



**ANNUAL REPORT**  
**October 2002 to September 2003**  
**And**  
**6<sup>th</sup> Semi Annual Report**  
**April 2003 to September 2003**





# Ridge to Reef Watershed Project

USAID Contract No. 532-C-00-00-00235-00

**ANNUAL REPORT  
October 2002 to September 2003  
And  
6<sup>TH</sup> SEMI ANNUAL REPORT  
April 2003 to September 2003**

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Prepared for the:

Government of Jamaica  
National Environment and Planning Agency

And the

United States Agency for International Development

Implemented by:

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## Preface

The Ridge to Reef Watershed Project (R2RW) is a five-year bilateral initiative between the Government of Jamaica's National Environment and Planning Agency (NEPA) and the Government of the United States' Agency for International Development (USAID). The Project focuses on three distinct, but interrelated activities working towards the objective of improving the management of Jamaica's watersheds. The R2RW Components are:

- Component 1 Sustainable Environmental Practices
- Component 2 Compliance and Enforcement
- Component 3 Institutional Strengthening

The Project is directly supportive of USAID's Strategic Objective 2 (SO2) – Improved quality of key natural resources in selected areas that are both environmentally and economically significant. Associates in Rural Development, Inc. (ARD) implements R2RW.

This document is intended to meet two contractual requirements of USAID. Firstly, the document is the 3<sup>rd</sup> Annual Report for the period October 2002 to September 2003. Secondly, this document is the 6<sup>th</sup> Semi-Annual Report (SAR) for R2RW covering the period April 1, 2003 to September 30, 2003. This Report provides a comprehensive overview of the progress on Project implementation under USAID Contract No. 532-C-00-00-00235-00 and reports on progress toward achieving the set of activities proposed in the R2RW Third Annual Work Plan. In addition, the Report contributes to the fulfillment of the overall R2RW Life of Project Strategy and documents progress made toward achieving the indicators of success originally presented in the R2RW Performance Monitoring Plan (PMP). Finally, this Report summarizes progress toward the agreed performance benchmarks, and presents expenditures for the period April 2003 to September 2003.

## Acronyms

AGM	Annual General Meeting
ARD	Associates in Rural Development
ASC	Administrative and Support Center
C&E	Compliance and Enforcement
CASE	College of Agriculture, Science and Education
CAWWA	Caribbean Wastewater Association
CBOs	Community-Based Organizations
CDC	Community Development Committee
CEO	Chief Executive Officer
CETF	Compliance and Enforcement Task Force
CLINs	Contract Line Item Numbers
COP	Chief of Party
CWIP II	Coastal Water Quality Improvement Project – Phase II
CWIP	Coastal Water Quality Improvement Project
DAC	Development Area Committee
EAST	Environmental Action for Sustainable Tourism
ENACT	Environmental Action Program
ENGO	Environmental Non-Governmental Organization
EWS	Environmental Wardens Services
FAWP	Fourth Annual Work Plan
FD	Forestry Department
GOJ	Government of Jamaica
GR	Great River
GRC&ETF	Great River Compliance and Enforcement Task Force
GRW	Great River Watershed
GRWMC	Great River Watershed Management Committee
ISC	Inter-Agency Steering Committee
JAMPRO	Jamaica Promotions Limited
JAS	Jamaica Agricultural Society
JCDT	Jamaica Conservation and Development Trust
JCF	Jamaica Constabulary Force
JET	Jamaica Environmental Trust
JIS	Jamaica Information Service
JNHT	Jamaica National Heritage Trust
JOAM	Jamaica Organic Agricultural Movement
JTB	Jamaica Tourist Board
JUTA	Jamaica Union of Travelers Association
KAP	Knowledge, Attitudes and Practices
LCTF	Land and Conservation Task Force
LFMC	Local Forest Management Committee
LGCWG	Local Group Co-ordination Working Group
LWMC	Local Watershed Management Committee
MBMP	Montego Bay Marine Park
MCC	Montpelier Citrus Company
MINAG	Ministry of Agriculture
MIND	Management Institute for National Development
MLE	Ministry of Land and Environment
MLGYCD	Ministry of Local Government, Youth and Community Development
MOU	Memorandum of Understanding
NEEC	National Environmental Education Committee
NEPA	National Environment and Planning Agency

NGOs	Non-Governmental Organizations
NHSJ	National History Society of Jamaica
NIWMC	National Integrated Watershed Management Council
NSWMA	National Solid Waste Management Authority
NWC	National Water Commission
ODC	Office of Development Credit
P&M	Production and Marketing
PAPAS	Participation and Public Awareness Specialist
PATF	Public Awareness Task Force
PAWG	Public Awareness Working Group
PC	Parish Council
PC&ETF	Portland Compliance and Enforcement Task Force
PCA	Pesticide Control Authority
PDC	Parish Development Committee
PHD	Public Health Department
PIC	Project Implementation Committee
PMP	Performance Monitoring Plan
PPPCD	Policy, Programs and Projects Coordination Division
R2RW	Ridge to Reef Watershed Project
RADA	Rural Agricultural Development Authority
RGW	Rio Grande Watershed
RGWMC	Rio Grande Watershed Management Committee
SAPW	Strategic Action Planning Workshop
SAR	Semi Annual Report
SBA	Small Business Association
SDC	Social Development Commission
SO2	Strategic Objective Number 2
SOW	Scope of Work
SSU	Sanitation Support Unit
STTA	Short-Term Technical Assistance
SWB	Sustainable Watersheds Branch
TAP	Targeted Appropriate Practice
TAWP	Third Annual Work Plan
TF	Task Force
TOR	Terms of Reference
TPDCo	Tourism Product Development Company
USA	United States of America
USAID	United States Agency for International Development
W&S	Water and Sanitation
WMC	Watershed Management Committee
WMS	Watershed Management Specialist
WPA	Watershed Protection Act
WRA	Water Resources Authority
WSTF	Water and Sanitation Task Force



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# 1. Introduction

This document summarizes accomplishments made during the third year of a planned 5-year Ridge to Reef Watershed Project (R2RW). R2RW gained momentum during the year as the project was fully staffed, and all things were in place for implementation. They worked together to prepare the Third Year Work Plan, and they combined their talents to achieve as many of the planned outcomes as possible.

Two significant staffing adjustments were made during the year. First, the administrative staff was unified under the direction of R2RW, and secondly, the Participation and Public Awareness Specialist (PAPAS) left the Project. The administrative staff were brought under R2RW with the closure of the 5-year Coastal Water Quality Improvement Project (CWIP) contract. The responsibilities originally held by the PAPAS were combined with a role in public relations to create a new full-time position, the Participation, Public Awareness, and Public Relations Specialist (PPAPRS). This new position was filled just at the end of the Project Year, and the new staff member's initial thinking is reflected in the Fourth Annual Work Plan (FAWP) for the Project.

A particular strength illustrated by the staff during Year 3 has been to address the complexity of watershed management through comprehensive integration of stakeholders. These include more than 10 Government of Jamaica (GOJ) agencies, many non-governmental organizations (NGOs), a host of community-based organizations (CBOs), two additional USAID-funded projects, multiple divisions within the National Environment and Planning Agency (NEPA), and a number of active and concerned private sector agencies. It is anticipated that this level of integration will continue throughout the life of R2RW and that significant Project resources will be directed toward nurturing these relationships.

The integration of these multiple partners is facilitated by R2RW via its support to coordination mechanisms that will sustain Project interventions. The principal mechanisms are Watershed Management Committees (WMCs). R2RW staff continued their work during this Year on strengthening the Great River Watershed Management Committee (GRWMC), its four issues-oriented task forces, the National Integrated Watershed Management Council (NIWMC), the Rio Grande Watershed Management Committee (RGWMC), and its four task forces to become a foundation on which to build an integrated, national network capable of watershed management.

## Principal Project Components

The focus areas of the Project did not change during the 3<sup>rd</sup> Year from those developed and presented in the original Project design. The three components are:

### *Component 1*

Through targeted organizations, sustainable environmental management practices by resource users identified and supported in the Great River Watershed (Component 1A) and in the Rio Grande Watershed (Component 1B).

### *Component 2*

Incentives for, and obstacles to, enforcement of targeted existing environmental regulations identified and solutions supported.

### *Component 3*

Capacity of Jamaican government agencies, international donors, and private sector and civil society organizations to implement effective watershed management programs enhanced.

The first two sections of this report highlighted achievements made by this project during the reporting period.

The next 4 – 6 sections of this document highlight progress on these three components, as well as the crosscutting themes that comprise the Project.

Section 7 presents key aspects of Project Management including: project operations, project management and oversight, monitoring and reporting, and staffing.

Section 8 presents an update of the performance indicators that were originally set out in the R2RW Performance Monitoring Plan (PMP).

Section 9 reports on the achievement and status of the performance benchmarks presented in the Third Annual Work Plan (TAWP).

Section 10 presents a summary of program expenditures for the year.

Appendices 1 – 24 list supporting documents that provide greater detail of activities for the readers.

### **Summary of Selected, Key Work Plan Achievements**

R2RW has made dozens of significant achievements during the Project Year. Each of these is presented and described in the text of this document. In this section, a brief review, of major achievements for the reporting period is presented.

### ***Component 1: Sustainable Environmental Practices***

#### Great River Watershed (Component 1A)

- The GRWMC continued to grow as an entity capable of addressing solutions to the difficult issues of watershed management under incrementally reducing support from R2RW
- The membership of the GRWMC was expanded to include greater representation from more communities in the watershed
- Implemented multiple grant- and otherwise-funded community-based activities in agriculture, livestock, water harvesting, wastewater disposal, and market production applying a range of environmentally friendly practices
- Water harvesting and constructed wetlands video designed and finalized in cooperation with Montego Bay Marine Park
- Completed one grant-funded activity providing improved water supply and sanitation solutions to a large all-age school in the upper watershed
- Planting of 12,200 trees in the watershed through a multi-faceted Plant-A-Tree Campaign
- Actively participated in multiple national, regional, and local shows and expositions



- Launched the Great River Green Village Program
- Launched and supported public awareness through the “River Action with the Action Boyz” public awareness community theatre program which has been highly successful and well received in communities.
- Completed water quality monitoring program in the Great River and reported of findings to the watershed community in various fora.

#### Rio Grande Watershed (Component 1B)

- 123 farmers benefited from four intensive training sessions as part of workshops and field days on various aspects of sustainable agriculture including: bio-fertilizers, land husbandry, soil conservation, and agroforestry as a cropping system.
- Established the Rio Grande Watershed Management Committee (RGWMC) and four task forces and supported their full functioning.
- Commissioned and completed a study of the erosion in St. Margaret’s Bay coastline and its possible linkages to sand mining in the watershed.
- Initiated grant-funded projects in water supply, water harvesting, wastewater management, agroforestry, and soil conservation in the watershed.
- Actively participated in multiple national, regional, and local shows and expositions.
- Completed one grant-funded activity providing improved water supply to a community in the upper watershed.

#### ***Component 2: Enhanced Compliance and Enforcement***

- Creating an integrated set of posters, song, and music video to support “It Haffi Legal” campaign through highly participatory design and pre-testing.
- Published “Communication 2003: Compliance and Enforcement Campaign Poster’s Pre-test” to document participatory process and input into the development of the R2RW series of posters for the “It Haffi Legal” Campaign.
- Published and widely disseminated “A Pocket Guide to Environmental and Planning Laws of Jamaica” in cooperation with NEPA and the Canadian-funded ENACT Project.
- At the request of the GRWMC and NEPA, completed an inventory and database of organizations and groups involved in compliance and enforcement in the GRW, and supported leadership for its intermittent update at NEPA.
- Published and used for discussion and planning “Development of Incentives for Private Sector Investment in Improved Watershed Management in Jamaica”.
- Implemented 3 symposia to sensitize Supreme Court Judges, Resident Magistrates and Clerks of the Courts from across Jamaica on environmental laws of Jamaica.

### **Component 3: *Enhanced Capacity To Implement Effective Watershed Management Programs***

- Published “Review of Local Watershed Management Committees in Jamaica”.
- Published “Procedures Manual: Establishing and Operating a Local Watershed Management Committee” and using document as center-piece for first-of-its-kind seminar where representatives of multiple water user and management associations from across the island were brought together for discussion and decision-making.
- Published outputs and conclusions of LWMC Networking Conference as “Workshop Report – Local Watershed Management and Governance Mechanisms: Towards Greater Citizen’s Participation in Sustainable Watershed Management”.
- Completed a Special Study on beach erosion in St. Margaret’s Bay which (1) established whether beach erosion is significant in the area, (2) determined the causes of erosion noted and looked for linkages to sand mining in the Rio Grande, and (3) developed an action plan to address the documented erosion problem.
- Increased public awareness of watershed issues and successes via radio, newspapers, and the internet on over 30 occasions – R2RW staff, NEPA professionals, and stakeholders including youth and community members participating in these events regularly throughout the Project Year
- Issued and widely distributed three newsletters including information on topics such as the Green Village Awards Program, Constructed Wetland Technology, Developments with LWMCs, and recent staffing changes to partners and stakeholders
- Three training workshops held on meeting management, wetlands education, and grant management.

#### ***Project Management***

- Coalesced the technical team into an efficient implementation group that is systematically addressing project management challenges
- Encouraged cross-project coordination through regular team meetings, Project Implementation Committee meetings, CWIP/R2RW administrative meetings, and participating in regular NEPA Senior Management Team meetings
- Conducted mid-term internal review of R2RW, shared results with USAID/Jamaica and NEPA, and acted upon review recommendations

#### **Summary of Key Achievements Outside the 3<sup>rd</sup> Annual Work Plan**

During the course of Project Year 3, R2RW was regularly asked to support initiatives, which emerged from identified needs of stakeholders, partners, or other key clients. The major accomplishments during the reporting period which were not proposed in the Project’s 3<sup>rd</sup> Annual Work Plan included the following:

#### ***Great River Youth and Environment Conference 2003***

84 participants from 30 organizations and 5 parishes attended this two-day Conference. The idea for the Conference emerged from discussions of the Great River Watershed Management

Committee (GRWMC) Public Awareness Task Force, and was a key priority of Stakeholders such as the Jamaica 4-H. The Conference held in July 2003 achieved the following five objectives:

- To bring together young persons to discuss environmental issues and recruit youth for the environmental cause;
- To acknowledge, honour and celebrate youth involved in environmental activities and create incentives for the development of environmental leaders;
- To enhance awareness on environmental issues and foster stewardship of the environment;
- To identify opportunities for careers in environmental fields/sector including agriculture; and
- To demonstrate the link between the environment and everyday life issues, laws and practices.

A presentation which summarizes the structure, attendees, activities, major findings, and recommendations of the Conference can be viewed in Appendix 2. A complete report on the Conference was produced by R2RW, "The Great River Watershed Youth and Environment Conference 2003".

#### ***USAID Support to Maximizing Private Sector Investment in Water Supply and Sanitation Infrastructure***

Under this cooperative effort, the USAID Office of Development Credit (ODC) provided USAID/Jamaica with the services of a staff member to work with a Jamaican environmental engineer whose specialty is water/wastewater on a two-week assignment. The objective of the activity was to determine Government of Jamaica and private sector interests in water and sanitation projects compatible with the goals of the US-Japan Partnership on Water and to conduct an initial scoping exercise to identify potential projects and partners. Their findings, are currently in draft form as "Water and Sanitation in Jamaica: Opportunities for the Development Credit Authority and the US-Japan Partnership on Water". This document serves as a basis for R2RW and USAID to look for opportunities where private sector commitment may be leveraged to address the enormous water supply and wastewater disposal challenges that lead to watershed degradation in Jamaica.

#### ***Expansion of R2RW Team to include Sonja Harris as the Participation, Public Awareness and Public Relations Specialist***

The Internal Review completed during the Project Year recommended that this position, originally held by Maria Protz until her departure, be converted from a consultancy to a full time position. A revised job description was written, the position advertised, a short list developed, and three candidates interviewed in August 2003. The Project is very pleased to have Ms. Harris join the Team as she has a solid background in participatory development processes, has a good working knowledge of the partners and target areas of the Project, and she is a leading expert on gender issues in Jamaica. She began working with the Team on September 4, 2003.

#### ***Creation of Opportunity for Seven Young Professionals to Work with the Project as Interns***

From June until August 2003, the R2RW Team worked with seven interns to carry out short-term assignments needed for project implementation as well as giving work experience to recent graduates. Six of the students were from the College of Agriculture, Science and Education, while the seventh was from the Montego Bay Community College. For example, Antonio Buddington worked with the Project as part of the team developing and conducting the Great

River Youth and Environment 2003 Conference. In this role he worked as the Assistant to the Coordinator of the conference. Based on his high performance in this position, he was asked to remain at R2RW to work in support of the Great River Compliance and Enforcement Task Force. The seven interns were as follows:

<b>Intern</b>	<b>Duty Station</b>	<b>Assignment</b>
Rohan Brown	RADA, Port Antonio	Coopers Hill Soil Conservation and Agroforestry Project
Ludloy Currie	RADA, Port Antonio	Rock Hall Reforestation and Crop Production Project
Kadian Coote	RADA, Port Antonio	Industry Soil Conservation and Agroforestry Project
Jason Bennett	RADA, Bethel Town	Cedar Grove Farmers Group and Hermitage Honey Limited
Kirk Black	Montpelier Agricultural Research Station	Rushea Farmers Group and Goat Improvement Projects
Tamica Montgomery	R2RW, Kingston	Head Office, Kingston
Antonio Buddington	Jamaica 4-H	Youth and Environment Forum

## **2. Project Vision and Strategy**

The Third Annual Work Plan presented the overall vision and strategy for R2RW updated to reflect the state of Project knowledge entering the third year of implementation. The following sections describe movement during Year 3 toward achieving the Project vision.

### **2.1 Vision**

R2RW articulated a consensus vision in the Third Annual Work Plan. The principle aspects of the vision and progress made during Project Year 3 in achieving that vision are presented on the following pages under five key areas of Project implementation:

- Improved governance;
- Effective institutional arrangements for watershed management;
- Enhanced public awareness;
- Improved policy, legislation, compliance and enforcement; and
- Capacity building.

Project Vision per TAWP	Achievements During Project Year 3
<b>Improved Governance</b>	
At the national level, Government agencies are more accountable to local communities using mechanisms established by R2RW for local accountability. Management policies tested and adapted.	Community and government representatives jointly participated in continually greater number at meetings of WMCs and their Task Forces as demonstrated in minutes of meetings.
	WMC Task Forces engaged representatives of State Agencies with communities to address priority local issues.
Local authorities are playing active role in watershed management.	Significant progress made on engaging local offices of RADA, the Forestry Department, and NEPA in design, decision-making, and implementing projects.
	Parish-level local government has begun to be engaged in Project activities and this will be a focus of Project Year 4.
Greater relationship and interconnections between lower and upper watershed residents. Facilitation of dialogue among communities of common interest – cross-fertilization and exchanges among watershed residents.	Launched cross-fertilization between the two targeted watersheds via workshop “Local Watershed Management and Governance Mechanisms: Toward Greater Citizen’s Participation in Sustainable Watershed Management”.
	Community and government representatives from throughout the watershed jointly participated in increasing numbers at meetings of the WMCs and their Task Forces as demonstrated in minutes of meetings.
	Conducted tour of Bogue Wetlands by stakeholders including representatives of upper GRW in February 2003.
Improve the regulatory framework for watershed management to facilitate greater compliance and enforcement and an increase in the number of cases prosecuted.	Exchange visit by RGWMC to GRW.
	Developed and widely distributed the “Pocket Guide on Environmental Regulations in Jamaica”.
	Facilitated “Judicial Symposia” to initiate awareness-raising with resident magistrates, supreme court judges, and clerks of the court regarding environmental laws, issues, policies, and management in order to improve enforcement of regulations in Jamaica.
	Through public awareness programs motivated citizens to take action on solid waste management issues.

Project Vision per TAWP	Achievements During Project Year 3
A new Watershed Protection Act developed that incorporates the challenges of enhanced governance.	Published "Review of Local Watershed Management Committees in Jamaica" to review strategies and methods employed to establish resource management user groups and recommend generic method to establish LWMCs.
	Watershed Policy further refined, and consensus among stakeholders developed on roles and responsibilities.
	Supported drafting and consideration of a new Watershed Act.
<b>Effective Institutional Arrangements for Watershed Management</b>	
More efficient local sustainable Watershed Management Committees (WMCs) to serve as examples or models for other watershed areas. Effective local and National Watershed Management Councils which combine a bottom-up approach with effective policy support. GRWMC and RGWMC established and fully functional.	First of its kind networking conference of watershed management groups held in Runaway Bay in May 2003 to bring together and share lessons learned among practitioners.
	Published "Procedures Manual: Establishing and Operating a Local Watershed Management Committee".
	Published "Review of Local Watershed Management Committees in Jamaica" to review strategies and methods employed to establish resource management user groups and recommend generic method to establish LWMCs.
	GRWMC and RGWMC, and their Task Forces, met regularly to discuss and devise solutions to priority issues of stakeholders.
Better usage of the resources in the watershed. Improved natural resources management with an integrated approach.	Eight grant-funded activities underway or completed in the Rio Grande watershed integrating improved sewage disposal, environmentally friendly income generation, livestock management.
	Seven grant-funded activities underway or completed in the Great River watershed integrating improved sewage disposal, water source protection, agroforestry, and land husbandry.
	Study on Incentives for Private Sector Involvement in Watershed Management completed, and national workshop undertaken to disseminate findings.
Incorporation of R2RW data into the Sustainable Watersheds Branch (SWB) database so that improved management mechanisms can be replicated and protocols for watershed monitoring and evaluation can be standardized.	SWB/NEPA is responsible for maintaining a database of Watershed Projects in Jamaica as part of NEPA's contribution to the Programs and Projects Working Group of the NIWMC. During the Project Year, R2RW provided technical assistance to the Branch to utilize the database to reflect current activity status in the country.

Project Vision per TAWP	Achievements During Project Year 3
<b>Enhanced Public Awareness</b>	
Public knowledge increased of a Watershed Management Unit (WMU). Watershed signs more prominent. Positive change in the attitude of the land users and identification with the watersheds.	Launched the Green Village Program with a special appearance of US Ambassador Cobb in the Great River watershed as part of a Project-facilitated program of activities on Earth Day.
	Signs placed to highlight Project intervention at all grant sites.
People's awareness, understanding and appreciation of which laws govern their everyday lives, and how it applies to them. E.g., Farmers ought to understand how their actions and decisions affect water quality downstream.	Production, distribution, and use in multiple fora of music video starring "Earth Defender" in support of the "It Haffi Legal Campaign".
	Facilitated "Judicial Symposia" to initiate awareness-raising with resident magistrates, supreme court judges, and clerks of the court to improve enforcement of environmental regulations.
	Developed and supported multiple performances of River Action with the Action Boyz, which have motivated communities to take action.
	Field tested, finalized, and distributed "Pocket Guide on Environmental Regulations in Jamaica".
Increased linkage between watershed management and improved water quality and quantity of water. Teaching tools for communities about the importance of watersheds.	Published and disseminated brochure "A Profile of the Great River Watershed".
	Completed water quality monitoring program in the Great River and reported findings to the watershed community in various fora.
Produced significant watershed management material for Jamaica, leading to a tangible increase in the understanding of what and where is a watershed.	Increased public awareness of watershed issues and successes via radio, newspapers, and the internet on over 30 occasions.
	Published and disseminated brochure "A Profile of the Great River Watershed", and "A Profile of the Rio Grande Watershed".
	Launched "River Action with the Action Boyz" program during a special appearance of US Ambassador Cobb in the Great River watershed as part an R2RW-developed program of activities on Earth Day.
	Organized and supported "Great River Youth and Environment Conference 2003" in response to identified stakeholder needs.



