.
  - Are persons aware of the incentives?
  - Are they utilising the incentives?
  - Have they benefited from the incentives?
INCENTIVE PROGRAMMES

- **Private Planting Programme (PPP) – Forest Act (1996)**
  - Free seedlings
  - Technical advice
  - Extension services

  - Income tax relief
  - Duty concession

- **Remission of Property Tax (RPT) – Forest Act (1996)**
  - Remission of property tax if declare private land as:
    - Protected Area
    - Forest Reserve
    - Forest Management Area
STUDY METHODOLOGY

- Conducted by consultant, Sharon Wright
- Literature review
- Informal interviews with staff of FD, RADA, & Tax Administration Department
- Questionnaire survey administered to 34 persons
## PERSONS SURVEYED

<table>
<thead>
<tr>
<th></th>
<th>PPP</th>
<th>AFS</th>
<th>RPT</th>
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<tbody>
<tr>
<td>Participants</td>
<td>10</td>
<td>3</td>
<td>2*</td>
</tr>
<tr>
<td>Non-participants</td>
<td>10</td>
<td>6</td>
<td>3</td>
</tr>
</tbody>
</table>

* Do not reside in Buff Bay / Pencar
PRELIMINARY FINDINGS

- **Awareness of the incentive programmes:**
  - Majority of persons were aware of the PPP.
  - Only farmers from the Buff Bay side were aware of the AFS.
  - None of the persons surveyed were aware of the declaration process (RPT).
PRELIMINARY FINDINGS

- **Socioeconomic profile of participants in the incentive programmes:**
  - Participation in the PPP spans the spectrum of income and social groups.
  - Mainly middle and upper income groups utilized the AFS and the RPT.
  - No one in the Buff Bay/Pencar watershed participated in the RPT.
PRELIMINARY FINDINGS

- **Linkage of incentive programmes with watershed management:**
  - All participants in the incentive programmes said that their participation helped to protect/improve the watershed.
  - Most respondents (94%) felt that their participation helps to improve the volume and quality of the water supply and 25% of the respondents said their participation helps to protect the soil.
PRELIMINARY FINDINGS

Perceived benefits from participation in incentive programmes:

- Most who participated in an incentive programme said that they benefited.
- Income / financial benefits appeared to be the major perceived benefit from participating in the programmes.
- Other benefits given were education and environmental protection.
PRELIMINARY FINDINGS

- Costs of participating in incentive programmes:
  - Participants reported no significant cost or time spent in order to take advantage of the respective incentives. (small application fee for AFS)
PRELIMINARY FINDINGS

- **Satisfaction with incentive programmes:**
  - 12 (80%) of the 15 persons participating in the incentive programmes expressed satisfaction with the programme in which they participated.
  - Reasons for satisfaction given were income gained or the potential to gain income and benefits to the community.
PRELIMINARY FINDINGS

- **Problems with incentive programmes:**
  - Technical advice is insufficient.
  - Financial support for clearing the land and maintenance is critical.
PRELIMINARY FINDINGS

- **Reasons for not participating in the incentive programmes:**
  - 15 (79%) of the 19 non-participants in the incentives programmes surveyed was a lack of knowledge about the programmes or not enough information to make a decision (including a lack of clarity on eligibility requirements).
PRELIMINARY FINDINGS

- **What would encourage participation in the incentive programmes:**
  - Information, education, publicity.
  - Show potential income revenue.
  - Give seedlings & money to clear the land for planting.
PRELIMINARY FINDINGS

Recommended government initiatives for watershed management:

- Monitoring
- Education
- Assistance to plant and care for seedlings
- Extension services
- Loan facilities for farmers
- Carbon bank
Conclusions

- Need to increase awareness of existing incentive programmes
- PPP incentive needs to consider supporting land clearing & maintenance
- AFS income tax incentive not effective with small farmers because don’t pay tax
- RPT only attractive to large landowners
- Status of administration of RPT?
Testing of incentives

Current actions
Potential incentives

ALP 2005:

- Coffee farmers already have economic incentive to produce shade coffee
- Proposed focus on incentives to increase tree planting on public & private land
  - Increase seedling production in LFMC nursery
  - Expand reforestation programme
- Funding support?
Small grant to BB LFMC

- Buff Bay & Pencar LFMCs –
  - Employment in Forestry planting projects
  - Use of farms as demonstration
  - Leased land for nursery (Pencar), ecotourism (Buff Bay)

- GBP £1,000 for 1 year contract for:
  1. The holding or regular watershed meetings of the LFMC
  2. Continuing demonstration activities about improved watershed management
  3. New initiatives to improve watershed management
NIWMC

- Exploring potential support to NIWMC
Tourism sector case studies
Dunn’s River, Jamaica
&
Speyside, Tobago

Presentation for the Action Learning Group (ALG) Meeting
January 2006, Kingston, Jamaica
The tourism sector study addresses two critical needs for the region:

1. to improve management and land use practices in watersheds, and
2. to assure the sustainability of the region’s important tourism sector.

These needs are linked, since activities occurring in upper watersheds impact on the quality of tourism assets downstream. The tourism industry thus has a clear interest in supporting improved watershed management.
Objectives

- To identify ways that the tourism sector can improve its contribution towards the management of watersheds by upstream stakeholders; and
- To create or enhance linkages between downstream tourism industry stakeholders and upstream watershed management stakeholders that result in better watershed management practices at selected sites.
## Case study sites

<table>
<thead>
<tr>
<th></th>
<th><strong>Speyside</strong></th>
<th><strong>Dunn’s River</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Community</strong></td>
<td>Rural, subsistence agriculture, tourism main economy</td>
<td>Ocho Rios tourism-oriented community</td>
</tr>
<tr>
<td><strong>Tourism industry</strong></td>
<td>Small-scale niche tourism - 3 hotels, small guesthouses, restaurants</td>
<td>Large-scale mass tourism</td>
</tr>
<tr>
<td><strong>Initiatives</strong></td>
<td>National Reforestation &amp; Watershed Rehabilitation Programme</td>
<td>Hills United Development Organisation (HUDO)</td>
</tr>
</tbody>
</table>
Key watershed services

- Key watershed services:
  - Flow regulation
  - Soil stabilisation
  - Biodiversity
  - Landscape beauty
  - Water quality and quantity
  - Carbon sequestration
Speyside, Tobago – Ridge to Reef
Speyside, Tobago – Ridge to Reef
Speyside, Tobago – Ridge to Reef
Project activities

1. Scoping visit
2. First stakeholder consultation
3. Preliminary valuation study
4. Second stakeholder consultation
5. Monitoring of uptake
6. Final stakeholder consultation
Scoping visit

Criteria for selection:

- clearly identifiable impacts from upstream activities on downstream tourism assets;
- a preliminary list of downstream and upstream stakeholders;
- existing linkages and the potential for enhancement of linkages between downstream tourism operators and upstream watershed managers;
- the interest of project stakeholders; and
- the resources available to support local participation.
First stakeholder consultation

- Expand and validate the list of stakeholders identified in the initial scoping visits.
- Begin a process of stakeholder analysis to identify current roles and responsibilities.
- Map the current institutional structure.
- Identify existing and potential watershed management actions that protect watershed services and minimise negative impacts on downstream tourism assets.
Participants:

- The workshop was very successful in engaging quite a wide variety of stakeholders from government and civil society - twenty-four stakeholders participated.
- Seven students from Speyside high school also participated.
- Some key stakeholders were weak / absent (e.g. hotels, guest houses, THA Town & Country Planning, private developers).
Highlights of first Speyside consultation

- Verification of key watershed services
- Identification of key issues for watershed management in the upper, mid, lower watershed and marine environment
- Stakeholder identification and preliminary analysis
  1. What are the roles / responsibilities / activities of the stakeholders in watershed management (and are these formal or informal)
  2. What are their impacts on the watershed (positive & negative)
  3. What benefits do they derive from the watershed services (or how would be negatively impacted if watershed degraded)
Speyside consultation conclusions