Project Vision per TAWP	Achievements During Project Year 3
<b>Improved Policy, Legislation, Compliance and Enforcement</b>	
<p>New and revised Watershed Protection Act. Environmental issues in watersheds are higher on the national agenda. Challenge the government on cohesiveness in purpose.</p>	<p>R2RW continues to facilitate the advancement of the Watershed Policy beyond the Green Paper stage through workshops, meetings and special studies to develop a consensus on the way forward and the roles and responsibilities of organizations.</p> <p>Began the process of review and revision of the Watershed Protection Act with NEPA Legal Services.</p>
<p>Two watershed management plans for the Great River and the Rio Grande. Watershed appreciably cleaner to stakeholders.</p>	<p>Strategic Plan for Sustainable Development of the Great River Watershed drafted, redrafted based on stakeholder input, and circulated for final comments.</p>
<p>Communities solving their own problems. Improved well being of watershed residents.</p>	<p>C&amp;E Posters, "It Haffi Legal" jingle and video, and Action Boyz skits helped to motivate communities to take initiative to solve local environmental problems. Green Village Program motivated communities to take pride in surroundings and foster stewardship. R2RW responded to five community clean-up initiatives.</p>
<b>Capacity Building</b>	
<p>Increased human resource development and capacity to monitor in the SWB. Transfer of the project back to NEPA when the Project ends. Transfer of information and lessons learned (e.g., there should be a manual available for use, by the SWB, when the project ends).</p>	<p>Operations Manual on how to establish Local Watershed Management Committees prepared. SWB staff served as active participants. Case studies of successful interventions prepared. SWB staff capacity built through attendance at local and international courses, and team building retreat. Monthly brown bag sessions helped to mentor staff on current issues in watershed management.</p> <p>SWB Team Building Workshops held to share knowledge of R2RW activities and build ownership of processes and team cohesiveness.</p>
<p>Use of Great River and Rio Grande as prototypes for water quality monitoring protocols. Procedures, methods and technologies introduced. Creation of a demonstration plot to show good watershed management practices.</p>	<p>Initiated special study with CASE to establish demonstration plots which show that recycling and reuse of wastewater in agriculture (including raising ornamental fish, establishing hydroponics, and growing organic herbs and spices) is financially rewarding and technically sound.</p> <p>Completed water quality monitoring program in the Great River in cooperation with University of the West Indies and reported findings to the watershed community at Task Force Meetings and Annual General Meetings.</p>

Project Vision per TAWP	Achievements During Project Year 3
<p>Team of agencies with the capacity to guide the dynamics of sustainable watershed management.</p>	<p>Supported the attendance of the R2RW Agronomic Specialist and an Area Extension Officer with RADA at the 39<sup>th</sup> Meeting of the Caribbean Food Crops Society in Grenada on “Food Production, Marketing and Food Safety”. Attendees presented a paper “An Approach to Reducing the use of Pesticide in Crop Production in Watershed Areas”. The pair gained exposure and contacts in agricultural research, extension, training, production, marketing and administration. Both benefited from exposure to research on the latest agronomic techniques for tree crops including cocoa germplasm and nutmeg production.</p>
	<p>Development of multi-stakeholder groups through both WMCs and their task forces, as well as support to the NIWMC and its working groups.</p>
<p>Greater coordination of projects within watersheds.</p>	<p>Initiated support for a significant grant-funded activity to be implemented by the Jamaica Conservation and Development Trust (JCDDT), a Jamaican national NGO with the mandate for park operation and management. The objective of this one year grant is to develop and implement a community education program for sustainable watershed management in support of JCDDT’s management of the Blue and John Crow Mountains National Park and R2RW’s programs in the Rio Grande Watershed.</p>
	<p>Worked closely with ENACT to field test, finalize, and distribute “Pocket Guide on Environmental Regulations in Jamaica”, and in developing and implementing symposia for magistrates.</p>
	<p>Made regular reports on status of R2RW to the Portland PDC per terms of the MOU with RGWMC and the PDC.</p>
	<p>Reformed PIC to enhance coordination of three USAID SO2 environmental initiatives.</p>

## **2.2 Project Strategy**

This section describes Project progress toward implementing each of the four strategies which are applied to achieve each Project objective or goal. These strategies are applied to each Project activity. It is important to re-emphasize that these strategies are not followed in isolation, but rather they inform and influence each other. The four strategies are:

- Building strategic partners;
- Involving communities;
- Identifying leverage points; and
- Applying appropriate practices.

In addition, a governance framework bringing together multiple centralized government agencies with emerging regional, parish and other local mechanisms for coordination forms a platform upon which the four strategies are implemented.

Achievements in Project Year 3 toward implementing each strategy are presented on the following pages:

Elements of Project Strategy	Achievements During Project Year 3
<b>Building Strategic Partners</b>	
Identifying and addressing the constraints strategic partners face in effecting environmental management.	Facilitated “Judicial Symposia” to initiate awareness-raising with resident magistrates, supreme court judges, and clerks of the court regarding environmental laws, issues, policies, and management in order to improve enforcement of regulations in Jamaica.
	Capacity of 25 WMC members and partners strengthened through a range of Project-supported training courses including topics such as managing meetings, developing agendas, and taking minutes.
Motivating and working with field staff of strategic partners.	Supported the attendance of the R2RW Agronomic Specialist and an Area Extension Officer with RADA at the 39 <sup>th</sup> Meeting of the Caribbean Food Crops Society in Grenada on “Food Production, Marketing and Food Safety”. Attendees presented a paper “An Approach to Reducing the use of Pesticide in Crop Production in Watershed Areas”.
	Gave awards for outstanding performance to key partners at the Youth and Environment Forum and GRWMC AGM.
	Mechanism in place for reimbursing excess travel claims for R2RW business with SDC and RADA.
Building working arrangements with and between public sector agencies, NGOs, and CBOs.	Published “Review of Local Watershed Management Committees in Jamaica” to review strategies and methods employed to establish resource management user groups and recommend generic method to establish LWMCs.
	State agencies working together with communities on WMC Task Forces to address watershed issues.
<b>Involving Communities</b>	
Regular and substantive input from communities that live within the watershed given to Local Watershed Management Committees.	Community and government representatives jointly participated in increasing numbers at meetings of WMCs and their Task Forces as demonstrated in meeting minutes.
Encouraging the development of sub-project activities that are community-based and community-driven.	Demonstrated and documented applicability and cost-effectiveness of water harvesting and constructed wetlands technologies for use in individual households and schools.
	Improved livelihoods by improving water supplies – pipelines, storage tanks – in response to community demand.
	Supported to multiple community-initiated clean up campaigns through the provision of tools, cleaning gear, garbage bags, and other supplies.

Elements of Project Strategy	Achievements During Project Year 3
Supporting strategic partners to ensure that sub-project activities are sustainable.	Coordinate with Forest Department to implement Plant A Tree Program. Conducted a series of capacity building activities with NEPA departments. Worked with NGOs such as MBMP and JCDT to implement effective community outreach programs. Support provided to RADA to reimburse excess travel claims of officers on R2RW related business.
Linking community involvement processes to all public awareness and environmental education activities.	Brought together multiple line ministries of government, WMCs, and citizens together to plan for establishing and financing LWMCs in workshop "Local Watershed Management and Governance Mechanisms: Towards Greater Citizen's Participation in Sustainable Watershed Management".
	Organized and supported "Great River Youth and Environment Conference 2003" to bring together 84 youth from 30 community-based organizations in 5 parishes.
	Involved resource persons from state agencies to discuss solutions performances of community skits by Action Boyz.
Integrating gender considerations into community involvement approaches.	Completed final draft of Gender Equity for Sustainable Watershed Management: First Report of Ridge to Reef Watershed (R2RW) Project Activities, 2000 to End of 2002.
Identifying models of "local watershed stewardship" and "community compliance strategies" that could be adopted during R2RW.	The Green Village Award Program was launched to recognize rural communities of the Great River Watershed based on environmentally sound stewardship activities. Awards will be granted in four categories guided by agreed criteria. The Green Village Award Program is an annual stewardship award program that will (1) give recognition to communities that implement specific stewardship activities, (2) encourage cooperation of communities, state agencies, ENGOs, and private sector, and (3) permit the GRWMC to gauge the impact of its activities at the community level.
Strengthening NEPA field staff in community outreach and mobilization skills directly, and through partnerships with other organizations.	Training provided in video techniques, writing effective press releases, stewardship and leadership, and disseminating environmental education.
<b>Identifying Leverage Points</b>	
Applying the Gender Equity Mechanism piloted by the Planning Institute of Jamaica to gain insights into key individuals and groups with influence over the shaping of public opinion.	Sensitization training conducted with GRWMC, RGWMC and partner agencies to modules in Gender Equity mechanisms.
Adopting social marketing strategies.	Sensitization of WMCs to equity considerations in scheduling of task force and project activity meetings.

Project Vision per TAWP	Achievements During Project Year 3
	Conducted focus group testing of C&E posters to adopt to literate and semi-literate audiences.
Targeting skills-building initiatives, tools for development, and information provision to leverage social, economic or environmental change.	Capacity of 25 WMC members and partners strengthened through a range of Project-supported training courses including topics such as managing meetings, developing agendas, and taking minutes.
	Provided technical assistance to the SWB to update the database of Watershed Projects in Jamaica to reflect current activity status in the country.
Encouraging joint partnership activities and leveraging the human and financial capital required to undertake them.	NEPA, NWC, FD, RADA, and community members work together through the GRWMC to review, amend, and refine grant applications to R2RW.
	R2RW worked with USAID/Jamaica to maximize private sector Investment in water supply and sanitation infrastructure. R2RW provided the services of a Jamaican environmental engineer to work with a specialist from USAID's Office of Development Credit to determine GOJ and private sector interests in water and sanitation projects compatible with the goals of the US-Japan Partnership on Water through an initial scoping of potential projects and partners.
Assessing each activity to ensure that it utilizes leverage points to enhance its impact.	Targeted the launching of the Green Village Program to coincide with a special appearance of US Ambassador Cobb in the Great River watershed as part of an R2RW-facilitated program of activities on Earth Day.
Collaborating with other environmental projects and initiatives working towards similar objectives in the same geographic area.	International collaboration is an important way to share lessons across boundaries to address similar issues. R2RW hosted a delegation from USAID/Honduras to share experiences and insights on marine life conservation, waste management, and community-based contributions to watershed health.
	Approved and began supporting a significant grant-funded activity to support the on-going work of the JCDT. The objective of this one-year grant is to develop and implement a community education program for sustainable watershed management in ten communities of the Rio Grande Watershed adjacent to the Blue and John Crow Mountains National Park.
	Worked closely with ENACT to field test, finalize, and distribute "Pocket Guide on Environmental Regulations in Jamaica", in developing and implementing symposia for magistrates, and designing institutional C&E Training Program.
Encouraging communities and strategic partners to leverage funding from other donors.	GRWMC has been actively seeking private sector funding for the Green Village Award program. The community of Retrieve successfully applied for funds from Canada Green Fund to host their annual environmental fair.

Project Vision per TAWP	Achievements During Project Year 3
<b>Applying Appropriate Practices</b>	
Introduce farming systems and technologies that will stimulate economic growth and retard resource degradation.	Benefited 123 farmers through 4 intensive training sessions as part of workshops and field days on various aspects of sustainable agriculture including: bio-fertilizers, land husbandry, soil conservation, and agroforestry as a cropping system.
	Initiated three Agroforestry Projects in the lower RGW, planting timber and fruit trees and using vegetative barriers.
Improve watershed management by applying sanitation systems, water monitoring, public awareness, and communication.	Reducing uncontrolled wastewater discharge by supporting construction of 17 water harvesting and constructed wetland systems.
	Completed water quality monitoring program in the Great River and reported findings to the watershed community in various fora.
Investigate and demonstrate ways to conserve natural resources, establish locally adapted crop varieties, meet local production needs of livestock focusing on small ruminants (sheep and goat).	Initiated cooperation with CASE to demonstrate the reuse of treated effluent from a wastewater treatment system in agriculture – including raising ornamental fish, establishing hydroponics, and growing organic herbs and spices – is financially rewarding and technically sound.
	Supported improved goat production in two locations in the GRW.
Provide infrastructure such as water.	Through the R2RW grants program, designed and implemented rural water supply projects in the RGW. One of the major reasons for supporting the improvement of water supply projects in the communities is to improve the personal hygiene practices, by providing a constant water supply. This will also allow the members of the community to perform their sanitary activities at their homes, rather than in the rivers, thereby protecting the source.
Increase productivity through laborsaving equipment, improved tools, and expanded use of quality planting material.	Continued implementation of Plant-a-Tree Campaign to work with farmers in “highly visible” deforested land in the GRW to (1) identify where tree-planting activities will take place; (2) clarify how trees would be distributed; (3) distribute 12,000 forestry tree seedlings and 5,000 fruit tree plantlets.
	Experimented with the use of wheel hoes, and continued multiplication of disease resistant banana varieties.
Develop and disseminate low-cost sanitation solutions that are environmentally sensitive.	Produced an instructional video documenting the installation of constructed wetland techniques in cooperation with the Montego Bay Marine Park’s video unit.

Project Vision per TAWP	Achievements During Project Year 3
Improve the marketing of products from the targeted watershed areas.	Establish marketable products – scotch bonnet peppers, honey – through support to three community-based projects expected to generate J\$6.3 million in local income.



### **3. Component 1A: Through Targeted Organizations, Sustainable Environmental Management Practices by Resource Users Identified and Supported in the Great River Watershed**

#### **Introduction**

Activities under this component of R2RW revolve around the Great River Watershed Management Committee (GRWMC). This Committee has received considerable support from R2RW toward establishing it as a mechanism for identifying priorities and devising solutions to environmental problems encountered in watershed management. Great emphasis was placed on exploring mechanisms for sustainability of the Committee within a broader national and institutional framework. During Year 3, R2RW worked to overcome the reality of multiple, centralized Government agencies working in an uncoordinated and incoherent way to implement watershed improvement programs by facilitating more coordinated, joint implementation of initiatives.

Through this mechanism, R2RW worked with local organisations – governmental, NGOs, private sector, and community-based – to introduce and disseminate Targeted Appropriate Practices (TAPs) in order to enhance their collective capacity to contribute to watershed management. But, activities under Component 1 in the GRW not only promote TAPs, but also strengthen the link that has been missing in previous watershed management programs – the capacity of organisations to transfer and sustain TAPs in the watershed.

Achievements under Component 1A during Project Year 3 are described in the following five sections.

3.1	<i>Development of the Great River Watershed Management Committee (GRWMC)</i>
3.2	<i>Production and Marketing in the GRW</i>
3.3	<i>Water and Sanitation Activities in the GRW</i>
3.4	<i>Public Awareness Activities in the GRW</i>
3.5	<i>Gender Considerations in the GRW</i>

#### **3.1 Development of the Great River Watershed Management Committee (GRWMC)**

Considerable progress continued toward solidifying the capacity of the GRWMC. Working with the Committee and its Task Forces, the Project continued to support livelihood enhancement, governance, stewardship, compliance and enforcement, and public education.

Work Plan Activity	Activity Description	Achievements During Project Year 3
<b>3.1</b>	<b>Development of the GRWMC</b>	
3.1.1	Development of Role, Mandate and Programs of the GRWMC	Drafted Strategic Plan for Sustainable Development of the Great River Watershed and circulated document for final comments
		Supported regular meetings of four GRWMC Task Forces
3.1.2	Management Activities of the GRWMC	GRWMC reviews and refines grant applications with minimal input or support from R2RW
		Capacity of 25 WMC members and partners strengthened through a range of Project-supported training courses including topics such as managing meetings, developing agendas, and taking minutes
		Community and government representatives jointly participated in increasing numbers at meetings of WMCs and their Task Forces as demonstrated in meeting minutes
3.1.3	Registration of the GRWMC	STTA provided to assess options for registration. Decision made by GRWMC to continue to function as an unregistered entity throughout the year
3.1.4	GRWMC-Managed Program Initiatives	Launched and supported the Green Village Program

### **3.1.1 Development of Role, Mandate and Programs of the GRWMC**

A significant achievement of the 3<sup>rd</sup> Project Year was the drafting, redrafting based on stakeholder input, and final circulation of a Strategic Plan for Sustainable Development of the Great River Watershed. A member of ARD's home office staff worked with a Jamaican specialist to prepare this document, and the WMS is currently circulating the document among a final round of stakeholders for final input. The Scope of Work for this significant undertaking can be found in Appendix 2. Finalization of the Strategic Plan is expected in the first quarter of Project Year 4.

### **3.1.2 Management Activities of the GRWMC**

GRWMC took steps toward establishing its post-R2RW function by reviewing and refining grant applications with minimal input or support from R2RW. Records of relevant, key GRWMC meetings are presented in Appendix 8. In addition, the Project supported a range of training courses for the WMC to strengthen the capacity of its members and partners. Courses included topics such as managing meetings, developing agendas, and taking minutes. Community and government representatives joint-participation in continually greater number at meetings of WMCs and their Task Forces resulted from this support and training as demonstrated in regularly-taken and disseminated meeting minutes.

### **3.1.3 Registration of the GRWMC**

The GRWMC examined options for incorporation and registration with R2RW STTA. Three consultants' reports were prepared:

- Valerie Gordon, February 2003, Procedures Manual: Establishing and Operating a Local Watershed Management Committee;
- Valerie Gordon, February 2003, Review of Local Watershed Management Committees in Jamaica; and
- Richard Lumsden, May 2002, Report on Options for Great River Watershed Management Committee.

The first two reports made recommendations for generic methods of establishing LWMCs including recommendations on mandate, governance and participation strategies, linkages with the NIWMC and policy and legislation issues. These two reports also identified and examined registration options, requirements for registration and costs. The third report examined in detail registration options and made specific recommendations for the GRWMC to continue as an unregistered entity, and to consider at a later date registration as a company limited by guarantee.

To date, the GRWMC has continued to operate as an unregistered entity. No firm decision has been made by the GRWMC regarding registration, however, the issue remains a priority to be dealt with in 2003/2004.

#### **3.1.4 GRWMC-Managed Program Initiatives**

The Green Village Program was developed by the GRWMC with particular leadership from the PAPAS and the Public Awareness Task Force. It was launched, supported, and promoted by R2RW during the year. The Program is an initiative in which rural communities of the Great River Watershed will compete based on environmentally sound stewardship activities guided by agreed criteria for Gold, Silver or Bronze certification (Appendix 6). Its launch was officiated by the special appearance of US Ambassador Cobb in the Great River watershed as part of her attendance at a program of activities on Earth Day.

In addition, progress was made toward the development of a lobbying and advocacy curriculum for the GRWMC. Discussions were held with relevant partners, and a SOW was drafted for a consultant to lead this effort. However, the activity was put on hold during Project Year 3 pending feedback from the Youth and Environment Conference.

### **3.2 Production and Marketing in the GRW**

The objective of this set of activities was to promote environmentally friendly and sustainable production practices. Improved marketing was a secondary objective that supported production, thereby improving the prospect of sustainability.

Work Plan Activity	Activity Description	Achievements During Project Year 3
<b>3.2</b>	<b>Production and Marketing in the Great River Watershed</b>	
3.2.1	Production and Marketing Task Force Initiatives	<p>Proactively identified production and marketing initiatives that emphasized environmentally friendly agricultural practices.</p> <p>Expanded the number of community members on the task force and improved communication to members.</p> <p>Delegated implementation responsibilities among task force members.</p> <p>Facilitated development of extension materials on agricultural 'best practices'</p> <p>Facilitated the provision of STTA on agricultural development initiatives including training days held in the field</p>
3.2.2	Nursery Development	<p>The identified needs of project were for timber and fruit tree seedlings not a physical nursery. Timber seedlings were procured through support to the Forestry Department nursery at Williamsfield, Manchester and fruit tree seedlings from the Ministry of Agriculture's Fruit Tree Crop Project nursery at Bodles Agricultural Research Station.</p>
3.2.3	Improved Crop Varieties	<p>Promote livelihood improvement through three community-based activities</p> <p>Expanded objectives of income generating project to include specific objectives related to use of income for environmental improvement</p>
3.2.4	Livestock improvement	<p>Rationalization of goat improvement projects; introduction of graded and purebred American Nubians to the GRW to upgrade local goats; introduction of environmentally friendly goat management system to the GRW.</p>
3.2.5	Market Development	<p>Supported the attendance of the R2RW Agronomic Specialist and an Area Extension Officer with RADA at the 39<sup>th</sup> Meeting of the Caribbean Food Crops Society in Grenada on "Food Production, Marketing and Food Safety". Attendees presented a paper "An Approach to Reducing the use of Pesticide in Crop Production in Watershed Areas". The pair gained exposure and contacts in agricultural research, extension, training, production, marketing and administration. And, both benefited from exposure to research on the latest agronomic techniques for tree crops including cocoa germplasm and nutmeg production</p>

Work Plan Activity	Activity Description	Achievements During Project Year 3
3.2.6	Plant-a-Tree Campaign	Identified "highly visible" deforested land in the GRW for reforestation and worked with farmers and communities to identify where tree-planting activities will take place; trained farmers as necessary; launched the Campaign; developed a distribution scheme of tree seedlings; distributed 12,200 forestry timber and fruit tree seedlings; and worked with the Forestry Department to implement a monitoring system for the planted trees.

### **3.2.1 Production and Marketing Task Force Initiatives**

The Great River Production and Marketing Task Force continued to serve as a dynamic mechanism to focus programs on priority issues as defined by stakeholders. Activities of the task force included:

- Proactively identified production and marketing initiatives that emphasized environmentally friendly agricultural practices.
- Expanded the number of community members on the task force and improved communication to members.
- Delegated implementation responsibilities among task force members.
- Develop extension materials on agricultural 'best practices' including:
  - Handbook: Selection and Field Establishment for Fruit Trees
  - Dos and Don'ts: Watershed Management Tips for Farmers
  - How to Grow Pineapples in Jamaica
- Facilitated the provision of STTA on agricultural development initiatives including training days held in the field.