- The workshop was successful in contributing towards building and enhancing linkages among stakeholders.
- Very positive support was received from partners - the NRWRP and the Speyside High School.
- Broader inclusion of the Speyside community and other key stakeholders (e.g. hotels, guest houses, THA Town & Country Planning, private developers) is needed.
- Further analysis is required to specifically focus on stakeholders’ impacts on the watershed and benefits they derive from the watershed.
Some potential areas for collaboration were highlighted. E.g.:

- Involving the THA Tourism and the Tour Guide Association in the NRWRP initiative to train Technicians as tour guides
- Accessing Travel Foundation funding for small projects (e.g. Adopt a Farmer)
- Soliciting input from THA Agriculture and farmers in developing sustainable methods of agriculture in the watershed
- Exploring the potential role that hotels can play in watershed management
Speyside consultation conclusions

- Need to identify the **core problems**. E.g.:
  - Poor coordination and collaboration among management agencies resulting in an absence of integrated planning and management of natural resources & the tourism sector
  - Weak policy and legislative framework for tourism and environmental management
  - Weak enforcement (due to limited resources & political and family pressures)
  - Inadequate data for management caused by low capacity of management agencies
  - Inadequate involvement of the local community and other stakeholders in decision-making and management processes
  - Unresolved conflicts around land tenure
  - Limited livelihood opportunities in Speyside
  - Negative political influences on processes
Speyside consultation conclusions

- This research project can be very useful in aiding the NRWRP in identifying suitable interventions to build capacity in the Speyside community, to establish linkages with other stakeholders and to strengthen stakeholder participation in the NRWRP.
Speyside next steps

- Institutional mapping
- Problem analysis (core problems)
- Further stakeholder analysis
- Preliminary valuation study
- Participatory resource mapping
Highlights of first Dunn’s River consultation

Participants:

- The workshop engaged some of the key stakeholders from government and civil society – 11 stakeholders represented 6 organisations.
- Some key stakeholders were absent or lacking (e.g. UDC, tourism sector, intermediaries).
Highlights of first Dunn’s River consultation

- Identification of key watershed services
- Stakeholder identification and preliminary analysis
- Institutional mapping
Dunn’s River key stakeholders

- **UDC** is perceived as the primary stakeholder in the watershed in terms of:
  - the power it wields (political, legislative and financial),
  - the management of land in the upper watershed,
  - the benefits it derives from watershed services (via its subsidiary SADCO managing Dunn’s River Falls).
Dunn’s River key stakeholders

- The **tourism sector** is the single driver of the economy of Ocho Rios and is therefore a key stakeholder benefiting from watershed services.

- **HUDO** is a CBO and an emerging watershed service provider. It interfaces with all organisations but some linkages with key stakeholders (e.g. UDC, TPDCo, tourism sector) are currently weak and need to be strengthened.
Dunn’s River stakeholder linkages

- There are some linkages internally within UDC, which recognises that the operation of Dunn’s River Falls attraction is dependent on maintenance of watershed services.

- These linkages need further investigation to determine if and how this influences how they manage their lands in the upper watershed.
Dunn’s River stakeholder linkages

- There are **indirect links** between the tourism sector and beneficiaries of watershed services through taxes that flow through the national government’s Consolidated Fund to support upper watershed management by government agencies (e.g. UDC, Forestry Department).

- However, **more direct linkages** may be needed (potential Tourism Enhancement Fund for development of tourism products, via intermediaries).
Dunn’s River stakeholder linkages

- There are a variety of intermediaries in the watershed, functioning in various ways – providing policy direction, funding, and technical support.
- However, none of these are currently acting to directly link beneficiaries of watershed services with supporting watershed management actions that are providing the services.
Dunn’s River stakeholder linkages

- HUDO has established links with many of the stakeholders in the watershed and can potentially be a hub to direct support from tourism beneficiaries into community participation in watershed management (facilitating a direct flow of benefits to the community).