### **3.2.2 Nursery Development**

Following an evaluation of seedling requirements, it was determined that there was no immediate need to establish a plant nursery. The principal needs of the project were for timber and fruit tree seedlings. Timber seedlings were procured through support to the Forestry Department nursery at Williamsfield, Manchester and fruit tree seedlings from the Ministry of Agriculture's Fruit Tree Crop Project nursery at Bodles Agricultural Research Station. Approximately 40,000 seedlings were procured through special arrangements.

### **3.2.3 Improved Crop Varieties**

Expanding the use of improved crop varieties by watershed farmers is approached by R2RW through two supportive approaches: training and direct support to community-based initiatives.

Some 75 farmers benefited from training in sustainable agricultural practices. The title, objectives, and outcomes of the training sessions are presented below.

<b>Title of Training</b>	<b>Objectives of Training</b>	<b>Outcomes of Training</b>
Training Day 'Growing Scotch Bonnet Pepper with organic inputs'	To train farmers of Rushea, St. James, in the use of organic inputs in scotch bonnet pepper production	16 farmers trained in the use of organic inputs in scotch bonnet pepper production
Pineapple Production and Pesticide Management	To train pineapple farmers of Huntley Castle, St. Elizabeth, in improved cultural practices including soil conservation and the safe use of fertilizer and pesticides	19 farmers trained in improved cultural practices including soil conservation and the safe use of fertilizer and pesticides 2 RADA extension officers trained
Hot Pepper production & Putting Cedar Back into Cedar Grove	To train pepper farmers of Cedar Grove, Westmoreland, in improved cultural practices including soil conservation and the safe use of fertilizer and pesticides	15 farmers trained in improved cultural practices including soil conservation and the safe use of fertilizer and pesticides
Perennial Crop Farming	To sensitize farmers to the Plant a Tree Program and to promote tree planting (especially cedar) in Cedar Grove	Farmers aware of the Plant a Tree Program
Introduction to Exotic Vegetables, Herbs and Spices	To expose farmers of Cacoon Castle, Hanover, to land management practices for vegetables, herbs and spices To inform farmers of potential production risks	23 farmers informed about land management best practices for vegetables, herbs and spices 23 farmers received R2RW sponsored Tropical Farmers Almanac containing information on cultural practices and judicious use of pesticides and fertilizer

The community-based activities being supported by R2RW are tabulated below indicating location, objectives, partners, and expected outcomes.

<b>Location</b>	<b>Objectives</b>	<b>Partners</b>	<b>Expected Outcomes and Completion Date</b>
Rushea	Expand income for 22 farmers through export marketing of scotch bonnet peppers produced using environmentally friendly practices	Rushea Farmers Group	J\$3.8 million in total sales
			R2RW requires that part of the income generated is used for local environmental improvements
			13 acres of farmland under improved management
			Demonstration of income generation from use of organic fertilizers
			Completion date: 4 <sup>th</sup> quarter 2003

Location	Objectives	Partners	Expected Outcomes and Completion Date
Cedar Grove	Expand income through export marketing of scotch bonnet peppers produced using environmentally friendly irrigation	Cedar Grove Farmers Group	J\$1.5 million in total sales
			R2RW requires that part of the income generated is used for local environmental improvements
			Completion date: 4 <sup>th</sup> quarter 2003
Hermitage	Improve livelihoods and increase environmental awareness by expanding honey production and sales	Hermitage Honey Producers	Increased environmental protection through tree preservation
			J\$0.7 million in total sales
			Completion date: 1 <sup>st</sup> quarter 2004

Finally, the Project supported several workshops of the Jamaica Organic Agricultural Movement (JOAM).

### 3.2.4 Livestock Improvement

Location	Objectives	Partners	Expected Outcomes and Completion Date
Knockalva	<p>To establish a "Mother Farm" to serve as focal point for an initiative to increase goat production in the GRW.</p> <p>To establish goat rearing groups.</p> <p>To demonstrate improved methods of goat production to local farmers including systems for shelter, feeding and security.</p> <p>To establish a revolving doe scheme to promote the dissemination of improved breeds of goats.</p> <p>To provide high quality technical assistance to implement techniques on mother farms, and to disseminate methods and techniques to interested farmers in the two identified target communities.</p>	Knockalva Agricultural School	<p>Goat herd previously sited at Retrieve Village was relocated to Knockalva Agricultural School that had better livestock infrastructure and animal husbandry expertise. Problems at the previous site included management, animal health, and clinic conditions that rendered the site unsuitable for goats.</p> <p>An existing building identified and modified for use as goat house.</p> <p>Mother farm established with graded Nubians.</p> <p>Veterinary interventions including a comprehensive vaccination program introduced.</p> <p>Improved system of goat production in place and demonstrable.</p> <p>Technical support provided to Mother farm with RADA and MINAG staff involved as part of strategy to disseminate methods and techniques to interested farmers.</p> <p>Animals are in good health and stable.</p> <p>Completion date: November 30, 2003.</p>

Location	Objectives	Partners	Expected Outcomes and Completion Date
Montpelier	<p>To establish a "Mother Farm" to serve as focal point for an initiative to increase goat production in the GRW.</p> <p>To Establish goat rearing groups.</p> <p>To demonstrate improved methods of goat production to local farmers including systems for shelter, feeding and security.</p> <p>To establish a revolving doe scheme to promote the dissemination of improved breeds of goats.</p> <p>To provide high quality technical assistance to implement techniques on mother farms, and to disseminate methods and techniques to interested farmers in the two identified target communities.</p>	<p>4-H Clubs of St. James</p> <p>Montpelier Agricultural Research Station</p> <p>Inter-American institute for Cooperation on Agriculture</p> <p>4-H Clubs of St. James</p> <p>RADA, 4-H and MINAG</p>	<p>Goat herd previously sited at Roehampton Estates was relocated to Montpelier Agricultural Research Station that had better livestock infrastructure and animal husbandry expertise. Animals are in good health and stable.</p> <p>The introduction of imported purebred American Nubians as a strategy to upgrade the local breed of goats. The herd is part of the research activities of the station and offers an opportunity for better understanding of the management requirements and performance of the animals under local conditions.</p> <p>Veterinary interventions including a comprehensive vaccination program introduced.</p> <p>Improved system of goat production in place and demonstrable.</p> <p>Technical support provided to Mother farm with RADA, 4-H and MINAG research staff involved as part of strategy to disseminate methods and techniques to interested farmers and 4-H members.</p> <p>Completion date: January 31, 2004</p>

### 3.2.5 Market Development

During the Project Year, R2RW supported the attendance of Mr. Joseph Suah, Agronomic Specialist with the R2RW, and Ms. Sadie Dixon, Area Extension Officer with RADA at the 39<sup>th</sup> Meeting of the Caribbean Food Crops Society in Grenada. The theme of the Conference was "Food Production, Marketing and Food Safety". Mr. Suah and Ms Dixon presented a paper "An Approach to Reducing the use of Pesticide in Crop Production in Watershed Areas". This paper focused on the introduction of black sikatoga tolerant varieties of banana and plantain as was done under R2RW. In addition, Mr. Suah presented a paper entitled "Reaping Frequency of Ripe Cocoa Pods, and its Effects on Bean Quality". This topic is of particular interest to the agroforestry projects underway in Industry and Rock Hall in the lower Rio Grande Valley.

Ms. Dixon, the Chairman of the Production and Marketing Task Force of the Great River Watershed Management Committee gained exposure and contacts in agricultural research, extension, training, production, marketing and administration. And, both benefited from exposure to research on the latest agronomic techniques for tree crops including cocoa germplasm and nutmeg production.

Specific work on the Montpelier Market was advanced slightly during the year, but no documentation has yet been received to support JAS' tenure on the land in Montpelier. Consequently, these activities are on hold pending this confirmation from the Commissioner of Lands.



### 3.2.6 *Plant-a-Tree Campaign*

The Plant-A-Tree campaign was started during Project Year 2 to encourage more persons and communities in the Great River watershed to plant trees for economic, cultural and environmental purposes. During Project Year 3, R2RW coordinated the tree production and distribution efforts relating to the campaign in association with the GRWMC, the Forestry Department and other stakeholders. Specifically, R2RW identified “highly visible” deforested land in the GRW for reforestation and worked with farmers and communities to identify where tree-planting activities will take place; trained farmers as necessary; launched the Campaign; developed a distribution of tree seedlings; distributed 12,200 timber and fruit tree plantlets. A summary of a draft final report for this work can be seen in Appendix 7.

### 3.3 **Water and Sanitation Activities in the GRW**

The objective of these activities was to address the highest priority issue of stakeholders in the Great River Watershed – that of poor sanitation in the watershed area. This was done through the Water and Sanitation Task Force, and was focused on improving watershed conditions by reducing pollution from household sewage, mitigating agricultural waste and managing solid waste disposal.

<b>Work Plan Activity</b>	<b>Activity Description</b>	<b>Achievements During Project Year 3</b>
<b>3.3</b>	<b>Water and Sanitation Activities in the Great River Watershed</b>	
3.3.1	Water and Sanitation Task Force Initiatives	Functioned as planned to conceptualize, design and oversee interventions in water and sanitation
3.3.2	Water and Wastewater Intervention	Improved watershed conditions by reducing uncontrolled wastewater pollution through support to constructed wetland technology to community centers, and constructing facilities for car and clothes washing.
3.3.3	Solid Waste Management Interventions	Supported community clean-ups in Pisgah, Haughton Grove and Bethel Town
3.3.4	Water Quality Monitoring on the Great River	Completed water quality monitoring program in the Great River and reported findings to the watershed community in various fora

#### 3.3.1 *Water and Sanitation Task Force Initiatives*

Regular quarterly meetings of this TF were held throughout the year. Additionally, productive working meetings (often on sites where water and sanitation grant projects were being implemented) were held to support the work of the TF. The task force was expanded to include technical officers of agencies including the NSWMA. Chairmanship changed hands in midyear and despite unavailability of the Vice Chairman and Secretary due to work commitments, the TF had a successful year. Implementation responsibility was shared among TF members.

#### 3.3.2 *Water and Wastewater Interventions*

The objective of these activities were to demonstrate improved, low cost, methods of sewage and wastewater disposal using constructed wetlands. Projects were implemented in four communities:

Location	Objectives	Partners	Expected Outcomes and Completion Date
Content	Improve watershed conditions by improving wastewater management and expanding tree planting at the local community center	Content Progressive Youth Club	Improved wastewater management through construction of bathrooms and showers which use water harvesting and constructed wetlands technologies
			Contribute additionally to watershed management through tree planting around new infrastructure
			Completion date: 4 <sup>th</sup> quarter 2003
Mafoota	Decrease surface water pollution by moving harmful practices out of rivers and into controlled settings	Mafoota Citizens' Association Mafoota Youth Club	Financially sustainable facility for laundry and car washing to move these activities out of the local river
			Reduced watershed pollution through application of water harvesting and constructed wetlands technologies
			Support to "It Haffi Legal" campaign by targeting environmentally damaging car washing in rivers
			Completion date: 1 <sup>st</sup> quarter 2004
Pisgah	Improve watershed conditions by improving wastewater management at a large rural school	Pisgah All Age School	Improved wastewater management through the demonstration of rainwater harvesting and constructed wetlands technologies
			Completion date: 4 <sup>th</sup> quarter 2003
Retrieve	Improve watershed conditions by improving wastewater management at a small rural school	Retrieve All Age School	Improved wastewater management through the demonstration of rainwater harvesting and constructed wetlands technologies
			Completion date: Completed

No progress was made during the year on design and installation of a village sanitation solution in Cambridge as the Project is considering the integration of this high priority activity in an anchor project for the town during Project Year 4.

### 3.3.3 Solid Waste Management Interventions

During Project Year 3, R2RW provides support to community solid waste initiatives in a variety of locations. A sampling of these are presented below in text taken from press releases prepared and distributed by the Project to publicize these positive actions:

- "Grade Nine Students of the Pisgah All-Age School in St. Elizabeth, their teachers, parents and other community members went straight to the head of the Great River this past Monday, December 2, 2002 to clean-up the garbage and debris that have accumulated around this important source of water over the past number of years."
- "Tools, cleaning gear, garbage bags and other supplies needed for the cleanup were supported through the Ridge to Reef Watershed (R2RW) Project. R2RW is working with the Pisgah community to enhance watershed resources through community-based solid waste management, sanitation solutions and more environmentally friendly agricultural production."

Other community clean-up were held in Bethel Town, Cacoen Castle, Plantation Heights and Seven Rivers.

### 3.3.4 Water Quality Monitoring on the Great River

Completion of water quality monitoring program in the Great River and reporting of findings to the watershed community in various fora. 18 sites were measured in the river by staff of the University of the West Indies, Discovery Bay Marine Laboratory. Specifically, on World Wetlands Day, the results of the water quality monitoring program were made public. This was the first time that the state of the Great River had been documented in this way. Key findings included extensive faecal coliform contamination of the river and identification of locations with high concentrations of both nitrates and phosphates. Results of the monitoring exercise can be found in Appendix 8.

### 3.4 Public Awareness Activities in the GRW

The objectives of this set of activities were to further enhance community understanding of environment issues affecting watershed management in all its elements.

Work Plan Activity	Activity Description	Achievements During Project Year 3
<b>3.4</b>	<b>Public Awareness Activities in the Great River Watershed</b>	
3.4.1	Support the Public Awareness Task Force	Launching and promotion of the "River Action with the Action Boyz" program
3.4.2	Water and Sanitation Public Awareness Programs for the GRW	Produced an instructional video documenting the installation of constructed wetland systems in cooperation with the Montego Bay Marine Park's video unit
3.4.3	Solid Waste Management Public Awareness Programs for the GRW	Presentations in communities using C&E Posters, and environmental skits have inspired stewardship through community clean-ups
3.4.4	Production and Marketing Public Awareness Programs for the GRW	Developed "Do's and Don'ts: Watershed Management Tips for Farmers" brochure, "How to Grow Pineapples in Jamaica" brochure, and "Selection & Field Establishment for Fruit Trees".
3.4.5	Plant-a-Tree Campaign	Tree planting promoted in target communities through slogans such as "put the cedar back in Cedar Grove". Formal PE program delayed due to departure of PAPAS.

#### 3.4.1 Support the Public Awareness Task Force

The "River Action with the Action Boyz" was developed cooperatively between the Public Awareness Task Force of the GRWMC, R2RW, and the Montego Bay Marine Park. It was launched, supported, and promoted by R2RW during the year. The Program utilizes local drama talent to educate communities and the general public of the Great River Watershed about issues related to water quality and sanitation using performers from Retrieve, St. James. The Action Boyz' launch was made official by the special appearance of US Ambassador Cobb in the Great River watershed as part of her attendance at an R2RW-developed program of activities on Earth Day. Attendance at their performances averaged 130 persons of all age groups. Awareness of environmental hazards in communities, which was recorded in R2RW's "Knowledge, Attitudes

and Practices” Survey (2002) as non-existent, has been built. There are two skits being presented by the group: “Wah yuh dash wey nuh wash wey” which focuses on improper disposal of garbage and sewage in the river, and “Saal Ting and water inna trouble” which deals with unhealthy and hazardous practices in agriculture and livestock rearing and their impact on river quality. In a representative community in the Great River Watershed, Seven Rivers, after the skits were performed residents started to put solid waste into bags and to plan a clean up day. Further, three households started to dig pits for toilets. More information about this popular and much-in-demand activity can be found in Appendix 9.

#### **3.4.2 Water and Sanitation Public Awareness Programs for the GRW**

In order to raise awareness of governmental and non-governmental audiences on the construction and application of the water harvesting and constructed wetlands technologies for wastewater treatment, R2RW contracted short-term technical assistance to produce an instructional video documenting the implementation of wetland projects in Retrieve (St. James) and Pisgah (St. Elizabeth). The Montego Bay Marine Park’s video unit conducted the work, and the video is currently available through R2RW and NEPA. The full shooting script for the video can be reviewed in Appendix 10. In addition to decision-making audiences, the video will also be an important educational tool for the River Action with the Action Boyz program.

#### **3.4.3 Solid Waste Management Public Awareness Programs for the GRW**

The clean up day at the head of the Great River, spearheaded by teachers, students and parents of the Pisgah All Age School was a symbolic and effective act. It indicates the impact to the wider community from the sanitation technology introduced to the school.

Cambridge, Seven Rivers, Plantation Heights among others, all began planning for permanent solid waste management solutions, including clean-up days, at the end of Year 3. These plans have been a direct result of community exposure to the Action Boyz’ skits, the “It Haffi Legal” poster campaign and the Youth & Environment Conference.

At the Youth & Environment Conference, the single most important issue to the 34 communities represented was – garbage. The Montego Bay Marine Park, along with R2RW Sanitation consultant, have been in preliminary discussions with the National Solid Waste Management Authority (NSWMA), to plan a seminar in the first quarter of Year 4. NSWMA started at the end of Year 3, to offer sustained support to communities as they plan for permanent solid waste management solutions.

#### **3.4.4 Production and Marketing Public Awareness Programs for the GRW**

Developed a brochure on “Watershed Management Tips for Farmers” for tree crop, vegetable and livestock production, soil protection, and pest control. The brochure was distributed to farmers through the Production and Marketing task force in the Great River and the Land and Conservation task force in the Rio Grande. A copy of the brochure is attached in Appendix 11.

#### **3.4.5 Plant-a-Tree Campaign**

The tree production and distribution aspects of the Plant A Tree Program were fully implemented during the year, however, the public awareness campaign to accompany the program was delayed due to the departure of the PAPAS during the year.

### 3.5 Gender Considerations in the GRW

The objectives of this set of activities were to support R2RW's goal of communities' sustainable use of natural resources, while enhancing best practices of different social groupings in sustainable livelihoods.

Work Plan Activity	Activity Description	Achievements During Project Year 3
<b>3.5</b>	<b>Gender Considerations</b>	
3.5.1	Work With GRWMC Executive to Consider Gender Equity in Grant Application Review	Gender sensitization workshops held with GRWMC Executives and gender checklist used by PAPAS
3.5.2	Training to Partners and Communities to Encourage Gender Equity Principles	This activity has been postponed, but all communities receiving grant funding in Year 3 have been sensitized to gender equity.
3.5.3	Hold Task Force Meetings at Venues and at times that enhance Gender Equity	PAPAS encouraged considerations of this equity principle to ensure that participation was as inclusive as possible
3.5.4	Monitor Gender Equity Principles During Grant Life	Gender checklist used by PAPAS, with slow but incremental progress in its application to grant fund review
3.5.5	Provide Annual Gender Report of Project Activities	Completed final draft of Gender Equity for Sustainable Watershed Management: First Report of Ridge to Reef Watershed (R2RW) Project Activities, 2000 to End of 2002, inclusive of instruments tested in communities

#### **3.5.1 Work with GRWMC Executive to Consider Gender Equity in Grant Application Review**

An Introduction to Gender Equity Session was held in the GRW, mainly for the GRWMC and R2RW Technical Team. A gender checklist was developed and used by the PAPAS who undertook a gender review of all the grant applications approved in the first part of the year. This is presented in Appendix 12 in this Report.

#### **3.5.2 Training to Partners and Communities to Encourage Gender Equity Principles**

The training for Partners and Community Leaders did not take place before the PAPAS left the Project. However, Community Audits of the watershed reflected on ways in which different people in the community use different resources and identified those persons that are most vulnerable (usually children, older folks, sick people and women). Questions related to stewardship and equity also produced valuable gender related information. The KAP Survey also produced a level of awareness of activities undertaken by women, men, and children, as well as activities that are influence by culture, religion, and ancestry.

The March 2003 Draft Gender Equity for Sustainable Watershed Management Report highlighted that training in construction for 12 women who led the Pisgah All-Age School Sanitation Project provided a good example of "an excellent project implemented on principles of gender equity". This also broke the gender stereotype of women involvement in construction.

### **3.5.3 Hold Task Force Meetings at Venues and at Times that Enhance Gender Equity**

Attempts have been made by the GRWMC and its task forces to hold meetings at different parts of the watershed to make sure that the same persons are not traveling all the time. Most community meetings are held at the times most convenient to the majority of community members. However, the broader stakeholders meetings are general held during the workday when State Agencies, Private Sector, NGOs and some Community representatives find it easier to attend. Community representatives are usually reimbursed their transportation cost.

### **3.5.4 Monitor Gender Equity Principles During Grant Life**

Projects monitored to date have been done by the former Gender Specialist. With the change in the Project's Gender Specialist, a review of the gender checklist and mode of monitoring projects is currently being undertaken.

### **3.5.5 Provide Annual Gender Report of Project Activities**

Completed final draft of "Gender Equity for Sustainable Watershed Management: First Report of Ridge to Reef Watershed (R2RW) Project Activities, 2000 to End of 2002" including sections on Training Activities - Sensitizing Members of the Local Watershed Management Committees and Project Accomplishments to Date. The key findings and conclusions of the document are not presented in this report pending comprehensive review and finalization of the document.

#### **4. Component 1B: Through Targeted Organizations, Sustainable Environmental Management Practices by Resource Users Identified and Supported in the Rio Grande Watershed**

In February 2002, a strategic Action Planning Workshop was conducted where local stakeholders identified the priority actions needed to maintain the quality of the RGW. These are shown in the following text box:

Strategic Action Priorities for the Rio Grande Watershed

1. *Enhance public awareness of environmental and watershed practices*
2. *Promote activities that are appropriate given the geophysical profile of the area to improve economic well-being of residents of the Rio Grande Watershed*
3. *Enhance waste management by promoting management systems that are environmentally compatible with the watershed*
4. *Support infrastructure development, particularly roads and water*
5. *Enhance the institutional capacity of organizations active in the watershed*
6. *Promote good stewardship and compliance*
7. *Undertake research and development of potential technologies and the application of targeted appropriate practices.*
8. *Develop a comprehensive plan that addresses carrying capacity, water quality, and management*

Since that time, R2RW has worked to implement or support those identified actions which are consistent with the overall objectives of the Project. In order to best engage the local stakeholders throughout Project implementation, R2RW facilitated the establishment of a governance mechanism - the Rio Grande Watershed Management Committee (RGWMC). Since its inception, this Committee has served as the focal point for coordination and decision-making regarding Project-supported activities in the watershed. In order to optimize direction and inputs, the RGWMC established four Task Forces to address: (1) Compliance and Enforcement, (2) Public Awareness, (3) Water and Sanitation, and (4) Land and Conservation. A portfolio of activities was developed jointly between R2RW and the RGWMC. Progress toward implementing this portfolio during Project Year 3 is described in the following sections.

Achievements under Component 1B during Project Year 3 are described in the following five sections.

- 4.1 *The Rio Grande Watershed Management Committee*
- 4.2 *Land and Conservation Activities*
- 4.3 *Water and Sanitation Activities*
- 4.4 *Public Awareness Activities*
- 4.5 *Gender Considerations*

##### **4.1 The Rio Grande Watershed Management Committee**

Considerable progress continued toward solidifying the capacity of the RGWMC. Working with the Committee and its Task Forces, the Project continued to support livelihood enhancement, governance, stewardship, compliance and enforcement. The objectives of this set of activities

were to establish the RGWMC and its task forces as mechanisms for addressing the priority issues of stakeholders in the RGW, and manage program initiatives.