- Institutional strengthening and capacity building for HUDO is critical if it is to play an important role in the watershed.
Dunn’s River second consultation

- Validate findings from first consultation
- Conduct problem analysis (identify core problems)
- Conduct stakeholder analysis of:
  - the stakeholders responsible for the problems (directly or indirectly) (impacting on watershed)
  - the stakeholders affected by the problems (benefiting from watershed services)
  - the stakeholders with roles or responsibilities for addressing the problems
Dunn’s River second consultation

- Clarify policy and legislative context
- Preliminary identification of potential strategies for improving upstream management practices
- Discuss the scope and focus of the preliminary valuation study
  - Identify activities
  - Identify sources of information
Key issues Dunn’s River

- Mobilisation of key stakeholders (UDC, tourism sector)
- Finding local partner (champion)
- Managing expectations of community
The future

- Potential to continue work on tourism sector in project next steps?
- Fits criteria for payments
  - Voluntary transaction
  - Well-defined environmental service
  - bought by a minimum of 1 buyer
  - from a minimum of 1 service provider
  - element of conditionality to provide the service – element of monitoring
- Role for tourism sector – “buyer”, facilitator, advocate?
Progress and lessons learned from markets for watershed services

Sarah McIntosh and Duncan Macqueen
It is a simple idea: people who look after ecosystems that benefit other people should be recognised and rewarded in some way by those other people.

In the case of watersheds ecosystems, downstream beneficiaries of wise upstream land and water use (e.g. water consumers) should dig into their pockets and pay.
Current landuses cause external costs

Alternative land uses can internalise the costs – if a payment can be made

Maintenance of existing natural habitats (reduce extensification)
Agriculture with conservation measures
Re-afforestation

Project goal

Global Goal:

- To promote the maintenance of watershed services that support local livelihoods.

Caribbean Goal:

- To optimise the direct and indirect benefits provided by watersheds to upstream communities, downstream users, and the wider society, with particular emphasis on the poor and vulnerable.
Project purpose

Global purpose:
- To increase understanding of the role of market mechanisms in promoting the provision of watershed services to improve livelihoods.

Caribbean Purpose:
- To create capacity in national and local institutions to assess the potential of economic instruments to enhance watershed protection services and improve livelihoods, and to design and employ such instruments when appropriate.
‘Markets for watershed services’ projects have been tormented by definitions and terminology (markets, payments, incentives, rewards etc). Most people now use – Payment for Environmental Service (PES) because true markets almost never exist.

PES is a mechanism by which

- service user(s) pay
- service provider(s)
- to provide a well-defined service (or land use that provides it)
- in a conditional and
- voluntary transaction
No economic incentives

Integrated conservation and development projects (ICDPs)

Certification

Land acquisition

SFM and production

Command and control

Environmental taxes and subsidies

1. Background considerations

- **Obstacles to PES**
  - Limited demand – few service users trust mechanism / focus / benefits / data to want to pay
  - Limited confidence on making PES work in practice

- **Different types of PES**
  - Area based schemes vs product based schemes (e.g. Green Globe – food from environmental farms)
  - Public schemes vs private schemes
  - Use restricting schemes vs asset building schemes

- **Baselines, leakages and permanence**
  - Payment for what people should do anyway? Benefits to people who pay nothing? Temporary change only?

2. Background consideration

- For which land use scenarios might PES work
  - Low return degrading activities (e.g. slash and burn) may have constraints far beyond simple lack of cash for changed practice (e.g. know-how, technology, credit etc)
  - High return degrading activities (e.g. Marijuana, Blue mountain coffee) may have a profitability far too high for PES to change outlook
  - Marginal degrading activities (e.g. banana, dasheen) may be open to persuasion with PES

- Who should we pay? And is it fair?
  - Those with credible site-specific claims (e.g. not the landless? not those who are doing good practice already? not those of insufficient size to affect service?)

3. Background consideration

- Site selection
  - How many watersheds are there? (e.g. 26 in Jamaica)
  - Do any face a critical level of threat from poor land use?
  - Do any threatened ones have significant concerned downstream users?
  - In those with concerned downstream users, are the concerns sufficient to generate willingness to pay?
  - In those with willingness to pay – is the payment large enough to incentivise changes in upstream land use?
  - Where the payment is large enough – are the upstream land managers organised enough to receive payment for changed practice?
  - If yes to above – is there capacity to catalyse a scheme?
## Details of sites 1

<table>
<thead>
<tr>
<th>Country</th>
<th>Watershed</th>
<th>Area</th>
<th>Problem</th>
<th>Service</th>
<th>Mechanism</th>
<th>Buyer/s</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bolivia</td>
<td>Rio Los Negros watershed, Santa Cruz Department</td>
<td>250km²</td>
<td>Changing land use reducing water quantity</td>
<td>Water quantity</td>
<td>Maintain forest cover</td>
<td>Horticultural producers in Los Negros town</td>
</tr>
<tr>
<td>India</td>
<td>Bhoj Wetlands, Madhya Pradesh State</td>
<td>361km²</td>
<td>High levels of agro-chemicals in Bhoj Wetlands and lake</td>
<td>Water quality</td>
<td>Switch to organic farming</td>
<td>Possible: Bhopal Municipal Council</td>
</tr>
<tr>
<td></td>
<td>Bhodi-Suan, Himachal Pradesh State</td>
<td>7km²</td>
<td>Soil erosion and siltation – low dry season flows</td>
<td>Water quality and quantity</td>
<td>Soil conservation and zoning</td>
<td>Inter-village mechanism</td>
</tr>
<tr>
<td></td>
<td>Kuhan, Himachal Pradesh</td>
<td>4-5 km²</td>
<td>Soil erosion and siltation of dam</td>
<td>Water quality</td>
<td>Soil conservation and zoning</td>
<td>Inter-village mechanism</td>
</tr>
<tr>
<td>Indonesia</td>
<td>Brantas, East Java Province</td>
<td>12,000 km²</td>
<td>Deforestation causing erosion and siltation of Brantas River</td>
<td>Water quality</td>
<td>Tree planting at pilot sites</td>
<td>PJT-I - government river authority</td>
</tr>
<tr>
<td></td>
<td>Cidanau, Banten Province</td>
<td>22,620 ha</td>
<td>Erosion causing high silt and inorganic chemical loads</td>
<td>Water quality</td>
<td>Tree planting at pilot sites</td>
<td>KTI government owned industrial conglomerate</td>
</tr>
<tr>
<td></td>
<td>Segara, Lombok Island</td>
<td></td>
<td>Up to 50% reduction yield of selected springs</td>
<td>Water quality</td>
<td></td>
<td>PDAM Mataram City</td>
</tr>
</tbody>
</table>
## Details of sites 2

<table>
<thead>
<tr>
<th>Country</th>
<th>Watershed</th>
<th>Area</th>
<th>Problem</th>
<th>Service</th>
<th>Mechanism</th>
<th>Buyer/s</th>
</tr>
</thead>
<tbody>
<tr>
<td>Jamaica</td>
<td>Buff Bay Pencar</td>
<td>202 km²</td>
<td>Contamination due to pesticides fertilisers and sewage</td>
<td>Water quality</td>
<td>To be determined</td>
<td>Potentially water consumers in coastal areas</td>
</tr>
<tr>
<td>St. Lucia</td>
<td>Talvan</td>
<td>320ha</td>
<td>High levels of pollution</td>
<td>Water quality</td>
<td>To be determined</td>
<td>Potentially water and sewerage company and consumers</td>
</tr>
<tr>
<td>South Africa</td>
<td>Sabie-Sand, Mpumalanga Province</td>
<td>7,361 Km²</td>
<td>Invasive alien species Soil erosion</td>
<td>Water quantity and quality</td>
<td>To be determined</td>
<td>To be determined</td>
</tr>
<tr>
<td>Selati, Limpopo Province</td>
<td>2,338 Km²</td>
<td>Reduced water quantity caused by inefficient irrigation methods and changes in landuse</td>
<td>Water quantity</td>
<td>To be determined</td>
<td>Potentially commercial farmers and mining companies at Phalaborwa</td>
<td></td>
</tr>
</tbody>
</table>
Some examples of PES established during project