<b>Work Plan Activity</b>	<b>Activity Description</b>	<b>Achievements During Project Year 3</b>
<b>4.1</b>	<b>The Rio Grande Watershed Management Committee (RGWMC)</b>	
4.1.1	Development of the RGWMC	Signed MOU for implementation of R2RW in RGW which outlines how Project will integrate with existing PDC Committees.
4.1.2	Management Activities of the RGWMC	Provided basic equipment for the exclusive use of the WMC in implementing and documenting its plans and activities
4.1.3	Registration of the RGWMC	No decision taken, consideration will be given during Year 4
4.1.4	RGWMC-managed Program Initiatives	These issues were dealt with by the Task Forces

#### **4.1.1 Development of the RGWMC**

The RGWMC was established during Year 2 of the R2RW. Of particular importance related to sustainability of the RGWMC, was the signing of an MOU, which specifically outlines how R2RW will integrate with existing PDC Committees. Regular reports on R2RW progress were presented at meetings of the Portland PDC.

#### **4.1.2 Management Activities of the RGWMC**

The RGWMC worked to build its capacity to service its members and task forces through several activities including:

- Training in Meeting Management, Developing Agendas and Minutes Taking
- Sponsor training of secretary, Winnifred Moore, on a six-weeks computer course.
- Acquisition of laptop computer, desktop computer and printer for chairman and secretaries of RGWMC.

#### **4.1.3 Registration of the RGWMC**

The watershed areas in Portland coincide with the development areas identified under local government reform. The RGWMC therefore fits not only into the WM process but also into local government reform.

As with the GRWMC, options for incorporation and registration of the RGWMC were assessed. To date, the RGWMC has continued to operate as an unregistered entity and no decision has been made regarding registration. This issue remains a priority to be dealt with in 2003/2004.

#### **4.1.4 RGWMC-Managed Program Initiatives**

The stewardship training activities planned for the period under review were not achieved, as efforts were concentrated on building leadership and secretariat skills (Appendix 5). The foundation has been laid for environmental stewardship training and activities in Year 4. The



RGWMC through exchanges with the GRWMC has benefited from the experiences of the GRW stewardship initiatives such as the Green Village Program and the Action Boyz and have plans to proceed with similar programs.

#### 4.2 Land and Conservation Activities

The objectives of this set of activities were to:

- Improve watershed protection through the adoption of sustainable agricultural practices, and in particular improved land husbandry practices.
- Improve ground cover through the establishment of timber and fruit trees.

Work Plan Activity	Activity Description	Achievements During Project Year 3
4.2	<b>Land and Conservation Activities</b>	
4.2.1	Establish RGWMC Land and Conservation Task Force	Task Force launched in late 2002. Met and supported throughout the Project Year
4.2.2	Improved Crop Varieties	Benefited 123 farmers through 4 intensive training sessions as part of workshops and field days on various aspects of sustainable agriculture including: biofertilizers, land husbandry, soil conservation, and agroforestry as a cropping system
		Supported planting of 5,807 timber trees, 6,828 fruit trees, and construction of extensive erosion barriers through three community-based activities
4.2.3	Livestock Improvement	Designed program for establishment of goat stud stations for implementation in Year 4.
4.2.4	Enterprise Development	This activity was not considered by the LCTF as a priority in Year 3.

##### 4.2.1 Establish RGWMC Land and Conservation Task Force

R2RW supported the launch of this Task Force in late 2002. At this first meeting, discussions were held to establish (1) Task Force functions, procedures and composition, (2) identification of priority land and conservation issues for the RGW, and (3) selection of Chairperson and Secretary. At later meetings of the Task Force, (1) further consideration was given to prioritizing on a time line the issues identified earlier, (2) grant applications from the watershed were considered, and (3) special studies were commissioned. By the end of the year, the Task Force was functioning with R2RW support.

##### 4.2.2 Improved Crop Varieties

On focus under this heading was the provision of training to farmers on a variety of sustainable agricultural practices. Four training sessions were held as part of workshops and field days that benefited 123 farmers on a variety of relevant topics. The title, objectives, and outcomes of each are presented below.

<b>Title of Training</b>	<b>Objectives of Training</b>	<b>Outcomes of Training</b>
Workshop on Bio-fertilizers Utilizing Agricultural and Agro-industrial Wastes	To transfer technology on the ways and means to convert organic agricultural residues, municipal waste, and animal waste into organic fertilizers	68 persons at the National level trained in composting as a sustainable waste management practice, five of whom were RGW residents
Bellevue promotional field day on Better Land Husbandry	To improve farmers' knowledge of land husbandry, soil conservation and agroforestry as a cropping system	20 farmers trained
Promotional field day at Industry on Agroforestry, Land Husbandry and Contour Farming	To improve farmers' knowledge of land husbandry, soil conservation and agroforestry as a cropping system	20 farmers trained
Coopers Hill promotional field day on Agroforestry, Land Husbandry and Contour Farming	To improve farmers' knowledge of land husbandry, soil conservation and agroforestry as a cropping system	15 farmers trained in making contour lines, spacing and establishing tree seedlings, and hillside soil conservation

To support and activate the increased knowledge of farmers obtained through the training, R2RW has also supported community-based projects designed to generate improved crops and cropping techniques. The community-based project which have received grant funding from the Project include those tabulated below:

<b>Location</b>	<b>Objectives</b>	<b>Partners</b>	<b>Expected Outcomes and Completion Date</b>
Rock Hall	Support reforestation, minimize land erosion, and enhance livelihoods through improved agroforestry and land husbandry	Rock Hall CBO, FD, RADA, SDC, JAS	2036 timber seedlings, 3665 fruit tree seedlings planted, and 7480 pineapple suckers planted
			Completion date: 1 <sup>st</sup> quarter 2004
Coopers Hill	Support reforestation, minimize land erosion, and enhance livelihoods through improved agroforestry and land husbandry	Coopers Hill CBO, FD, RADA, SDC, JAS	2607 timber seedlings, 1623 fruit tree seedlings planted, and 4365 pineapple suckers planted
			Completion date: 1 <sup>st</sup> quarter 2004
Industry	Support reforestation, minimize land erosion, and enhance livelihoods through improved agroforestry and land husbandry	Industry CBO, FD, RADA, SDC, JAS	1194 timber seedlings, 1550 fruit tree seedlings, 400 cocoa plants, and 1450 pineapple suckers planted
			Completion date: 1 <sup>st</sup> quarter 2004

#### **4.2.3 Livestock Improvement**

R2RW worked closely with RADA to design three goat stud stations that will be sited in selected communities of the RGW. This is a rapid way to upgrade the local breed. Implementation is expected to commence in the 2<sup>nd</sup> Quarter of Year 4.

#### 4.2.4 Enterprise Development

This area was not considered high priority by the LCTF, and therefore no action took place in Year 3. Opportunities for pro-poor tourism (including eco-tourism) are being explored with the University of the West Indies and discussions are ongoing.

#### 4.3 Water and Sanitation Activities

The objective of these activities were to respond to the priorities of stakeholders for design and implementation of activities that will allow for clean water supply and cost effective, but environmentally friendly wastewater disposal.

Work Plan Activity	Activity Description	Achievements During Project Year 3
4.3	<b>Water and Sanitation Activities</b>	
4.3.1	Water and Sanitation Task Force	Regular meetings and monitored grants work on H2O quality monitoring program, TF driven, in collaboration with other partners
4.3.2	Water & Wastewater Interventions	Moore Town water system completed and launched on World Water Day by Hon. Portia Simpson-Miller
4.3.3	Solid Waste Interventions	Not done, planned for Year 4 activities
4.3.4	Water Quality Monitoring	Conceptual design completed

##### 4.3.1 Water and Sanitation Task Force

This Task Force worked hard as a dynamic cohesive unit, directing priority actions for water and wastewater projects throughout the year. TF monitored the grant projects to ensure that they were completed to the highest standard and they included Millbank, Moore Town and CASE. Regular quarterly meetings took place throughout the year.

##### 4.3.2 Water and Wastewater Interventions

Several water and wastewater interventions were initiated during the Project Year in response to needs identified by the community and/or the Task Force. The objectives and expected outcomes of each are briefly described in the table below along with the expected completion dates of each activity. One of the grant-funded activities was completed in Moore Town during the year.

Location	Objectives	Partners	Expected Outcomes and Completion Date
Millbank	Improve watershed conditions by improving wastewater management and establishing a demonstration of the use of constructed wetlands at individual homes	Millbank Past Students' Association	Improved wastewater management through construction of bathrooms at 15 households which use water harvesting and constructed wetlands technologies
			Completion date: 4 <sup>th</sup> quarter 2003

Location	Objectives	Partners	Expected Outcomes and Completion Date
Moore Town Seaman's Valley Windsor	Improve livelihoods by increasing the volume of potable water coming to the community	Moore Town Maroon Council	Upgraded the existing entombment and installation of a new water distribution line from spring source to the main road
			Completion date: Completed, launched on World Water Day
Comfort Castle Ginger Hill Millbank	Improve livelihoods by increasing the volume of potable water available at schools, individual houses, and the general community	Comfort Castle CDC	Upgraded the existing entombment and installation of a new distribution line from the spring source to the main road
			Completion date: 1 <sup>st</sup> quarter 2004
Cornwall Barracks	Improve livelihoods by increasing the volume of potable water available to the general community	Cornwall Barracks CDC	Construct new entombment and installation of a new distribution line from the spring to the existing water main
			Completion date: 1 <sup>st</sup> quarter 2004
CASE	Treatment of livestock waste in constructed wetland and using recycled wastewater to grow ornamental fish and hydroponics	CASE	Strictly-monitored demonstration project
			Completion date: 3 <sup>rd</sup> quarter 2004

Five other communities including Windsor, Bourbon, Durham, and Bellevue has submitted applications for water supply and/or sanitation projects. These grant applications were pending at the end of Project Year 3.

#### **4.3.3 Solid Waste Interventions**

This set of activities was not done as emphasis was placed on water and wastewater projects throughout the year. Emphasis will be shifted to solid waste initiatives in Year 4 with the design of solid waste management solutions with NSWMA for the upper RGW.

#### **4.3.4 Water Quality Monitoring**

Activities completed include a review of CWIP experience with water quality monitoring in Portland. The WSTF has taken the lead on this activity and has been meeting to discuss a collaborative effort (to include WRA, NWC and NEPA lab) on water quality monitoring using CWIP reports as background documents. A proposal from the TF will be presented for approval in Year 4.

#### **4.4 Public Awareness Activities**

The objectives of this set of activities were to educate communities on environmental issues impacting the Rio Grande Watershed, and to build the skills of partner organizations for delivery of public awareness programs.

Work Plan Activity	Activity Description	Achievements During Project Year 3
<b>4.4</b>	<b>Public Awareness Activities in the RGW</b>	
4.4.1	Public Awareness Working Group	R2RW approved and began supporting a significant grant-funded activity to be implemented by the Jamaica Conservation and Development Trust (JCDDT): "Community Education Program for Sustainable Watershed Management in the Rio Grande Watershed"
		Designed and presented workshop for PAWG on "Writing Effective News Releases"
		Designed and implemented 3-day workshop on video training for partner agencies and community representatives.
		Co-sponsored with CWIP community animation training workshop for partner agencies involved in watershed management.

#### **4.4.1 Public Awareness Working Group**

The principal achievement by the Project with this Group was the presentation of a workshop for its members on "Writing Effective News Releases". R2RW also approved and began supporting a significant grant-funded activity to be implemented by the Jamaica Conservation and Development Trust (JCDDT). The objective of this one year grant is to develop and implement a Community Education Program for Sustainable Watershed Management in ten communities of the Rio Grande Watershed adjacent to the Blue and John Crow Mountains National Park. The project was initiated in July 2003. Other activities included a 3-day workshop on video training for partner agencies and community representatives, and a community animation training workshop for partner agencies involved in watershed management.

#### **4.5 Gender Considerations**

The objectives of this set of activities were to support improved practices among the rural poor, which would have a positive impact on people's sustainable use of natural resources.

Work Plan Activity	Activity Description	Achievements During Project Year 3
<b>4.5</b>	<b>Gender Considerations in the Rio Grande Watershed</b>	
4.5.1	Conduct "Gender & the Environment" Training with RGWMC	Training completed with Task Force, partner agencies and community representatives
4.5.2	Incorporate Gender Checklist Into Review of Grant Applications	Gender concerns are systematically discussed in Review of Grant Applications
4.5.3	Hold Task Force Meetings at Venues and at Times that Enhance Gender Equity	Some efforts made to schedule meetings so as to ensure maximum stakeholder participation
4.5.4	Support Additional Training to Enhance Awareness of Gender Principles	Planned but not executed

Work Plan Activity	Activity Description	Achievements During Project Year 3
4.5.5	Provide Annual Gender Report of Project Activities and Accomplishments	Completed final draft of "Gender Equity for Sustainable Watershed Management: First Report of Ridge to Reef Watershed (R2RW) Project Activities, 2000 to End of 2002"

**4.5.1 Conduct "Gender and the Environment" Training with RGWMC**

An Introduction to Gender Equity Session was held in the RGW in November 2002 attended by 41 persons (21 females and 20 males). A training session on running meetings held in January 2003 also encouraged females in leadership roles, and males to undertake secretarial duties. The KAP Survey also produced a level of awareness of activities undertaken by women, men, and children, as well as activities that are influenced by culture, religion, and ancestry.

**4.5.2 Incorporate Gender Checklist into Review of Grant Applications**

Gender concerns are systematically discussed in review of grant applications, and the PAPAS used the checklist to review earlier grants reviewed (please see Appendix 12). The new Gender Specialist is reviewing the checklist.

**4.5.3 Hold Task Force Meetings at Venues and at Times that Enhance Gender Equity**

Attempts have been made by the RGWMC and its task forces to hold meetings at different parts of the watershed to make sure that the same persons are not traveling all the time. Most community meetings are held at the times most convenient to the majority of community members. However, the broader stakeholders meetings are generally held during the workday when State Agencies, Private Sector, NGOs and some Community representatives find it easier to attend. Community representatives are usually reimbursed their transportation cost.

**4.5.4 Support Additional Training to Enhance Awareness of Gender Principles**

Additional training sessions to enhance awareness of gender principles were planned, but not executed due to the departure of the Gender Specialist.

**4.5.5 Provide Annual Gender Report of Project Activities and Accomplishments**

Completed final draft of "Gender Equity for Sustainable Watershed Management: First Report of Ridge to Reef Watershed (R2RW) Project Activities, 2000 to End of 2002" including sections on Training Activities - Sensitizing Members of the Local Watershed Management Committees and Project Accomplishments to Date. The key findings and conclusions of the document are not presented in this report pending comprehensive review and finalization of the document.

## 5. Component 2 - Incentives for and Obstacles to Enforcement of Targeted Existing Environmental Regulations Identified and Solutions Supported

### Introduction

Considerable progress was made by R2RW in the 3<sup>rd</sup> Project Year under this component based upon a refined and focused understanding of the regulatory and governance environment in the country. The national situation impacting on R2RW implementation of Component 2 activities includes:

- A multiplicity of environmental laws;
- Fragmentation of services, with numerous persons involved in enforcement;
- Unavailability of existing laws to professionals and the population;
- A general feeling that compliance and enforcement is ineffective;
- Most enforcement actions are undertaken under the Litter and the Mines and Quarries Acts;
- Significant regulatory authority rests with the Parish Councils – but some 39 centralized state agencies tend to disregard them;
- Most Jamaicans do not consider themselves to be watershed residents, but as residents of specific communities; and
- A disproportionate blame is placed on communities for breaches of environmental regulations.

Based on this acquired knowledge, R2RW focused their activities in three broad areas, namely:

- Compliance and Enforcement – Nationally
- Compliance and Enforcement in the Great River Watershed (GRW)
- Compliance and Enforcement in Portland, with emphasis on the Rio Grande Watershed (RGW)

The newly conceived objective of this component is to improve effectiveness of policy implementation and increase certainty of enforcement when infractions occur.

Achievements under Component 2 during Project Year 3 are described in the following five sections.

- |   |
|---|
| <ul style="list-style-type: none"><li>5.1 <i>Compliance and Enforcement - Nationally</i></li><li>5.2 <i>Compliance and Enforcement – Great River Watershed (GRW)</i></li><li>5.3 <i>Compliance and Enforcement – Portland with Emphasis on the Rio Grande Watershed (RGW)</i></li></ul> |
|---|

## 5.1 Compliance and Enforcement - Nationally

The objectives of this set of activities were to increase awareness of environmental laws and regulations with the hope of enhancing compliance with and enforcement of those laws.

Work Plan Activity	Activity Description	Achievements During Project Year 3
5.1	<b>Compliance and Enforcement - Nationally</b>	
5.1.1	Support National Initiative to Improve C&E	Facilitated “Judicial Symposia” for resident magistrates, supreme court judges, and clerks of the court to initiate awareness-raising regarding environmental laws, issues, policies, and management  Field-tested and finalized “Pocket Guide on Environmental Regulations in Jamaica. Distributed initiated in cooperation with NEPA and ENACT
5.1.2	Enhanced Policy and Legislation for Watershed Management	Produced a draft Watershed Policy and facilitated several workshops and meetings toward strengthening consensus on the mandates and responsibilities of the set of government agencies and ministries involved in watershed management
5.1.3	Private Sector Incentives in Watershed Management	Published “Development of Incentives For Private Sector Investment In Improved Watershed Management In Jamaica” and launched public discussions nationally
5.1.4	Enhanced Public Awareness of Compliance and Enforcement	Production, distribution, and use of 14 posters, jingle using popular artist, and music video starring “Earth Defender” in support of the “It Haffi Legal Campaign”

### 5.1.1 Support National Initiative to Improve C&E

Based on the KAP Study finding that knowledge of environmental regulations was uniformly low across the Jamaican population – from magistrates to ministries to mothers – multiple initiatives were undertaken by R2RW. Among these was the facilitation of three “Judicial Symposia” to initiate awareness raising with resident magistrates, supreme court judges, and clerks of the court regarding environmental laws, issues, policies, and management in Jamaica. To make this possible, R2RW brought to two of the three Symposia a senior judge from the State of Vermont, where ARD is located, with significant experience in enforcing environmental laws and establishing damage assessments. The full agenda of this three-day session can be found in Appendix 13. A CD of the proceeding including the relevant laws, and presentations at the symposia was produced and distributed.

Of additional significance were the field testing, finalization, and distribution of the “Pocket Guide on Environmental Regulations in Jamaica.” The document was finalized with significant stakeholder input and distributed in cooperation with NEPA and ENACT. An initial printing of 1,000 copies was distributed and plans in place for a second printing in the last quarter of 2003.



### **5.1.2 Enhanced Policy and Legislation for Watershed Management**

The Watershed Policy, which R2RW has been supporting throughout the Project, is intended to be an overall GOJ statement rather than a policy of a single agency. As another step in advancing the Policy beyond the Green Paper stage, R2RW facilitated several workshops and meetings with the objective of strengthening consensus on the mandates and responsibilities of the set of government agencies and ministries involved in watershed management. The agenda and conclusions from these discussions can be found in Appendix 14.

### **5.1.3 Private Sector Incentives in Watershed Management**

During the Project Year, the Project produced a document entitled “Development Of Incentives for Private Sector Investment in Improved Watershed Management in Jamaica”. The Executive Summary of the document is presented in Appendix 15. The document was promoted and distributed at the national level during a session held in Kingston. Follow-up activities are taking place through the Incentives Working Group of the NIWMC,

### **5.1.4 Enhanced Public Awareness of Compliance and Enforcement**

The “It Haffi Legal” campaign took on many new forms in Project Year 3. R2RW created complementary poster series, a jingle, and a music video in support of the campaign. The next step will be to integrate the three into a coherent national campaign whose impact can be quantified. Information on the campaign including the raw music video script can be found in Appendix 16. The posters were widely disseminated to a variety of organizations including the following:

Government Ministries	Schools	Libraries
Farm Stores JAS Groups	RADA Offices 4-H Clubs	Jamaica Livestock Association Branches
Post Offices	Forestry Departments	Licensing Departments
Colleges such as CASE and Knockalva	Court Houses Police Stations	Supermarkets Agricultural Fairs
Expos	NGOs and ENGOs	JAMAL Centers
Public Health Department	Clinics	Churches
Gas Stations	Auto Supply Stores	JUTA
Other Environmental Projects	Tax Offices	Taxi Associations

Results of pre-testing published by R2RW as “Communication 2003 – Compliance and Enforcement Campaign Poster’s Pre-Test”.

## **5.2 Compliance and Enforcement - Great River Watershed (GRW)**

The objective of these activities is to build the team spirit, effective working environment and encourage greater compliance and enforcement of environmental laws at the watershed and community levels

Work Plan Activity	Activity Description	Achievements During Project Year 3
<b>5.2</b>	<b>Compliance and Enforcement in the Great River Watershed (GRW)</b>	
5.2.1	Support Governance Mechanisms for Enhanced C&E in the GRW	Leon Hopkins's Study review of State, Private Sector, Civil Society, and Community Organizations involved in C& E in the GRW, and Task Force Meetings included presentations, training and Workshop, commence support to the SDC to reorganize the Cambridge Community Development Committee (a local government reform mechanism), and public awareness activities were all geared towards building stronger governance systems in communities that should lead to greater C& E of environmental laws
5.2.2	Capacity development for organizations involved in C&E in the GRW	Pocket Guide issued to local C&E officers
5.2.3	Implement Priority Activities of the C&E Task Force of the GRW	Clarification of strategy to address C&E "hotspot" in Cambridge through designation of this as Anchor Project location and drafting of comprehensive Project design
5.2.4	Develop and Implement Lobbying and Advocacy in the GRW	Partnership built with key agencies involved in Lobbying and Advocacy, Internet research completed and document circulated. Youth issues prioritized and support given to Youth and Environment Conference

### **5.2.1 Support Governance Mechanisms for Enhanced C&E in the GRW**

The C&E Task Force of the GRWMC was extremely active during the Project Year, with regular meetings of the Task Force, its Executive, and Working Groups taking place. Principal achievements included the undertaking of the Leon Hopkins's Study to review State, Private Sector, Civil Society, and Community Organizations involved in C& E in the GRW; the organization of a tour of the Cambridge "hotspot"; leading to the development of Cambridge as an "Anchor Project; and supported the Youth and Environment activities.

### **5.2.2 Capacity development for organizations involved in C&E in the GRW**

The original intent of this activity, to build community-level capacity for C&E through direct provision of equipment and training was rethought this year as the Project gained a deeper familiarity with C&E mechanisms. In future, the Project will look at building the capacity of C&E officers rather than communities, particularly around use of the Pocket Guide on Environmental Regulations in Jamaica. Because the Pocket Guide was only completed late in the Project Year, no significant progress was made in this area other than clarifying the change in Project approach.

### **5.2.3 Implement Priority Activities of the C&E Task Force of the GRW**

The Task Force priorities focus on solid waste management, deforestation, and the engagement of the private sector. For solid waste, the Task Force worked with all relevant government agencies to establish Cambridge as the first "hotspot" for direct attention. As a result of this, R2RW worked with SDC to develop the local CDC to be the lead change agent in the area.

Using the Plant-a-Tree Campaign and the Green Village contests as centerpieces, an initial draft of the comprehensive “Cleaning and Greening of Cambridge” was prepared.

In other communities, the Task Force focused its efforts on supporting widespread distribution of the C&E posters, and exploration through study of the incentives to get the private sector more involved. Concurrently, R2RW supported a number of community cleanups through nominal provision of equipment and garbage bags

**5.2.4 Develop and Implement Lobbying and Advocacy in the GRW**

The C&E Task Force established a Working Group to develop and implement Lobbying and Advocacy issues. This Group included the MBMP, SSU, Hanover Environmental Trust, and the SDC. An Internet Research undertaken by Trevor Spence was distributed. The Working Group decided to focus on Youths being advocates on environmental issues. JET was recommended to assist in developing Environmental Clubs in Schools. A SOW was developed, however, this was put-off until after the Youth and Environment Conference. Since then, the 4-H has developed a Programme in this area.

A strategy is being built to continue this activity in Year 4. The lack of sustained action in this area has also led R2RW to consider the institutionalization of this activity by including it as a part of the curriculum for the Community Training Course being developed by MIND with support from ENACT, and R2RW.

**5.3 Compliance and Enforcement - Portland with Emphasis on the Rio Grande Watershed (RGW)**

This section is focused on Portland, “with emphasis on the Rio Grande Watershed” rather than just on the RGW. R2RW worked with an interagency group developed by ENACT and the stakeholders decided to expand this working group to include community representatives. The objectives of this set of activities were to encourage greater compliance and enforcement of environmental laws at the watershed and community levels.

<b>Work Plan Activity</b>	<b>Activity Description</b>	<b>Achievements During Project Year 3</b>
<b>5.3</b>	<b>C&amp;E in Portland, with Emphasis on the Rio Grande Watershed (RGW)</b>	
5.3.1	Support Governance Mechanisms for Enhanced C&E in Portland & RGW	Portland-wide C&E Task Force formed and organized with particular emphasis on the many aspects of sand mining in the region
5.3.2	Capacity Development for Organizations and Groups Involved in C&E in Portland	Pocket Guide issued to local C&E officers
5.3.3	Implement Priority Activities of the Portland C&E Task Force	Formed Mining/Quarry Advisory Committee
5.3.4	Develop and Implement Lobbying and Advocacy in the RGW	Special Study undertaken by Professor Robinson to bring updated information to the St. Margaret Bay and adjoining communities on Sand Mining issues, and several community forums held. Internet research completed and document circulated, and Mines Monitoring Committee developed to ensure communities voice in related issues.

### **5.3.1 Support Governance Mechanisms for Enhanced C&E in Portland & RGW**

The Portland Compliance and Enforcement Task Force was launched during the Project Year. The Task Force rapidly formalized and adopted its Terms of Reference (TOR) for the Task Force and, with support from R2RW, developed a work plan with active involvement of the local Parish Council (PC). At the regularly held meeting, the Task Force focused on mining in the watershed beginning with a specific updating and information sharing session on the official process to follow when applying for mining permits.

### **5.3.2 Capacity Development for Organizations and Groups Involved in C&E in Portland**

The original intent of this activity, to build community-level capacity for C&E through direct provision of equipment and training was rethought this year as the Project gained a deeper familiarity with C&E mechanisms. In future, the Project will look at building the capacity of C&E officers rather than the communities, particularly around use of the Pocket Guide on Environmental Regulations in Jamaica. Because the Pocket Guide was only completed late in the Project Year, no significant progress was made in this area other than clarifying the change in Project approach.

### **5.3.3 Implement Priority Activities of the Portland C&E Task Force**

The top priority of this Task Force is to find ways to address illegal or questionable sand mining. As the first step in addressing this, R2RW facilitated the Task Force's forming and mobilizing a Mining/Quarrying Advisory Committee to bring together stakeholders and develop viable solutions. Concurrently, R2RW worked with the Task Force to incorporate deforestation and soil erosion control measures in the preliminary design of an Anchor Project to take place in the watershed. To address the Task Force's ongoing concerns about overuse of pesticides in the watershed and beach erosion, R2RW facilitated presentations to them on responsible pesticide use and sponsored a Special Study to examine possible linkages between sand mining and beach erosion in St. Margaret's Bay.

### **5.3.4 Develop and Implement Lobbying and Advocacy in the RGW**

The PC&ETF responded to its stakeholders by attempting to build the knowledge base, especially of the communities in and around St. Margaret's Bay to better understand the lobbying, advocacy, and conflict resolution skills necessary to deal with the competing use of the Rio Grande especially for mining and rafting purposes. Responding to a request from St. Margaret's Bay, a SOW was developed with JET for training the communities in lobbying and advocacy skills. However, given the very "charged environment", the decision was made to firstly complete base-line technical information. It should be noted that the community rejected findings regarding the relationship with sand mining and beach erosion. The results pointed to natural factors as the primary causes of beach erosion, which is opposed to the community views that sand mining is the principal cause of the beach erosion.

R2RW is currently working with the Mines Monitoring Unit of the MLE to document the status of all agencies involvement in the Rio Grande, and to build some level of agreement on the co-existence of the mining and tourism interest, and to strengthen the Mines Monitoring Committee. Portland will also benefit from the proposed institutionalization of this activity by including it as a part of the curriculum for the Community Training Course being developed by MIND with support from ENACT, and R2RW.

## 6. Component 3 - Capacity of Jamaican Government Agencies, International Donors, and Private Sector and Civil Society Organizations to Implement Effective Watershed Management Programs Enhanced

### Introduction

It is acknowledged that the central government in Jamaica has a key role to play in watershed management – through multiple line agencies and the National Integrated Watershed Management Council (NIWMC). In reality, coordination, oversight, and regulatory responsibilities must remain the responsibility of GOJ agencies. The Sustainable Watersheds Branch (SWB) of NEPA is expected to play a lead role in policy, information management, and monitoring of watersheds. However, many aspects of watershed management are best implemented by local government, NGOs, or private sector entities. It is expected that the ability of all partners to implement watershed management programs will be enhanced under this Component through support for better cooperation, direct strengthening of capacity, and facilitated coordination of activities.

Achievements under Component 3 during Project Year 3 are described in the following four sections.

- 6.1 *Capacity Building of the Sustainable Watersheds Branch of NEPA*
- 6.2 *Enhancing Coordination*
- 6.3 *Strengthening National Public Awareness Activities*
- 6.4 *Gender Activities at the National Level*

### 6.1 Capacity Building of the Sustainable Watersheds Branch of NEPA

The objectives of this set of activities were to build the capacity of the SWB to implement programs in watershed management.

Work Plan Activity	Activity Description	Achievements During Project Year 3
<b>6.1</b>	<b>Capacity Building of the Sustainable Watersheds Branch of NEPA</b>	
6.1.1	Strengthening the SWB/NEPA	Initiated strengthening by facilitating a staff retreat to engage in visioning and the development of an action agenda for the Branch
6.1.2	Tools for Sustainable Watershed Management	Provided intermittent technical assistance to ensure the optimized contribution of the database of Watershed Projects in Jamaica to the work of both the SWB and the NIWMC
6.1.3	Training of SWB Staff and Other Key Watershed Management Staff	Provide training to increase the knowledge capacity of the members of the SWB to implement programs in sustainable watershed management.

Work Plan Activity	Activity Description	Achievements During Project Year 3
6.1.4	Networking and Professional Development	Hosted representatives from USAID/Honduras for a learning tour of Montego Bay and the Great River Watershed with special emphasis on R2RW community-based activities
		Conducted an Internal Mid-term Performance Assessment of R2RW to validate that Project actions and management continue to reflect and advance toward programmatic priorities of NEPA and USAID leading to recommendations and an action plan for their achievement
		Supported attendance of staff and partners at international fora on multiple aspects of watershed management

### **6.1.1 Strengthening the SWB/NEPA**

In January 2003, R2RW worked with the SWB of NEPA to conduct a two-day staff retreat. The objectives of the retreat were to assist the SWB in:

1. Reviewing their earlier Team Building exercise (November 2001) to determine what has been achieved since and the challenges faced;
2. Confirming the current status and “reality” of the SWB;
3. Developing consensus on a vision for the SWB,
4. Defining what needs to be done in the short-term to achieve this vision; and
5. Defining an action agenda and commitments to realize the agreed strategic directions.

The Agenda and results of this retreat can be found in Appendix 17.

### **6.1.2 Tools for Sustainable Watershed Management**

SWB/NEPA is responsible for maintaining a database of Watershed Projects in Jamaica as part of NEPA’s contribution to the Programs and Projects Working Group of the NIWMC. During the Project Year, R2RW provided technical assistance to the Branch to update the database to reflect current activity status in the country. R2RW mobilized the individual who developed the database to provide intermittent assistance throughout the year to ensure its optimized contribution to the work of both the Branch and the Council.

### **6.1.3 Training of SWB Staff and Other Key Watershed Management Staff**

Provide training to increase the knowledge capacity of the members of the SWB to implement programs in sustainable watershed management.

**Wetlands Education Training:** R2RW supported two two-day training workshops in Wetland Conservation using Experienced overseas facilitators Michele Kading (Head Interpreter, Oak Hammock Marsh, Canada) and Lisa Sorenson, (Ecologist, Boston University, Wetlands Conservation Project Coordinator) to lead the workshops. The objective of the program was to raise awareness of the importance and value of the local wetlands including the value of man-

made wetlands. These workshops were attended by the watershed conservation officers of the SWB for the Great River and Rio Grande Workshops in addition to the staff of the Biodiversity Branch of NEPA and other key partners such as the Forestry Department, RADA, Jamaica Conservation and Development Trust, Montego Bay Marine Park and Portland Environmental Protection Agency.

**Training in Meeting Management and Minutes Taking:** Two one day workshops were held in January 2003 to provide training to a wide cross section of stakeholders involved in watershed management activities including the watershed conservation officers in Meeting Management, How to set Agendas and Minutes Taking. These workshops were then reinforced in April 2003 by two half-day sessions with the following objectives:

- To review aspects of the Meeting Management training held on January 2003.
- To discuss the methods of recording minutes for the RGWMC and its Task Forces.
- To review the roles and responsibilities of secretaries of the RGWMC and its Task Forces.

#### **6.1.4 Networking and Professional Development**

As one contribution to sharing NEPA's programs with other related international professionals, R2RW hosted a delegation from USAID/Honduras for a tour of Montego Bay, GRW and the RGW. Priority topics discussed included marine life conservation, waste management, and the role of community-based activities in watershed management. A complete agenda and list of attendees at the study tour can be found in Appendix 18. A second area of Project support was in attendance of key partners at international fora related to watershed management. The head of SWB attended a watershed seminar at the University of Wisconsin, the Water and Sanitation Specialist traveled with the PAPAS to a workshop in St. Lucia, the chair of the GRWMC attended an international seminar on water quality in Las Vegas, and R2RW's Agronomist Specialist traveled with a key partner from RADA, St. James to present and attend the Caribbean Food Crop Society Conference in Grenada.

Overall, R2RW Staff and Partners attended four international networking and professional development events during the reporting period.

- Thera Edwards, NEPA/SWB attended an international seminar on Watershed Management at the University of Wisconsin for two weeks October 2003.
- Jason Excell and Maria Protz of R2RW attended the Water and Waste water Conference in St. Lucia for 5 days in October 2003
- Don Streete, NWC attended the International Water Quality Association Conference for one week in March 2003.
- Sadie Dixon and Joe Suah to attend the Caribbean Food Crops Society in meeting in Grenada in July 2003.

#### **6.2 Enhancing Coordination**

The objectives of this set of activities were to encourage greater collaboration among the agencies participating in the NIWMC.

Work Plan Activity	Activity Description	Achievements During Project Year 3
<b>6.2</b>	<b>Enhancing Coordination</b>	
6.2.1	National Integrated Watershed Management Council (NIWMC)	Provided documentation and research support to four areas of priority to the Council
6.2.2	Development of Watershed Management Committees	Facilitated participation by multiple line ministries, LWMCs, and citizens in workshop "Local Watershed Management and Governance Mechanisms: Toward Greater Citizen's Participation in Sustainable Watershed Management"
		Published "Review of Local Watershed Management Committees in Jamaica"
		Published "Procedures Manual: Establishing and Operating a Local Watershed Management Committee"
6.2.3	Mainstreaming Technologies	Prepared brochures and video on constructed wetland technology. Preliminary discussions held with relevant agencies on including technologies in current list of treatment options
6.2.4	Special Studies	Worked on 5 special studies during the year: <ol style="list-style-type: none"> <li>1. Beach Erosion in St. Margaret's Bay</li> <li>2. Water Quality in Great River</li> <li>3. Wood boring insects in Honduras Mahogany</li> <li>4. Niche Marketing in lower Rio Grande</li> <li>5. Economics of Agrochemical use in RGW</li> </ol>

### **6.2.1 National Integrated Watershed Management Council (NIWMC)**

Multiple efforts were supported by R2RW to meet needs specified by the NIWMC and its Working Groups. Among these were the study on incentives for private sector investment in watershed management, the review of strategies taken on the island for establishing LWMCs and LFMCs, and the documentation of methods for establishing such committees. The executive summaries of each of these three documents are presented in Appendix 20. In addition, R2RW's support for external technical assistance helped the NIWMC to maintain its database on Watershed Projects in Jamaica.

### **6.2.2 Development of Watershed Management Committees**

The issues around establishing and financing of Local Watershed Management Committees (LWMCs) continues to be a challenge being addressed by the Project. During Project Year 3, R2RW mobilized short-term technical assistance (STTA) to prepare two key documents to advance this agenda: (1) a "Review of Local Watershed Management Committees in Jamaica, and (2) a "Procedures Manual: Establishing and Operating a Local Watershed Management Committee". These documents were each published by the Project (see Appendix 20). In support of operationalizing the content of this publication, R2RW made the first effort toward joint and comprehensive consideration of this challenge by facilitating the leadership of the NIWMC, NEPA, and FD to bring to one venue representatives of SDC, GRWMC, RGWMC, Buff Bay/Pencar LFMC, and representatives of a range of water user associations (WUAs) to establish an action agenda for establishing and financing Local Watershed Management



Committees (LWMCs) throughout Jamaica. A full description of this first-of-its-kind workshop, a copy of the presentation which set the stage for discussion, and the conclusions developed by the attendees can be found in Appendix 20.

### 6.2.3 Mainstreaming Technologies

Prepared brochures on constructed wetland technology for aerobic and anaerobic conditions. Produced an instructional video documenting the installation of constructed wetland techniques in cooperation with the Montego Bay Marine Park's video unit. Preliminary discussions held with relevant agencies on including technologies in current list of wastewater treatment option.

### 6.2.4 Special Studies

Multiple special studies were supported by R2RW during Project Year 3. Tabulated below are the title, objective, and output of each. Additional information can be found on each in Appendix 15.

Special Study Title	Special Study Objective	Special Study Output and End Date
Preliminary Assessment of Beach Erosion in St. Margaret's Bay, part of Rio Grande Watershed, Portland, Jamaica	(1) Establish whether beach erosion is significant along the coastline of St. Margaret's Bay, (2) Determine the causes of said beach erosion, and whether there are linkages to activities such as sand-mining in the Rio Grande, and (3) Develop an action plan for addressing the problem	Two publications: one technical report and one abbreviated version aimed at a community audience. The executive summaries of each are presented in Appendix 15
The Water Quality of the Great River Watershed, St James/Hanover/Westmoreland	To conduct a water quality monitoring program for the Great River Watershed covering 15 – 20 sites	Data collection complete. Interim quarterly reports of water quality results received. Awaiting Final Report
Investigation of wood boring insects in Honduras Mahogany ( <i>Swietenia macrophylla</i> ) and Blue Mahoe ( <i>Hibiscus elatus</i> )	To identify the wood boring insects infesting the Honduras Mahogany and the Blue Mahoe plantations in Jamaica and to recommend remedial actions to mitigate the infestation	Consultant, Dr. Luko Hilje, Senior Entomologist, Plant Protection Unit, Tropical Agricultural Research and Higher Education Center (CATIE), Costa Rica to commence 1st Phase in December 2003
Niche Marketing as a Strategy to enhance the Linkages between Agriculture and Tourism; Rural Development and Preserve Agro Biodiversity in the Lower Rio Grande Valley, Portland, Jamaica	To provide information that will aid policy development to support sustainable linkages between agriculture and tourism within a niche market strategy	Marsha Henry-Martin, UWI Intern to submit final report

Special Study Title	Special Study Objective	Special Study Output and End Date
The Economics of Agrochemical Use and Biodiversity on Small Farmers Plots in the Rio Grande Valley, Portland Jamaica	To determine the quantity and cost of agricultural inputs, with special emphasis on herbicides, insecticides/fungicides, nematicides and fertilizers used by 31 small farmers on their plots, in five communities in the Rio Grande Valley	Hugh Smith - UWI Intern to submit final report

### 6.3 Strengthening National Public Awareness Activities

The objectives of this set of activities were to increase public awareness of watershed issues at the national level through the print and electronic media and expositions. Specifically these activities helped to:

- Enhance the public image of the Project and by extension that of NEPA and USAID using all available media.
- Increase the awareness of sustainable watershed management issues using both national and local public awareness initiatives.

Work Plan Activity	Activity Description	Achievements During Project Year 3
<b>6.3</b>	<b>Strengthening National Public Awareness Activities</b>	
6.3.1	General Public Awareness Activities	Increased public awareness of watershed issues and successes via radio, newspapers, and the internet on over 50 occasions Published and disseminated brochure "A Profile of the Great River Watershed"
6.3.2	Enhance NEPA Public Awareness Programs	R2RW and NEPA developed and launched a strategy for launching the "It Haffi Legal" campaign
6.3.3	Expositions	Showcased initiatives and successes in sustainable watershed management at fairs and expos nationally

#### 6.3.1 General Public Awareness Activities

During Project Year 3, R2RW staff maximized the use of multiple media on numerous occasions to engage and educate the general public about the issues being faced by and the actions being taken by the Project. Staff engaged radio, newspaper, and the internet to promote campaigns, publicize public events, and raise public awareness around watershed issues. Staff facilitated partners ranging from NEPA staff to aware youth accessing media and generated significant and substantive discussions via each. A full listing of recent media contacts to publicize, promote, and stimulate awareness is presented in Appendix 21.

In addition, the Project generated a number of generic, informative, brief informational materials to facilitate widespread understanding of watersheds and watershed issues. Among these are the following:

- Brochure - A Profile of the Great River Watershed
- Brochure on Rio Grande Watershed
- Three newsletters produced
- 14 press releases produced.
- Posters for C&E produced and launched.
- Video for it haffi legal campaign produced
- Video of Constructed Wetlands Technology
- Pocket Guide on environmental laws produced

### **6.3.2 Enhance NEPA Public Awareness Programs**

NEPA and R2RW staff worked closely together to finalize the elements of the “It Haffi Legal” campaign. The two groups then jointly developed an initial strategy for launching the campaign as part of World Environment Day and Week in June 2003. The successful launch was followed by widespread distribution of the set of posters developed around the campaign. The minutes of the meeting which details the strategy for launching the campaign is presented in Appendix 16.

### **6.3.3 Expositions**

The Project team actively participated in numerous expositions during the year to educate, raise awareness, and disseminate Project products. The Project consistently utilized the poster series, music video and interactive constructed wetland display model to engage public audience at expositions including R2RW/BirdLife Jamaica/MBMP World Wetlands Day 2003 Celebrations, Rio Grande Village Craft Expo, Montpelier Agricultural Show, Denbigh Agricultural Show, CASE Career Day and Retrieve All Age Environmental Expo.

## **6.4 Gender Activities at the National Level**

The objectives of this set of activities were to begin mainstreaming gender equity principles and practices into the system of Sustainable Watershed Management.

<b>Work Plan Activity</b>	<b>Activity Description</b>	<b>Achievements During Project Year 3</b>
<b>6.4</b>	<b>Gender Activities at the National Level</b>	
6.4.1	Conduct “Gender and Environment” Training With NEPA Staff	Discussions held with NEPA. Activity not implemented
6.4.2	Incorporate Gender Checklist Reporting into NEPA Reporting Mechanisms	Not implemented
6.4.3	Revise Grant Fund Application to Include Gender Factors	Not implemented
6.4.4	Provide Annual Gender Report of Project Activities and Accomplishments	Completed final draft of Gender Equity for Sustainable Watershed Management: First Report of Ridge to Reef Watershed (R2RW) Project Activities, 2000 to End of 2002
6.4.5	Support Additional Training to Enhance Gender Mainstreaming Within NEPA	Not implemented
6.4.6	With NEPA, Host “Gender and Environment” Symposium	Not implemented

**6.4.1 Conduct “Gender and Environment” Training With NEPA Staff**

Discussions commenced with NEPA and the Gender Specialist, but no firm plans were put in place before her departure.

**6.4.2 Incorporate Gender Checklist Reporting into NEPA Reporting Mechanisms**

This activity was not implemented as planned during the third year of the project.

**6.4.3 Revise Grant Fund Application to Include Gender Factors**

This activity was not completed as planned during the third year of the project. However, gender concerns are systematically discussed in review of grant applications.

**6.4.4 Provide Annual Gender Report or Project Activities and Accomplishments**

Completed final draft of “Gender Equity for Sustainable Watershed Management: First Report of Ridge to Reef Watershed (R2RW) Project Activities, 2000 to End of 2002” including sections on Training Activities - Sensitizing Members of the Local Watershed Management Committees and Project Accomplishments to Date. The key findings and conclusions of the document are not presented in this report pending comprehensive review and finalization of the document.

**6.4.5 Support Additional Training to Enhance Gender Mainstreaming Within NEPA**

This activity was not implemented as planned during the third year of the project.

**6.4.6 With NEPA, Host “Gender and Environment” Symposium**

This activity was not implemented as planned during the third year of the project.

## 7. Project Management

Achievements related to Project Management during Project Year 3 are described in the following three sections.

7.1	<i>Grant Fund Management</i>
7.2	<i>Staffing</i>
7.3	<i>Management Arrangements</i>

### 7.1 Grant Fund Management

The objectives of this set of activities were to implement a community level Watershed Grants Program that would encourage greater involvement and participation of local residents in watershed improvement activities.