<table>
<thead>
<tr>
<th>Watershed</th>
<th>Payment</th>
<th>Buyer</th>
<th>Sellers</th>
</tr>
</thead>
<tbody>
<tr>
<td>Los Negros</td>
<td>Beehives</td>
<td>Municipality Natura (NGO)</td>
<td>Agro-pastoral farmers</td>
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<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Kuhan</td>
<td>Grazing rights, Seedlings, Grass</td>
<td>Down stream village</td>
<td>Upstream village</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cidanau</td>
<td>US$17,500 for three years</td>
<td>KTI - government owned conglomerate</td>
<td>Farmers group at pilot site</td>
</tr>
<tr>
<td>Brantas</td>
<td>US$5,175 one off payment</td>
<td>PJT – government river authority</td>
<td>Farmers group at pilot site</td>
</tr>
</tbody>
</table>
Different types of lessons

1. Data required for PES
2. Payment types
3. Livelihood impacts
4. Roles of government
5. Risks and transaction costs
1. Lessons: Data required for PES

- Much complexity and uncertainty with evidence-base that should underpin credible PES (e.g. hydrology / economics)
- Different actors’ powers and perceptions push and pull the development of PES (e.g. Forest Departments beliefs that trees are best for watersheds)
- Transparency about data and assumptions is critical for PES protagonists (e.g. Bolivia)
- Important expertise is, and perhaps always will be, very thinly spread for the development of PES
- Complexity of land use, water and poverty issues is the norm – have to operate on ‘rules of thumb’ and local perceptions
2. Lessons: Payment types

- Demand for PES schemes is limited but occasionally emerges (e.g. Sandals St Lucia / Jamaica NWC Hope WS)
- Language matters - ‘incentive’ less stigma than ‘market’
- Payments are widely used, often public and tax based, not private – and rarely ‘contingent’ (i.e. rarely monitored)
- Decentralisation can offer opportunities for the development of PES but it can also confuse responsibilities for watershed management
- Transition payments may be more realistic than continuous payments (e.g. one off payments to change land use type)
- Differentiated payments within a scheme can be practically effective (to focus on critical areas) but risk facing considerable political opposition (i.e. perceived as unfair)
3. Lessons: Livelihood impacts

- As watershed services decline, inequity in their allocation increases – often hurting the poor most
- There are better ways of reducing poverty than PES
- PES may be poverty-neutral and like any tool, in the wrong hands, can do harm (e.g. further excluding landless poor)
- Location of poverty within a watershed is seldom simple
- Deal-making arenas are not easy for poor groups to enter
- Payments help but are unlikely by themselves to reduce poverty
- Indirect effects of PES (e.g. strengthening land tenure / organisation into watershed groups / raising profile of region) can have significant poverty-reduction potential
4. Lessons: roles of government

- Government’s role is at best enabling, at worst obstructive - but rarely avoidable
- Public PES have drawbacks (bureaucratic, multiple voter objectives, less flexible) but these can be overcome
- Defining and enforcing land ownership and use rights is a crucial role and needs consistent attention
- Facilitation and brokering roles can sometimes be well-played by government
- Governments have an important role to play in watershed education – creating the necessary knowledge base
- Government involvement in PES can further the cause of better governance
5. Lessons: risks and transaction costs

- PES risks rewarding environmental vandals and institutionalising a ‘victim pays principle’
- PES requires increasing trust between buyer / seller and managed risks (e.g. payments without benefit to buyer)
- Installing adaptive management lowers risk (brings everyone on board) but has high initial transaction costs
- Intermediary organisations can help to bear these transaction costs and help the poor get access to benefits
- PES and broader water management options need better integration
- Focus on the information that will crack open debate