Work Plan Activity	Activity Description	Achievements During Project Year 3
<b>7.1</b>	<b>Grant Fund Management</b>	
7.1.1	Screening Grant Applications for Gender Considerations	Gender checklist tested by WMCs in assessing grant applications
7.1.2	Approval of Grant Applications by WMCs	Fourteen applications approved under leadership of WMCs
7.1.3	Incorporate MOUs in Grant Agreements	Each grant agreement contains specific language on roles and responsibilities
7.1.4	Implement 10 Grants	Eighteen grant applications received during the year, of which 14 were approved
7.1.5	Close Supervision of Funds, Compliance, and Completion	Regular administrative monitoring of all grants done by COP, Grants Assistant, and Watershed Grants Officers of SWB
7.1.6	Regular Program Monitoring by WGOs, WMCs, and R2RW	R2RW Technical Staff, and WMC task forces monitored grant implementation on regular basis
7.1.7	Provide STTA to Grant Clusters	Regularly provided by R2RW technical staff to each grantee

#### 7.1.1 Screening Grant Applications for Gender Considerations

A checklist for assessing gender considerations in new grant applications was prepared by the PAPAS during the year. The checklist asks reviewers to look at questions such as:

- Who is contributing to deteriorating environmental conditions?
- Who is most responsible for the degradation of the specific resource in question and why?
- Are these persons community members or outsiders?
- Who is contributing to the resolution of environmental problems?
- Who are the victims (who suffer) from environment damage?

The checklist has proven useful to WMC Grant Selection Committees in reviewing grant applications and making determinations on whether to recommend grants for approval.

### **7.1.2 Approval of Grant Applications by WMCs**

During the year, WMCs took a lead role in recommending for approval 14 new grant applications. Both the GRWMC and the RGWMC Committees have delegated review of grant applications to Grant Selection Committees, which are subsets of the Executive Committees of both groups. These Grant Approval Committees have met regularly to consider, analyze and debate the merits of grant applications. The Grant Selection Committees assessed applications in terms of grant feasibility, sustainability, approach and impact of proposals.

### **7.1.3 Incorporate MOUs in Grant Agreements**

Each grant agreement recommended by the WMCs typically contained specific conditions or factors to be addressed during grant implementation. These conditions would then be incorporated into a special section of the Grant Agreement signed by the R2RW Project and the Community that would specify the exact roles and responsibilities of the parties.

### **7.1.4 Implement 10 Grants**

The goal of implementing 10 new grants was exceeded as 14 grants were approved and implemented during the year (Appendix 22). During the third year of the R2RW, 5 new grants were approved and implemented in the Great River Watershed:

- Rushea Hot Pepper Improvement
- Cedar Grove Hot Pepper Improvement
- Hermitage Honey
- Content Water and Sanitation
- Mafoota Car Wash and Laundry

During the same time period 9 new grants were approved and implemented in the Rio Grande Watershed:

- Millbank Sanitation
- Moore Town Water Supply Improvement
- Rock Hall Reforestation and Crop Production Project
- Industry and Agroforestry Project Soil Conservation
- Coopers Hill Soil Conservation and Agroforestry Project
- Comfort Castle Water Supply Project
- Cornwall Barracks Water Supply Project
- CASE: Constructing Demonstration Plots of Sustainable Environmental Practices
- JCDDT: Community Education in the Upper Rio Grande

### **7.1.5 Close Supervision of Funds, Compliance, and Completion**

R2RW staff performed regular monitoring of all grants being implemented in terms of compliance with grant terms and conditions, and adherence to applicable regulations. The Chief of Party oversaw all project expenditures directly and ensured that all items to be procured were per the grant application. R2RW technical staff signed off on all invoices for expenditures under the grants prior to being submitted to the COP for approval. The R2RW Grants Assistant kept detailed records of all requests for disbursements under the grants, and maintained a complete grant expenditure report for each grant, and prepared a monthly account summary for all grants.

The grant completion dates were monitored, and extensions granted in cases where implementation took longer than expected.

### **7.1.6 Regular Program Monitoring by WGOs, WMCs, and R2RW**

The R2RW Technical Staff was directly involved with the programmatic monitoring and implementation of grants. The Sanitation Management Specialist along with the Construction supervisor directly supervised all water and sanitation related grants, while the Watershed Management Specialist along with the Agronomic Specialist directly supervised all agricultural related grants. Grantees were visited on a weekly basis during the most active phases of implementation.

### **7.1.7 Provide STTA to Grant Clusters**

One of the limiting factors in grant approval has been the need to provide additional technical assistance to communities in articulating the work plans and detailed budgets that would facilitate grant implementation. The experience of the Watershed Grants Program has shown that communities are very good at identifying their priorities, and conceptualizing the rationale and objectives of grant applications, however, they need assistance in developing feasible activities and realistic budgets to carry them out. R2RW technical advisors provided assistance in the final designs of the agricultural interventions in Rushea, Cedar Grove, Hermitage, Rock Hall, Industry and Coopers Hill, as well as the water and sanitation interventions in Millbank, Moore Town, Content and Mafoota. In addition, members of the GRWMC and RGWMC task forces have become directly involved in the design and implementation of projects, and have even started to incorporate them into their respective work plans. Examples of government agencies participation include the involvement of RADA in the Rushea and Cedar Grove Scotch Bonnet pepper programs, RADA and Forestry Department in the Plant A Tree Program, RADA in the agro forestry projects in the Rio Grande, the National Water Commission in the water supply projects, constructed wetlands demonstrations and the Green Village Program.

## **7.2 Staffing**

The objectives of this set of activities were to ensure that the Project was fully staffed, and actively engaged in carrying out activities under the Annual Work Plan.

<b>Work Plan Activity</b>	<b>Activity Description</b>	<b>Achievements During Project Year 3</b>
<b>7.2</b>	<b>Staffing</b>	
7.2.1	Fill the WMS Position	Completed early in the Project Year
7.2.2	More Aggressive Use of STTA	Significantly increased teaming of international with Jamaican specialist for highest possible outputs
7.2.3	Rationalize ASC Staffing Requirements	Completed based on proposal from mid-term Internal Review

### **7.2.1 Fill the WMS Position**

Watershed Management Specialist was hired early in the Project Year and has made significant progress in supporting and directing field activities and meeting other Project documentation and reporting requirements.

The PAPAS resigned her position in May 2003. The Internal Review completed in June recommended that this position, originally held by Maria Protz until her departure, be converted from a consultancy to a full time position. A revised job description was written, the position advertised, a short list developed, and three candidates interviewed in August 2003. Ms. Sonja Harris joined the Team in September 2003 with a solid background in participatory development processes, a good working knowledge of the partners and target areas of the Project. She is a leading expert on gender issues in Jamaica.

### **7.2.2 More Aggressive Use of STTA**

The Project significantly increased its use of both Jamaican and international TA. It is committed in future to teaming international specialists with Jamaican professionals in order to build the overall capacity to deliver highest possible quality assistance.

### **7.2.3 Rationalize ASC Staffing Requirements**

In January of 2003, the COP drafted job descriptions for the administrative positions that would be required after the closeout of the CWIP Project in June 2003. The decision was taken to close out the Administrative Support Center, and to continue 5 of the 7 original positions in the ASC. The Internal Review recommended a new staffing organogram in June 2003, and this was adapted and finalized in August 2003. The new staffing structure reduced the number of individuals directly reporting to the COP, delegated functional responsibility to the four full time technical staff, and described reporting relationships among all staff. The new staff organogram is attached as Appendix 23.

## **7.3 Project Management**

The objectives of this set of activities were to provide timely, responsive and effective management of project resources so as to accomplish project objectives.

<b>Work Plan Activity</b>	<b>Activity Description</b>	<b>Achievements During Project Year 3</b>
<b>7.3</b>	<b>Project Management</b>	
7.3.1	Update Contract Database	Completed and updated regularly by assigned Project staff
7.3.2	Use Text Messaging to Announce Meetings Over Cell Phones	Completed
7.3.3	NEPA Coordination Meetings	The COP regularly attended the bi-weekly NEPA Senior Management Meeting
7.3.4	R2RW Team Meetings	Administrative and technical team meetings were held regularly throughout the year
7.3.5	Project Implementation Committee Meetings	Meetings held monthly
7.3.6	Interagency Steering Committee	One meeting was held in March 2003
7.3.7	Monitor CWIP Close-out	Flexibly supported and adapted to the closing out of the contract for CWIP I
7.3.8	Conduct Mid-term Assessment of R2RW	Assessment conducted, results vetted with NEPA and USAID and acted upon by the team
7.3.9	ASC Senior Management Team	Weekly meetings held



### **7.3.1 Update Contact Database**

The Administrative Assistant updated this database regularly. It contains detailed information on some 500 individuals, broken out into more than 20 sub lists, who regularly participate in various aspects of the R2RW Project. It has proved extremely useful to partners, Project staff, and technical assistance consultants.

### **7.3.2 Use Text Messaging to Announce Meetings Over Cell Phones**

Given the prevalence of cell phone usage in Jamaica, an idea that came from stakeholders was to use text messages over cell phones to announce and remind persons of upcoming meetings. The Administrative Assistant was able to utilize information from the contact database to send messages over email to the cell phones of persons invited to meetings. This has proved very successful, and is much appreciated by Project partners.

### **7.3.3 NEPA Coordination Meeting**

The COP regularly attended the bi-weekly NEPA Senior Management Meeting. 20 meetings were held during the year, and the COP attended 16 of these meetings. The meetings are under the direction of the NEPA Chief Executive Officer, and consists of Division Heads, and project managers.

### **7.3.4 R2RW Team Meetings**

The core R2RW technical team met on a monthly basis to assess recent project activities, discuss current issues of project implementation, and plan for activities upcoming in the near future. Representatives from NEPA and USAID regularly attended these meetings.

### **7.3.5 Project Implementation Committee Meetings**

The Project Implementation Committee (PIC) met the first Wednesday of every month to update the clients on project progress, address issues that need approval or resolution, incorporate client concerns into project implementation and to provide overall project management guidance. The PIC meetings included the USAID Project Management Specialist, the Director of the Conservation Division of NEPA, the Manager of the SWB/NEPA, the Projects Manager from PPPCD/NEPA, and the R2RW COP.

The Project Implementation Committee was restructured in August 2003 to incorporate the other USAID SO2 initiatives of the CWIP II Project and the EAST Projects. The new PIC met in August and September 2003 to address issues that need approval, incorporate client concerns into project implementation and to foster coordination among the three projects.

### **7.3.6 Interagency Steering Committee**

The ISC consists of a broad membership of the wider GOJ agencies impacting on watershed management including NEPA, Forestry Department, Ministry of Agriculture, Ministry of Health, National Water Commission, Ministry of Health and Ministry of Tourism, among others. A meeting of the ISC was held in March 2003 to review Semi-Annual Reports, progress on the Performance Monitoring Plans, and the Third Annual Work Plan.

### **7.3.7 Monitor CWIP Close-out**

The CWIP Project was officially closed in June 2003. R2RW Staff monitored the implementation of the CWIP close out plan, and worked to incorporate as many of the ASC positions into the

R2RW Project as dictated by staffing needs. Office space was rationalized after the CWIP closeout, and equipment secured and stored for later use.

The CWIP II Project was signed in August and implementation began in September 2003. Although there are no plans to re-institute the Administrative Support Center, certain administrative staff will be shared between CWIP II and R2RW.

### **7.3.8 Conduct Mid-term Assessment of R2RW**

R2RW took a significant step during Project Year 3 by supporting a mid-point Project review by external consultants. Two international home-office ARD staff worked with a Jamaican specialist to conduct this Internal Mid-term Performance Assessment of R2RW to validate that Project actions and management continue to reflect and advance toward programmatic priorities of NEPA and USAID. The resulting recommendations were presented to Project staff and the key clients, USAID/Jamaica and NEPA. The Chief of Party participated in the development of time lines to address each recommendation, and he led actions to address each recommendation. The time line is presented in Appendix 19.

### **7.3.9 ASC Senior Management Team**

Weekly meetings of the R2RW COP, the CWIP COP and the Director of Administration of the ASC continued until the end of the CWIP Project in June 2003. Topics covered during these meetings include logistical support requirements, administrative issues, staff coordination, financial updates, and project management concerns. In August 2003, the COP commenced weekly meetings of all full time technical and administrative staff. These meetings are held for 15 minutes every Monday morning, and are centered around the Weekly list that is produced detailing scheduled meetings and events, and important tasks to be accomplished.

## 8. Performance Indicators

The R2RW contributed to the following USAID's SO2 Indicators established for the following Intermediate Results:

1. **IR 1 - Increased adoption of environmentally sound practices**, by:
  - Number of improved practices by target populations.
  - Number of private sector entities practicing or supporting environmentally friendly practices.
  - Number of organizations demonstrating tangible results to beneficiaries in the field.
  - Number of initiatives in place to support compliance with and enforcement of environmental regulations.
  - Number of partners implementing gender equity considerations.
  - Number of public awareness activities conducted.
2. **IR 2 - Adoption of policies for improved environmental management**, through:
  - Number of new or revised regulations and policies drafted/developed
  - Increased compliance and enforcement of environmental regulations in targeted areas.
  - Number of organizations participating in R2RW supported watershed management coordination activities.
3. **IR 2.1 - Effective promulgation and enforcement of environmental regulations**, through:
  - Number of new or revised regulations and policies drafted/developed
  - Increased compliance and enforcement of environmental regulations in targeted areas.
4. **IR 2.2.1 - Increased capacity of key GOJ agencies**, by:
  - Number of organizations participating in R2RW supported watershed management coordination activities.

## Contract Objective (CO) Indicators

### 8.1 Overall Project

Performance Indicator	Indicator Definition And Unit of Measure	Baseline Data		Project Year 2		Project Year 3		Comments	Support to SO2
		Year	Actual	Target	Actual	Target	Actual		
<b>Contract Objective: Natural resources under improved and sustainable management in identified watersheds</b>									
Percentage of land under sustainable management in targeted areas	<p><u>Sustainable Management:</u> Targeted appropriate practices and sustainable resource utilization principles applied</p> <p><u>Targeted Areas:</u> Geographic areas identified in work statement and prioritized for intervention following rapid reconnaissance and establishment of baseline data</p> <p><u>Unit:</u> Cumulative numerical</p>	2000	0	10	15	20	45	<p>20 Communities were targeted for project interventions. Of these, targeted appropriate practices and sustainable resource utilization principles were applied in 5 communities or 25% of the targeted area.</p> <ol style="list-style-type: none"> <li>1. Retrieve: sanitation systems and goats</li> <li>2. Pisgah: sanitation system</li> <li>3. Catadupa: Tree planting activities</li> <li>4. Millbank Sanitation Project</li> <li>5. Rushea: Hot Pepper production</li> <li>6. Bethel Town: Hot Pepper and Honey</li> <li>7. Coopers Hill: Agroforestry</li> <li>8. Industry: Agroforestry</li> <li>9. Rock Hall: Agroforestry</li> </ol>	SO2 Indicator

**8.2 Component 1 Targets**

Performance Indicator	Indicator Definition And Unit of Measure	Baseline Data		Project Year 2		Project Year 3		Comments	Support to SO2
		Year	Actual	Target	Actual	Target	Actual		
<b>Contract Result: Through targeted, sustainable environmental practices by resource users identified and promoted</b>									
Number of improved practices adopted by target populations	<p><u>Improved Practices Adopted:</u> Activities that improve environmental conditions and sustain resource base</p> <p><u>Unit:</u> Number of practices introduced that are applied and sustained by land managers. Cumulative numerical</p>	2000	0	6	6	10	10	<p>Practices were introduced to date. These are:</p> <ol style="list-style-type: none"> <li>1. Dwarf June plum</li> <li>2. Barbados cherries</li> <li>3. New varieties of bananas and plantains</li> <li>4. Constructed wetlands for purifying septic effluents</li> <li>5. Macuuna seeds for leguminous ground cover</li> <li>6. Intensive goat management systems</li> <li>7. Planting timber trees under the Plant A Tree Program</li> <li>8. Honey production</li> <li>9. Hot pepper production</li> <li>10. Vegetative barriers along contours</li> </ol>	IR 1

Performance Indicator	Indicator Definition And Unit of Measure	Baseline Data		Project Year 2		Project Year 3		Comments	Support to SO2
		Year	Actual	Target	Actual	Target	Actual		
<b>Contract Result: Through targeted, sustainable environmental practices by resource users identified and promoted (cont'd)</b>									
Number of organizations demonstrating tangible results to beneficiaries in the field	<p><u>Organization:</u> formalized group operating in the field</p> <p><u>Results:</u> Provision of technical, program and financial services</p> <p><u>Unit:</u> Cumulative numerical</p>	2000	0	3	5	5	8	<ol style="list-style-type: none"> <li>1. Sanitation Support Unit with demonstration project in Retrieve</li> <li>2. RADA with new crop technologies.</li> <li>3. JAS with marketing projects</li> <li>4. Goat Breeders Association with new goat management systems</li> <li>5. Farmer training by JOAM in organic farming</li> <li>6. Montego Bay Marine Park delivering public awareness programs with the Action Boyz</li> <li>7. Forestry Department with Plant A Tree Program</li> <li>8. NSWMA with Community Clean-ups</li> </ol>	IR 1.1

Performance Indicator	Indicator Definition And Unit of Measure	Baseline Data		Project Year 2		Project Year 3		Comments	Support to SO2
		Year	Actual	Target	Actual	Target	Actual		
<b>Contract Result: Through targeted, sustainable environmental practices by resource users identified and promoted (cont'd)</b>									
Number of Private Sector entities practicing or supporting environmentally friendly practices	Private Sector: Profit-making entities whether small, medium or large  <u>Unit:</u> cumulative numerical	2000	0	4	3	6	7	Work was done with 7 entities:  1. Farmers in Catadupa with trees  2. Farmers in Rushea and Cedar Grove with hot pepper.  3. Goat Breeders Association  4. Private sector support for Great River Green Village program prizes  5. Sandals in Mafoota and participation in public awareness techniques  6. Round Hill Hotel in Cocoon Castle  7. Farmers in Coopers Hill, Industry and Rock Hall with agroforestry	IR 1 IR 1.2

### 8.3 Component 2 Targets

Performance Indicator	Indicator Definition And Unit of Measure	Baseline Data		Project Year 2		Project Year 3		Comments	Support to SO2
		Year	Actual	Target	Actual	Target	Actual		
<b>Component 2 Result: Incentives for and obstacles to enforcement of targeted environmental regulations identified and solutions supported</b>									
Number of new or revised regulations and policies drafted/developed	<u>New or revised regulations and policies:</u> Regulations and policies developed that promote sustainable environmental practices.  <u>Unit:</u> Cumulative numerical	2000	0	1	1	1	1	The target of <b>one</b> new or revised regulation and policy for years 1 -3 was met with the Draft Watershed Policy reviewed in year 1. The draft policy has recently been updated to include omissions such as lack of graphics, action plan, and mention of LWMCs. It is expected that a revision of the Watershed Protection Act will follow the updated Watershed Policy in Year 3.	IR 2 IR 2.1
Number of incentives in place to support compliance with and enforcement of environmental regulations	<u>Incentives:</u> payment or concessions in place promoting sustainable environmental practices and resource use  <u>Unit:</u> Cumulative numerical	2000	0	4	0	6	4	<ol style="list-style-type: none"> <li>1. Incentives Working Group of the NIWMC systematically pursuing implementation of incentives</li> <li>2. Great River Green Village Program</li> <li>3. Plant A Tree Program</li> <li>4. Public Awareness to inspire community Clean-ups in the River Action Program</li> </ol>	IR 1.2 IR 2.1



Performance Indicator	Indicator Definition And Unit of Measure	Baseline Data		Project Year 2		Project Year 3		Comments	Support to SO2
		Year	Actual	Target	Actual	Target	Actual		
<b>Component 2 Result: Incentives for and obstacles to enforcement of targeted environmental regulations identified and solutions supported</b>									
Increased compliance and enforcement of environmental regulations in targeted areas	<p><u>Increase Compliance and Enforcement:</u> Number of activities designed to increase knowledge and understanding of environmental laws</p> <p><u>Unit:</u> cumulative total</p> <p>Note: The definition was changed to quantify measurable activities</p>	2000	0	5	8	8	13	<p>Thirteen activities have been conducted to date. These are:</p> <ul style="list-style-type: none"> <li>▪ Study of Policy and Legislative Framework</li> <li>▪ Meeting/Workshop of GRW Task Force to review draft Policy and Legislative Framework</li> <li>▪ Meeting of Legal and Policy Experts to review draft Policy and Legislative Framework</li> <li>▪ Joint input of ENACT and R2R into the preparation of a Pocket-sized field guide, on Jamaica's environmental laws, geared towards supporting enforcement officers in the field</li> <li>▪ Input into the Portland Multi-Agency Group on C&amp;E, and lead-role in the establishment of a Portland C&amp;E Task Force</li> <li>▪ Four Meetings of the GRWMC C&amp;E Task Force. Meetings are used as mini-workshops</li> <li>▪ Joint support by ENACT and R2RW for a 3-Day "Training of Trainers Workshop" for NEPA's staff</li> <li>▪ Three Focus Group Meetings (Kingston, Montego Bay, and Port Antonio), to review draft of a review of "Incentives to encourage Private Sector involvement in watershed management"</li> </ul>	IR 2 IR 2.1

Performance Indicator	Indicator Definition And Unit of Measure	Baseline Data		Project Year 2		Project Year 3		Comments	Support to SO2
		Year	Actual	Target	Actual	Target	Actual		
<b>Component 2 Result: Incentives for and obstacles to enforcement of targeted environmental regulations identified and solutions supported (cont'd)</b>									
								<ul style="list-style-type: none"> <li>▪ Design of posters to educate the public about C&amp;E Issues</li> <li>▪ Production of scientific study of causes of erosion in St. Margaret's Bay</li> <li>▪ Brochures drafted</li> <li>▪ Video or Jingle being produced</li> <li>▪ 3 symposia to sensitize judiciary on environmental Laws and regulations</li> </ul>	

**8.4 Component 3**

Performance Indicator	Indicator Definition And Unit of Measure	Baseline Data		Project Year 2		Project Year 3		Comments	Support to SO2
		Year	Actual	Target	Actual	Target	Actual		
<b>Component 3 Result: Capacity of Jamaican Government Agencies, International donors, and private-sector and civil society organizations to implement effective watershed management programs enhanced</b>									
No. of organizations participating in R2RW supported WM coordination activities	<p><u>Organization:</u> Group or institution</p> <p><u>Participating:</u> Acquiring and sharing information at the local or national level</p> <p><u>Unit:</u> Cumulative total</p>	2000	0	6	16	8	20	<ol style="list-style-type: none"> <li>1. Sustainable Watersheds Branch</li> <li>2. Min. of Land and Environment</li> <li>3. Rural Agricultural Dev. Authority</li> <li>4. Forestry Department</li> <li>5. National Water Commission</li> <li>6. Public Health Department</li> <li>7. Social Development Commission</li> <li>8. Sanitation Support Unit</li> <li>9. Montego Bay Marine Park</li> <li>10. Local Authorities (Parish Councils)</li> <li>11. Water Resources Authority</li> <li>12. Sandals Hotel</li> <li>13. Round Hill Hotel</li> <li>14. Montpelier Citrus Company</li> <li>15. Portland Environment Protection Association</li> <li>16. Valley Hikes</li> <li>17. GRWMC</li> <li>18. RGWMC</li> <li>19. CBO's</li> <li>20. 4H Clubs</li> </ol>	IR 2 IR 2.2

## 8.5 Cross-Cutting Activities

Performance Indicator	Indicator Definition And Unit of Measure	Baseline Data		Project Year 2		Project Year 3		Comments	Support to SO2
		Year	Actual	Target	Actual	Target	Actual		
<b>Cross-Cutting Activities</b>									
<p><b>Gender Equity Strategy</b></p> <p>Number of partners implementing gender equity considerations</p>	<p><u>Gender Equity</u>: fairness and justice among men, women and special groups in accessing project benefits, participating in decision making and in undertaking project responsibilities</p> <p><u>Unit</u>: Numerical annual totals</p> <p>Note: Definition expanded to include “special groups” based upon stakeholders input.</p>	2000	0	6	3	8	9	<ol style="list-style-type: none"> <li>1. Gender training materials produced for the GRWMC</li> <li>2. Case study materials produced for gender training of the RGWMC</li> <li>3. Report of the Gender for the GRWMC</li> <li>4. Paper for the CWWA on R2RW's gender training approach</li> <li>5. Revision of the Grant Fund to include gender equity</li> <li>6. Report of Gender training of the RGWMC (to be completed in November)</li> <li>7. Overall gender report of project activities (to be completed after the training of the RGWMC – in progress).</li> <li>8. Draft checklist completed and in use</li> <li>9. Gender disaggregated data included in the KAP survey and is being used to guide the development of public awareness strategies.</li> </ol>	<p>IR 1</p> <p>IR 1.1</p> <p>IR 1.2</p>

Performance Indicator	Indicator Definition And Unit of Measure	Baseline Data		Project Year 2		Project Year 3		Comments	Support to SO2
		Year	Actual	Target	Actual	Target	Actual		
<b>Grant Fund</b>  Number and value of grants approved and implemented that promote adoption of sound environmental practices	<u>Environmental practices adopted:</u> activities that improve environmental conditions  <u>Unit:</u> Cumulative number and value (US\$ thousands)	2000	0	5 \$150	3 \$40	10 \$300	16 \$260	The following grants were approved:  1. Water harvesting and waste water disposal at Retrieve All Age School  2. Water harvesting and waste water disposal at Pisgah School  3. Millbank Sanitation  4. Moore Town Water Supply Improvement  5. Rushea Hot Pepper Production  6. Cedar Grove Hot Pepper production  7. Hermitage Honey Production  8. Content Water supply and sanitation  9. Mafoota Car Wash and Laundry  10. Rock Hall Agroforestry  11. Industry Agroforestry  12. Coopers Hill Agroforestry  13. Comfort Castle Water Supply  14. Cornwall Barracks Water Supply  15. CASE Demonstration Project  16. JCDT Community Education in the Upper Rio Grande	S02

Performance Indicator	Indicator Definition And Unit of Measure	Baseline Data		Project Year 2		Project Year 3		Comments	Support to SO2
		Year	Actual	Target	Actual	Target	Actual		
<b>Cross-Cutting Activities (cont'd)</b>									
<b>Public Awareness</b>  Number of public awareness activities conducted	Public Awareness: formal and non-formal education, information sessions, extension and environmental education  <u>Unit:</u> Numerical annual totals	<b>2000</b>	<b>0</b>	<b>8</b>	<b>25</b>	<b>12</b>	<b>28</b>	<ol style="list-style-type: none"> <li>1. W&amp;S Tour of the GRW Jan. 03.</li> <li>2. Video training for PATF members in the RGW</li> <li>3. GRW video promoted</li> <li>4. Monthly GRW PATF meetings held</li> <li>5. Three newsletters produced.</li> <li>6. Training in RGW on writing of effective press releases.</li> <li>7. 14 News releases produced.</li> <li>8. RGW public awareness working group active.</li> <li>9. Mascot competition completed.</li> <li>10. Posters for C&amp;E produced and launched</li> <li>11. Follow-up activities to KAP Workshop</li> <li>12. Video for "It Haffi Legal" Campaign produced</li> <li>13. Video of Constructed Wetlands Technology</li> <li>14. Stewardship/leadership training course being developed.</li> </ol>	IR 1

Performance Indicator	Indicator Definition And Unit of Measure	Baseline Data		Project Year 2		Project Year 3		Comments	Support to SO2
		Year	Actual	Target	Actual	Target	Actual		
								<ul style="list-style-type: none"> <li>15. Implementation of River Action Program</li> <li>16. "Enviro" kits drafted</li> <li>17. Great River Green Village Program launched</li> <li>18. Youth and Environment Forum</li> <li>19. Magistrates symposia series</li> <li>20. Pocket Guide on environmental laws produced</li> <li>21. World Wetlands Day</li> <li>22. World Environment Day Exposition</li> <li>23. Denbigh Show</li> <li>24. Montpelier Easter Show Wetland Training for educators in the RGW and GRW</li> <li>25. RGWMC logo developed</li> <li>26. Wood and Water Day exposition</li> <li>27. Retrieve Environmental Fair</li> <li>28. Content, St. James Environmental Gathering</li> </ul>	

## 9. Annual Period Performance Benchmarks

This section provides an update of the performance benchmarks that were previously proposed for the 3<sup>rd</sup> year of R2RW. Individual tasks in the TAWP and their percentage completed can be viewed in the in Appendix 24.

### **Component 1A: Sustainable Environmental Practices in the Great River Watershed *GRWMC and Task Forces Functional & Addressing Priority Issues in GRW***

The GRWMC continues to act as a dynamic mechanism that brings together the State Agencies with NGOs and communities throughout the GRW. The first Annual General Meeting was held on November 2002, and the second in October 2003. GRWMC membership expanded during the year with Citizens Groups, Environmental Clubs, and Police joining the active membership of representatives from State Agencies, Private Sector and Community based organizations. The GRWMC held 3 regular quarterly meetings at which reports were taken on the status of activities being implemented under the task forces. In addition the Executive Committee met regularly to deal with administrative issues, meeting planning and grant approvals.

Each of the four task forces made significant progress on the identification, design and oversight of implementation on more than 10 individual projects. The task forces each met on a quarterly basis, and the W&S and the P&M task force conducted a number of field meetings. Highlights of the work of the task forces is as follows:

**Production and Marketing:** Implemented field projects to produce scotch bonnet peppers in an environmentally friendly way in two communities; expand honey production in Bethel Town as a way to encourage conservation; expand production improved goat stock for income and pasture management; plant trees in eight communities for watershed conservation; and train farmers in more environmentally sound practices for vegetables, bananas, and pineapple.

**Water and Sanitation:** Continued to monitor constructed wetlands in Retrieve, and install new systems at the Pisgah All-Age School and the Content Community Center to improve sanitation practices of residents and protection of water sources from sewage contamination from sewage. Planned and began construction of a car wash and laundry facility in Mafoota to provide an alternative to washing directly in the river and provide for adequate wastewater disposal. Continued to monitor the implementation of a comprehensive water quality monitoring program with the University of the West Indies of 15 parameters at 18 sites.

**Public Awareness:** Launched the Great River Green Village Program on Earth Day 2003 with U.S. Ambassador Sue Cobb. More than a dozen communities have applied for the competition, and the project oversight committee made initial visits. Implemented the River Action Program under contract with the Montego Bay Marine Park to educate residents of 7 communities in the central and upper GRW through skits in local dialect to highlight environmental issues. Jointly monitored the production of posters for C&E, and participated in focus group testing to target messages at semi literate audiences. Participated in fairs and expositions to demonstrate technologies and promote the Ridge to Reef initiative. At one such fair, the Montpelier Agricultural Show held on Easter Monday, more than 1500 persons witnessed a performance by the Action Boyz.

**Compliance and Enforcement:** Conducted a study on the resources of agencies in the GRW involved in C&E, and made recommendations on how to improve coordination and sharing of resources among Agencies. Jointly monitored the production of posters for C&E, and participated in focus group testing to target messages at semi literate audiences. The task force also monitored national level developments including the Symposia to sensitize magistrates on



environmental laws and the production of the Pocket Guide to Environmental Laws of Jamaica. Produced an Action Plan for activities of the task force to the end of R2RW.

### ***Three Projects Implemented by the Production & Marketing Task Force***

The Production and Marketing Task Force continued to work on a number of projects that address critical issues in the GRW. Three projects were implemented during the period under review:

- Cedar Grove Hot Pepper Production Project - Cedar Grove District, Bethel Town, Westmoreland
- Rushea Hot Pepper Production Project - Rushea, Mt. Horeb, St. James
- Hermitage Honey Project - Hermitage, Bethel Town, Westmoreland

(i) and (ii) above emphasized environmentally friendly production practices for scotch bonnet pepper, sustainable agricultural practices and improved livelihoods. The objective of the third project is to increase honey production and in so doing promote the protection of tree cover (especially nectar producing trees).

### ***Three Projects Implemented by the Water & Sanitation Task Force***

The Water and Sanitation Task Force implemented the following projects during the period:

- Content Water Harvesting and Sanitation Project - Content, Hanover
- Mafoota Car Wash & Laundry Project - Mafoota District, Mt. Horeb, St. James
- Sanitation & Water Harvesting Project At Pisgah All Age School - Pisgah All Age School, Pisgah District, St. Elizabeth
- Water Quality Monitoring Program

The Content project effected improvements to the community centre serving Content and Milestown communities. Improvements included construction of bathroom facilities, demonstration of constructed wetland technology and improved water supply through rainwater harvesting and storage. Implementation will be completed in the 1<sup>st</sup> Quarter of Year 4.

The Mafoota Car Wash & Laundry Project is designed to reduce pollution of the Great River through the construction of a community car wash and laundry facility adjacent to Mafoota Community Centre. Implementation is expected to be completed in the 2<sup>nd</sup> Quarter of Year 4.

The project at Pisgah was completed and comprised replacement of pit toilets with flush-toilets, demonstration of constructed wetland technology for improved sanitation and improved water supply through rainwater harvesting and storage.

Under the Water Quality Monitoring Program executed during the year, extensive water quality sampling and testing was completed. R2RW, the GRWMC and the WSTF are awaiting the detailed analysis of results and recommendations of the consultants.

### ***Community Stewardship Certification Program Launched***

The Green Village Program was developed by the GRWMC with particular leadership from the Public Awareness Task Force. The Green Village Award builds on programs of “Best Kept

Community” awards by recognizing and rewarding community groups who take steps to improve their neighborhoods through environmental activities such as recycling, composting, tree-planting, river clean-ups, solid waste management projects and public awareness events. Four categories of recognition have been created for communities that satisfy criteria to achieve bronze, silver, gold or levels of excellence in environmental stewardship. Winners will be announced December 11<sup>th</sup>, 2003. A panel of persons drawn from the public service and civil society will do judging. Qualifying communities will be recognized with road signs sponsored by the R2RW Project that welcome visitors by noting “**You are Entering a Great River Green Village**”

The Program was launched, by the special appearance of US Ambassador Cobb in the Great River watershed as part of her attendance at a program of activities on Earth Day.

### ***Plant-a-Tree Program and Public Awareness Campaign Implemented***

The Plant a Tree Program was established in the Great River to promote the establishment of tree cover with the planting of fruit and timber seedlings. Working closely with the Forestry Department and the Ministry of Agriculture Fruit tree Crop Project some 12,200 seedlings were distributed under the program throughout the year in several targeted communities of the GRW. The public awareness component of the program was supported by the PATF. Under the slogan “Putting Cedar back into Cedar Grove” cedar and other timber seedlings are targeted for Cedar Grove. Some 10,000 cedar and other seedlings will be established by Year 4 in Cedar Grove.

### ***Three Initiatives to Enhance Public Awareness of Priority Issues Implemented***

The Public Awareness Task Force of the GRWMC was active in the development and implementation of initiatives to enhance public awareness of priority issues in the Great River. Three initiatives implemented were as follows:

- Great River Green Village Program: This program was launched during a special appearance of US Ambassador Cobb in the Great River watershed as part of a Project-facilitated program of activities on Earth Day.
- River Action with the Action Boyz: Developed and supported multiple performances of River Action with the Action Boyz community skits in seven communities.
- Organized and supported “Great River Youth and Environment Conference 2003” in response to identified stakeholder needs.

Other Activities included:

- Production, distribution, and use in multiple fora of music video starring “Earth Defender” in support of the “It Haffi Legal Campaign”.
- Facilitated “Judicial Symposia” to initiate awareness-raising with resident magistrates, supreme court judges, and clerks of the court to improve enforcement of environmental regulations.
- Development of a logo for the GRWMC.
- Field tested, finalized, and distributed “Pocket Guide on Environmental Regulations in Jamaica”.
- Completed water quality monitoring program in the Great River and reported findings to the watershed community in various fora.

- Increased public awareness of watershed issues and successes via radio, newspapers, and the Internet on over 50 occasions.
- Published and disseminated brochure “A Profile of the Great River Watershed”

### **Component 1B: Sustainable Environmental Practices in the Rio Grande Watershed**

#### ***Watershed Monitoring Protocols (including water quality) Established and Implemented***

This activity was not completed. However, discussions on a collaborative effort for water quality monitoring are underway.

#### ***Two Workshops Held to Develop Secretarial Skills of Key Members of RGWMC and Task Forces***

Two one day workshops were held in January 2003 to provide training to a wide cross section of stakeholders involved in watershed management activities including the watershed conservation officers in Meeting Management, How to set Agendas and Minutes Taking.

These workshops were then reinforced in April 2003 by two half-day sessions with the following objectives:

- To review aspects of the Meeting Management training held on January 2003.
- To discuss the methods of recording minutes for the RGWMC and its Task Forces.
- To review the roles and responsibilities of secretaries of the RGWMC and its Task Forces.

#### ***RGW Management Plan & Strategy Developed***

The activity is follow-on to the ***GRW Strategic Plan for Sustainable Development of the GRW*** (renamed from GRW Management Plan & Strategy). The Draft GRW Strategic Plan was completed and additional time has been allowed to facilitate inputs from main clients NEPA and stakeholder interests. The RGW Plan has therefore been deferred to Year 4, and should benefit from the lessons learned from the process of completing the GRW Strategic Plan.

#### ***Three Projects Related to Land and Conservation Implemented***

Three new community agroforestry and soil conservation projects were designed and implementation commenced during the year. The projects are:

- Industry Soil Conservation and Agroforestry Project- Industry District, Portland
- Coopers Hill Soil Conservation and Agroforestry Project – Coopers Hill District, Portland
- Rock Hall Reforestation and Crop Production Project – Rock Hall, Portland

The three projects were designed to achieve the following:

- Improved watershed protection through the adoption of sustainable agricultural practices, and in particular improved land husbandry practices.
- Improved ground cover through the establishment of timber and fruit trees

- Sustainable livelihoods through the establishment of trees of economic importance and environmentally friendly crops and cropping practices.

Some 80 farmers benefited from the projects in the three targeted areas and over 10,000 timber and fruit tree seedlings were distributed. Tree planting, the establishment of vegetative barriers and general land husbandry practices was supported by promotional field days that benefited over 120 farmers.

### ***Three Water Harvesting and Sanitation Projects Completed***

Two new water and sanitation grant projects were started during the period. These are as follows:

- Millbank Sanitation Project seeks to construct 15 home toilet and septic systems using mini constructed wetlands.
- Moore Town Water Supply Improvement to upgrade the entombment at Bizzi Springs, and run approximately 3 miles of 4-inch pipeline.
- Three other water and sanitation projects were launched during the period: the Comfort Castle Water Supply Project; the Cornwall Barracks Water Supply, and the Demonstration of Sustainable Environmental Practices at CASE, but were not complete at the end of the reporting period.

### ***Three Public Awareness Training Sessions Completed***

A two-day introductory training session in video production skills was provided for six members of the RGWMC and also for one member of NEPA's public education and outreach branch. Two training sessions were also held to introduce members of the PAWG, RGWMC, and members of the Portland PDC, to the skills of writing effective news releases. More than 20 persons participated and four have successfully completed their assignments and will be awarded certificates.

### ***One Gender and the Environment Workshop Held***

An Introduction to Gender Equity Session was held in the RGW in November 2002. This was attended by 41 persons (21 females and 20 males). A training session on running meetings held in January 2003 also encouraged females in leadership roles, and males to undertake secretarial duties. The KAP Survey also produced a level of awareness of activities undertaken by women, men, and children, as well as activities that are influenced by culture, religion, and ancestry.

## **Component 2: Compliance and Enforcement**

### ***Activities to Sensitize Judges and other Court Personnel Developed and being Implemented***

The need to sensitize Supreme Court Judges, Resident Magistrates, and Clerks of the Courts on environmental issues was articulated at a meeting with the Chief Justice, the Director of Public Prosecution, the CEO of NEPA, NEPA Legal Services, and the ENACT and R2RW Projects. A Program was implemented through a Committee established by NEPA Legal Services with joint sponsorship from ENACT to conduct a 3 part Magistrates Series on the Environment. The workshops were as follows:

- Resident Magistrates            May 16-18, 2003
- Supreme Court Judges            June 13-15, 2003

- Clerks of the Courts July 4-6, 2003

The R2RW Project also sponsored an International Judge, who had experience in establishing an Environmental Court in Vermont, USA to make presentations and participate in the symposia for Resident Magistrates and Supreme Court Judges. An Intern (Law Student) was also contracted by R2RW to assist NEPA Legal Services with the planning of the symposia.

The attendance and participation were excellent, and based on the feedback to date the Judges have a significant different attitude to environmental issues. In one instance, where it is believed that the Courts would have normally settled for a low fine (J\$2,000), a J\$50,000 penalty was handed down. NEPA Legal Services is preparing a CD covering all the presentations for distribution to all participants, and will also be available on the Internet.

The Planning Committee was so impressed with the outcome that they have now identified the need to sensitize the Deputy Clerks of Courts, private lawyers, and lay magistrates. These are scheduled to take place during the Fourth Project Year.

### ***Training of Trainers Activity Completed, and Watershed-level Training Undertaken***

ENACT and R2RW also combined to undertake Training of Trainers Weekend Workshop for NEPA personnel. A follow-up One-Day Session was also held. The expectations were that those trained would train others in the Agency, in other Agencies, and at the watershed-level. This did not go according to plan as there were delays in the completion of the Pocket-sized Field-Guide, and the popular materials on C&E – both were to be resource materials for the training program. In addition, there were some latent views that the training was inadequate.

Research undertaken by ENACT and a National Group on C&E saw the need for the institutionalization of this training program. Jointly sponsored by ENACT and R2RW, and under the guidance of the National Committee chaired by NEPA's Compliance and Regional Services Director, MIND was asked to develop five structured courses for Compliance and Enforcement Officers and Supervisors, Senior Agencies Personnel, and Community Leaders, to be part of the delivery scheduled to commence in January 2004. Curricula, manuals, and teaching aids will be produced and courses planned for delivery by MIND. In addition, the materials will be available to any organization that wants to run the courses.

As identified by the Mid-Term Assessment Team, the strategy of working with both the supply side – the judiciary and other government officials responsible for providing enforcement of existing laws – and the demand side – creating awareness of environmental issues and laws – it is hoped that communities will self-enforce, demand enforcement from the relevant authorities, and have a supportive court system.

Recent events in Cambridge indicate that the strategy is in fact starting to show some successes. Cambridge in St. James was faced with frustration and apathy when R2RW toured that community in July 2003. Since then the Police Youth Club, with R2RW planned a “clean-up” in advance of the “Cleaning and Greening of Cambridge”. This attracted full community involvement.

### ***Pocketsize Field Guide Finalized, Distributed and in Active Usage***

The Knowledge, Attitudes, and Practices (KAP) Study undertaken by R2RW found that compliance and enforcement officers and leaders of communities lacked the basic awareness of the laws, regulations, and policies related to the environment. With this in mind, ENACT and R2RW supported NEPA to develop and print 1,000 copies of “*A Pocket Guide to Environmental and Planning Laws of Jamaica*”. The demand for this product from compliance and enforcement officers and senior agencies personnel, the JCF, Private Sector, and Community Leaders far out

those printed. R2RW was requested to print another 1,000 of this version in order to deal with the immediate demand. Some revision will take place under R2RW sponsorship, and a second version developed and printed.

*The Pocket Guide to Environmental and Planning Laws of Jamaica* will also be used in training programs being developed for compliance and enforcement officers and community leaders.

### ***Green Paper on Watershed Policy Reviewed and Re-Submitted***

The Green Paper "Towards a Watershed Policy for Jamaica" was taken through a consultative process, and recommendations integrated into a final draft that should have moved to a White Paper status. There has however been a delay in this process. During the period of delay, a number of areas for improvement have been identified. Beverley Pereira was contracted to review and update the draft Watershed Policy, present the results at a national workshop, and prepare the final Watershed Policy for presentation to the Ministry of Land and the Environment. A Focus Group was established, and Mrs. Pereira has presented a draft to that group. The revised draft, along with a paper on gaps, and role and responsibilities of agencies were presented at a meeting of all responsible agencies in June and verbal and written comments were incorporated into a final draft. Gaps identified in the June workshop were filled in September, and the Policy is now ready for submission to the Ministry of Land and the Environment.

### ***Popular Materials on Environmental Policies and Regulations Designed and Disseminated***

A set of 14 posters has been designed to educate the general public on a variety of environmental issues ranging from deforestation, to fires to proper sanitation. The content of the posters benefited from the input of a number of GOJ stakeholders including NEPA, Forestry Department, RADA, Ministry of Health, National Water Commission and USAID. Adequate quantities of posters ranging from 2 000 for "cutting trees without a license" to 6, 000 for "littering from cars" were printed for distribution to schools, libraries, police stations, partners organizations and communities across Jamaica. In addition, a music video to dramatize the "If Haffi Legal" music jingle was conceptualized, contracted to a local producer, planned and filmed in May 2003. Copies of the video were distributed to all television and cable stations in Jamaica, and has been used in expositions, fairs, and other public presentations to sensitize the public towards the poster campaign. These are also expected to be used in community level training programs. A 2004 calendar, as well as teaching aids are to be developed from these posters.

### ***Compliance and Enforcement Activities Implemented by WMCs and Task Forces in GRW and RGW***

R2R continue to work with the Compliance and Enforcement Task Force of the GRWMC, and the Portland Compliance and Enforcement Task Force to implement Component 2 activities. There were regular quarterly meetings of both task forces, along with meetings of the Executives to monitor activities in between meetings.

At the Great River Watershed level the C&E Task Force developed a Work plan, using a participatory workshop methodology. Areas prioritized, and being implemented are supporting activities, and assisting in building stronger governance systems in communities that should lead to greater compliance and enforcement to environmental laws; implement public awareness activities to create greater understanding of environmental laws at the community level developed; and support agencies involved in enforcement of environmental laws.

A Mini-Workshop held by the Task Force prioritized the coordination of agencies involved in C&E, cleaning and greening hotspots, and coordinated with other Task Forces to encourage best

practices. Leon Hopkins completed a review of State, Private Sector, Civil Society, and Community Organizations involved in Compliance and Enforcement in the Great River Watershed.

The C&E Task Force participated in the Youth and Environment Conference which was a huge success. A total of 88 participants were present from over 35 organizations and clubs. Various speakers enlightened the participants about environmental laws, biodiversity, poverty and the environment. Numerous exhibits were on display by major environmental agencies. The conference was aired on CVM-TV, TVJ, Hot 102 FM, and Power 106 FM. Based on the good work done by Antonio Buddington with the Youth and Environment Conference, his contract was extended by a month to work with the C&E Task Force.

The Task Force is working with the SDC and proposed working with the Plant-A-Tree Project to assist with the issue of land slippage that is taking place in the Catskins area, where two houses are in danger.

In Portland, arising from concerns by citizens of St. Margaret's Bay, R2RW commissioned a study by Professor Ted Robinson of UWI. The draft report was prepared and a presentation made in St. Margaret's Bay Community on May 18, 2003. The study looked at historical aerial photographs that documented erosion, river changes, and shoreline changes over the past 50 years. Erosion is greatly affected by major storms and passing hurricanes, as well poor soil conservation practices in the hills, and sand quarrying operations on several sections of the Rio Grande.

The study attempted to bring balanced information to the conflicts between mining and tourism interests on the Rio Grande. A user-friendlier version was prepared and distributed to the community. The Director of Mines Monitoring Unit in the MLE called a meeting of State Agencies involved in the Rio Grande. R2RW is providing technical assistance to help establish the roles and responsibilities of these agencies.

A Mines Monitoring Committee was established during a meeting of the Portland Compliance and Enforcement Task Force. This Committee will relate to the Mines Monitoring Unit of the MLE, and will assist with monitoring the terms and conditions under which licences are issued for quarrying in the parish.

### **Component 3: Institutional Strengthening**

#### ***Community Stewardship Program Implemented***

The Great River Green Village Program was inspired by meetings of the GR Public Awareness Task Force to encourage environmental stewardship and the adoption of better environmental practices through all watershed communities. Building on the tradition of the "Best Kept" community awards of the past, the program seeks to enhance local governance through cooperation between communities, state agencies, NGOs and the private sector and to give recognition to those communities that qualify for Bronze, Silver and Gold level status. Accomplishments to date include agreement on the criteria for program assessment, the selection of judges for the competition, and an application form has been widely distributed, and 10 communities have applied,

A spin-off from the River Action Program, another program of the GR Public Awareness Task Force, has been heightened concern and awareness of environmental issues in communities. This heightened awareness has spurred community groups to organize community clean-up drives in 5 communities in the GRW, and to citizens taking greater pride in their surroundings. This has resulted in more communities joining the Great River Green Village competition.

### ***PubEd Kit Developed, Produced, and Tested***

“Enviro Kits” for use by field officers to educate the general public were developed, produced and field-tested. The draft kits contain information on the natural resources of watersheds, the State Agencies that promote watershed management, the environmental laws and regulations of Jamaica, the C&E posters, videos, and tips for carrying out public awareness programs. The kits are targeted at officers of State Agencies responsible for public awareness, the Public Awareness task forces of the GRW and RGW, NGOs and other community groups seeking to raise the level of awareness of the public on environmental issues. The finalization of the kits was delayed by the departure of the Public Awareness and Participation Specialist, and additional work needs to be done on designing new materials, material production with carrying portfolios and final distribution of the kits.

### ***Three Training Courses Held***

#### Wetlands Education Training

R2RW supported two two-day training workshops in Wetland Conservation using Experienced overseas facilitators Michele Kading (Head Interpreter, Oak Hammock Marsh, Canada) and Lisa Sorenson, (Ecologist, Boston University, Wetlands Conservation Project Coordinator) to lead the workshops. The objective of the program was to raise awareness of the importance and value of the local wetlands including the value of man-made wetlands. These workshops were attended by the watershed conservation officers of the SWB for the Great River and Rio Grande Workshops in addition to the staff of the Biodiversity Branch of NEPA and other key partners such as the Forestry Department, RADA, Jamaica Conservation and Development Trust, Montego Bay Marine Park and Portland Environmental Protection Agency.

Over 68 individuals were trained.

#### Training in Meeting Management and Minutes Taking

Two one day workshops were held in January 2003 to provide training to a wide cross section of stakeholders involved in watershed management activities including the watershed conservation officers in Meeting Management, How to set Agendas and Minutes Taking.

These workshops were then reinforced in April 2003 by two half-day sessions with the following objectives:

- To review aspects of the Meeting Management training held January 2003
- To discuss the methods of recording minutes for the RGWMC and its Task Forces.
- To review the roles and responsibilities of secretaries of the RGWMC and its Task Forces.

In total 44 individuals were trained.

#### Grants Management Training

This special training workshop for Watershed Grants Officers was conducted on April 23, 2003. The training included the following components:

- Grant Management Planning
- Grant Review Process
- Negotiation of Grant Agreements
- Grant Accounting



- Reporting and Monitoring Processes

### ***Two Special Studies Commissioned***

Two Special Studies were carried out during the course of the year, and in addition R2RW responded favorably to fund the work of two graduate students at the University of the West Indies on research related to watershed management.

At the request of the Local Group Coordination Working Group of the NIWMC, a study was commissioned to examine the different approaches presently used in Jamaica for local resource management through local Watershed Management Committees. The study, completed in April 2003 by Valerie Gordon examined the on-going efforts of R2RW in the GRW and RGW, the Forest Department in Buff Bay and Pencar watersheds, the work of the National Irrigation Commission in establishing water user organizations, and other work on local group formation being done in the EJASP Project. The study made an assessment of the common elements, constraints and lessons learned in the group formation process, and examined the functions of LWMCs, the policy and institutional framework, and the levels of operation of LWMCs. In addition it examined linkages with existing governance structures and the National Integrated Watershed Management Council, and made recommendations on group establishment, appropriate governance strategies and institutional linkages for improving participation in an integrated, effective, locally driven watershed management system. A Procedures Manual for establishing Local Watershed Management Committees was also completed as part of the study.

Arising out of a meeting of the RGWMC, residents of St. Margaret's Bay at the mouth of the Rio Grande were complaining that their beach was rapidly eroding, and were blaming it on the sand mining operations taking place nearby. A Special Study was commissioned to conduct a preliminary investigation of the St. Margaret's Bay Beach to: 1. Establish whether beach erosion is significant along the coastline of St. Margaret's Bay; 2. Determine the causes of the said beach erosion, and whether there are linkages to activities such as sand mining in the Rio Grande; and 3. Develop an Action Plan for addressing the problem. The study concluded that "although it is apparent that the beach of concern is in an erosive phase, such phases are cyclical (or episodic), and in future might be replaced by a phase of deposition and extension of the beach area. The Action Plan recommended: 1. An engineering study to determine the most appropriate kind of shore protection program; 2. That some thought be given to relocation of the residents of this area in the medium to long term, as the flooding from the morass and erosion of the beach is likely to continue; 3. A detailed quantitative study of beach and shoreline dynamics and sediment dispersal should be made, to include bathymetric profiling and sediment sampling of the offshore area; 4. A similar study should be made of sediment composition and transport in the lower part of the Rio Grande and its estuary; and 5. Reconcile the activities of rafting and river fishing with the mining operations.

### ***Four Newsletters Published***

Three Newsletters were produced during the year, and distributed to a mailing list of 380 persons, as well as at fairs, expositions and other public meetings. The newsletter is now being produced and printed in house after analysis of the cost of using external printers has shown that it is not economical to contract quantities less than one thousand. The newsletter serves as a mechanism to keep the individuals in partner organizations at all levels, as well as community groups and NGOs, informed of key on-going project activities. The last newsletter of the year scheduled for July 2003 was not published due to the departure of the Participation and Public Awareness Specialist in June 2003 who had been primarily responsible for the publication. This position was filled at the beginning of September, and it is expected that the newsletter will be published regularly as of the next quarter.

## **Project Management**

### ***STTA Contracted to Assist with Grant Clusters***

The experience of the Watershed Grants Program has shown that communities are very good at identifying their priorities, and conceptualizing the rationale and objectives of grant applications, however, they need assistance in developing feasible activities and realistic budgets to carry them out. At the initial stage of the Project, R2RW technical staff assisted communities in completing their grant applications in a way that would satisfy the review of the WMCs, and suitable for presentation for formal approval to USAID. This issue has been raised by both WMCs, and it was recommended that key individuals from organizations represented on task forces be encouraged to become actively involved in project review and finalization. Over the course of the past year, members of task forces have become directly involved in the design and implementation of projects, and have even started to incorporate them into their respective work plans. Examples of state agencies include RADA in the Rushea and Cedar Grove Scotch Bonnet pepper programs, RADA and Forest Department in the Plant A Tree Program, RADA in the agro forestry projects in the Rio Grande, the National Water Commission in the constructed wetlands demonstrations and the Green Village Program, and the Social Development Commission in community clean-ups and the design of the new "cleaning and Greening of Cambridge to be implemented during Project Year four.

### ***Ten Grants Implemented***

At the close of Project Year two, three grant applications had been approved and were being implemented. Over the course of Year 3, 14 new grant applications were approved, and were being implemented. These are as follows:

1. Millbank Sanitation
2. Moore Town Water Supply
3. Rushea Hot Pepper Production
4. Cedar Grove Hot Pepper Production
5. Hermitage Honey Production
6. Content Water Supply and Sanitation
7. Mafoota Car Wash and Laundry
8. Rock Hall Agroforestry
9. Industry Agroforestry
10. Coopers Hill Agroforestry
11. Comfort Castle Water Supply
12. Cornwall Barracks Water Supply
13. CASE Demonstration Project
14. JCDT Community Education in the Upper Rio Grande

The WMCs have been actively involved in the review and recommendation for approval of these grants. In addition, at least three new grants were ready for approval at the end of the third year.

Although these projects are at various stages of implementation, it is clear that they are having a significant impact in the communities where they are being implemented in terms of the specific project purpose, and more broadly on the ability of residents to contribute to the management of natural resources.

### ***Administrative Staff Requirements Rationalized after CWIP Closeout***

In January 2003, the staffing requirements of R2RW after the closure of CWIP were assessed, and Job Descriptions were adopted for the positions that would remain. Upon the closure of CWIP in June 2003, 5 of the 7 administrative positions in the Administrative Support Center were

incorporated into the R2RW Project staffing structure. A new staffing organogram proposed in the Internal Review was adopted and implemented in August. The new Staffing Structure delegates the supervision of administrative staff among the existing full time technical staff according to functional responsibilities such as finance, production, logistics, grants, secretarial, and consultant supervision. An all staff workshop was held in August to develop clarity on individual and functional area responsibilities, as well as staff policies to build team spirit and shared understanding of working teams. Brief meetings of all full time staff were instituted in August to go over scheduled events and tasks to be accomplished for the coming week.

### ***Eight Project Implementation Committee Meetings Held***

Project Implementation Committee meetings were planned monthly, but were not always held because of schedule conflicts. Eight PIC meetings were held during Year Three to oversee Project implementation, monitor activities and resolve issues encountered during implementation. The PIC was composed of the Director of Conservation and Development, NEPA; the Manager of the Sustainable Watersheds Branch of NEPA, the Projects Manager within the PPPCD of NEPA, the Cognizant Technical Officer from USAID and the Chief of Party. In August, the PIC was restructured to promote active coordination among the three USAID SO2 projects: R2RW, CWIP II, and EAST, and to function more directly as a policy and decision making entity. The new PIC consists of the Chief Executive Officer of NEPA, the Director of PPPCD, the Director of the USAID SO2 Office, USAID Cognizant Technical Officer, and the Chiefs of Party of the R2RW, CWIP II and EAST. Two meetings of the new PIC were held in August and September 2003.

## 10. Program Expenditures

On the following page, a summary of program expenditures incurred during the period October 1, 2001 to March 31, 2001 is provided. The expenditures are listed by key support areas, with a breakdown of expenditures by project Components, which partially correspond to USAID-required Contract Line Item Numbers (CLINs). The expenditures relate to the projected fiscal plans submitted in the R2RW Life of Project Strategy and First Annual Work Plan. The key support areas in the expenditure summary also correspond to NEPA's code accounts for fiscal reporting to the GOJ.

**ARD, Inc.**  
**Ridge to Reef Watershed Project**  
**Period October 1, 2002 to September 30, 2003**  
 Contract No. 532-C-00-00-00235-00  
 \*\*\*\*\* Inception to Date \*\*\*\*\*

	Clin 1	Clin 2	Clin 3	Clin 4	Clin 5	Clin 6	Totals
Project Management & Admin	267,342	152,710	104,225	3	5,908	3,759	533,947
Travel, Transportation & Per Diem	70,555	26,331	5,784	0	2,976	0	105,646
Equipment & Supplies	19,258	11,421	2,855	0	1,503	0	35,037
Operating Costs	66,749	62,162	17,066	0	8,241	0	154,217
Subcontracts & STTA	305,527	92,268	9,490	0	2,054	0	409,339
Grants	107,016	0	0	0	0	0	107,016
Training							
- Study Tours	0	0	0	0	0	0	0
- In-Country	46,670	38,445	6,394	0	0	0	91,509
<b>Totals</b>	<b>883,116</b>	<b>383,338</b>	<b>145,813</b>	<b>3</b>	<b>20,681</b>	<b>3,759</b>	<b>1,436,710</b>

## Assessment of Beach Erosion in St. Margaret's Bay

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### Preliminary Assessment Of Beach Erosion At St. Margaret's Bay Portland, Jamaica – Final Report

#### *Executive Summary*

The following document was prepared in response to a request from the Ridge to Reef Watershed Project (R2RW) to investigate reports from some of the citizens of St. Margaret's Bay, Portland, who were concerned at the extent of beach erosion in the eastern part of the township, which was leading to damage and destruction of buildings. The objectives of our investigation were to establish whether the beach erosion was significant, to determine the causes of the erosion and to develop an action plan for addressing the problem. It was the opinion of several residents that the erosion might be related to the sand and gravel mining operations in the bed of the nearby Rio Grande, so that our investigation was extended to include the mining activity.

In order to address these objectives, meetings were held with relevant agencies in Kingston (Appendix 1), the St. Margaret's Bay citizens (Appendix 2), and the operators of the Rio Grande mining concern (Appendix 5). Because of the historical significance of the rafting industry and its importance for the tourist industry, three members of the rafting community were interviewed for their opinions as to why erosion was occurring at St. Margaret's Bay (Appendix 3). The field visits included observation of the beaches of concern, including photographs of damaged structures (Appendix 2), and of the mining operations. Four lines extending from the road to the edge of the vegetated area next to the beach were measured to provide baseline information for any future monitoring that might be carried out (Appendix 4).

The beach of concern extends east from the centre of the town towards the Rio Grande. The road and houses behind the beach are sited on a thin strip of land between the beach and a small morass (see back cover photograph). The land itself is made up of semi-consolidated sand and gravel, evidently an old bar formed from sediments provided by the Rio Grande, which would initially have enclosed a lagoon, now infilled as the morass. This is the beach that is being eroded.

From our investigations we conclude that significant erosion has indeed occurred along this beach, affecting buildings near the shoreline. Study of old aerial survey photographs indicates that the major part of the erosion (up to 40 or 50 metres of shoreline retreat) occurred here immediately following the passage of Hurricane Allen in 1980. As an example, the old wooden manse, still standing at the eastern end of the strip, would have been some 60 or 70 metres from the coast before Allen, but is now quite close to the shoreline. However, the residents reported that the erosion now threatening their homes began to be more apparent about five years ago. Within the last six months about 2 metres of coastal recession has occurred. The recent retreat is mainly due to the passage of Tropical Storm Lili at the end of September 2002, and two severe northers which occurred in January and February of this year.

The present beach along this stretch of coast is composed mainly of gravel and cobbles, with very little sand. Such sand as is present may well have been derived from erosion of the vegetated area, on which the houses are built. It is evident from examination of air photographs that the beaches here and along the west side of the Rio Grande estuary have gradually disappeared. The estuary beach does not exist now and the beach of concern is narrow (1-3 metres) and it is apparent that replenishment of beach sediments is not taking place.

Although sand and gravel mining continues in the lower part of the Rio Grande, we are of the opinion that it has little direct connection with the most recent 6 months of erosion (see Appendix 6). This is because we also examined recent, similar coastal erosion that has occurred at Orange Bay, Portland, where there is no report of nearby sand and gravel mining. There remains a possibility that sand abstraction there has diminished the supply of sand available for possible beach replenishment. This is because the riverbed is dominated by gravel and boulders and sand may be a relatively minor constituent. A quantitative study of the river bed materials is needed.

The construction of the new marina at Port Antonio consumed considerable quantities of pebbles and small boulders, which were reported to have been taken from the lower Rio Grande about two years ago. The exact quantities reported to have been removed have not yet been ascertained, but are well in excess of the quantities of sand and crushed stone reported annually to the Mines and Geology Department. We believe the figure to be in the region of 60 000 to 90 000 cubic metres. The unusually large quantity abstracted for this purpose may have temporarily inhibited supplies of coarser grained material to the estuary and beach system, but we cannot confirm this, and a quantitative study of the transport of sand, pebble and boulder sized bed load needs to be carried out under different discharge conditions.

We conclude that, although it is apparent that the beach of concern is in an erosive phase, such phases are cyclical (or episodic), and in future might be replaced by a phase of deposition and extension of the beach area. Predicting such a reversal would depend on the findings and recommendations of studies proposed below. However, the vegetated area behind the beach is not likely to recover as an area suitable for housing for many years, especially if building codes, requiring, say, a 60 metre set back from the beach, are put into effect. Most of the world's beaches are currently in a state of recession, at least partly as a result of global sea level rise, and the beach at St. Margaret's Bay is not a special exception.

We propose that the following actions need to be taken.

An engineering study to determine the most appropriate kind of shore protection programme for early implementation, as the priority in the short term.

That some thought be given to relocation of the residents of this area in the medium to long term, as the flooding from the morass and erosion of the beach is likely to continue, unless the morass is properly drained and adequate, possibly expensive shore protection is installed. A possible alternative residential site for a fishing community might be along the beach near the Ken Jones Airport.

A detailed quantitative study of beach and shoreline dynamics and sediment dispersal should be made, to include bathymetric profiling and sediment sampling of the offshore area.

A similar study should be made of sediment composition and transport in the lower part of the Rio Grande and its estuary.

The Rio Grande is noted as being world famous for its rafting activities. Although not part of our project objectives, it was quite evident to us that a reconciliation of the rafting and river fishing activities with the mining activities has not yet been achieved. If the Port Antonio region is to be improved as a tourist focus then a real effort in this direction is required. Such reconciliation would also probably have spin-off for the future of the beach area at St. Margaret's Bay.

## **Beach Erosion At St. Margaret's Bay Portland, Jamaica – Report To The Citizens**

### ***Executive Summary***

The citizens of St. Margaret's Bay, Portland have been greatly concerned about the rate at which the beach was eroding. Homes and other buildings along the beach were in danger of being destroyed by the sea. In fact, at least one home had already been partially destroyed with the waves breaking off the back section of the house. The residents were worried that the mining operation at the mouth of the Rio Grande was preventing the beach from being rebuilt after storms. The Ridge to Reef Watershed Project (R2RW) was contacted by the citizens association to help with the problem. As a result, a scientific study of the St. Margaret's Bay beach erosion was carried out to find out the severity of the problem, the reason the beach was eroding and to work out possible ways of dealing with the erosion. This document outlines the results of the study.

Meetings were held with relevant agencies in Kingston (Appendix 1), the St. Margaret's Bay citizens and the operators of the Rio Grande mining concern. Because of the historical significance of the rafting industry and its importance for the tourist industry, three members of the rafting community were interviewed for their opinions. The study team visited St. Margaret's Bay to investigate the erosion and take pictures of the damaged buildings, and the mining operation. The beach was measured to note the changes over time.

The section of eroding beach from the Fisherman's Beach across the street from the St. Margaret's Bay Basic School to the Rio Grande was studied. In this report, this area will be called the "beach of concern." The road and houses behind the beach are located on a thin strip of land between the beach and a small morass. The land itself is made up of sand and gravel, which was most likely formed from sediments carried down by the Rio Grande. This material would have enclosed a lagoon in the past. The lagoon is now filled up by plants which have formed the morass.

From our investigations we conclude that significant erosion has indeed occurred along this beach, affecting buildings near the shoreline. Study of old photographs taken from planes flying above St. Margaret's Bay show that the major part of the erosion (the sea took 40 to 50 metres of land) occurred here immediately following the passage of Hurricane Allen in 1980. As an example, the old wooden manse, still standing at the eastern end of the strip, would have been some 60 or 70 metres from the coast before Allen, but is now quite close to the shoreline. However, the residents reported that the erosion now threatening their homes began to be more apparent about five years ago. Within the last six months about 2 metres of beach has been lost to the sea. This recent beach loss is mainly due to the passage of Tropical Storm Lili at the end of September 2002, and two severe storms which occurred in January and February of this year.

The present beach along this stretch of coast is composed mainly of gravel and cobbles, with very little sand. The sand that is there may well have been brought to the beach as a result of erosion of the area covered by plants and grass, on which the houses are built. The air photographs show that the beaches here and along the west side of the Rio Grande estuary have gradually disappeared. The beach at the mouth of the river does not exist now and the beach of concern is narrow (1-3 metres) and it is apparent that the beach material that is taken away by waves and storms is not being replaced.

The study also looked at similar erosion taking place at Orange Bay, Portland. Although the erosion at that beach is also significant, there is no report of sand mining nearby. As a result it cannot definitively be said that sand mining is the reason behind the beach erosion at St. Margaret's Bay. There is a possibility that the mining of sand has reduced the amount available for naturally rebuilding the beach. This is because the riverbed is made up of mostly gravel and

boulders and sand may be a relatively minor constituent. A study to measure the amount of (i.e. a study to measure the amount) of the riverbed materials is needed.

The construction of the new marina at Port Antonio took large quantities of pebbles and small boulders, which were reported to have been taken from the lower Rio Grande about two years ago. The exact quantities reported to have been removed have not yet been ascertained, but are well in excess of the quantities of sand and crushed stone reported annually to the Mines and Geology Division. We believe the figure to be between 60 000 to 90 000 cubic metres. The unusually large quantity abstracted for this purpose may have temporarily stopped supplies of coarser grained material to the estuary and beach system, but we cannot confirm this, and a quantitative study of the amount of sand, pebble and boulder sized material in the river bed needs to be carried out under different river conditions.

Under normal circumstances, beaches go through a period of erosion, where the beach is taken by the sea. This period of erosion is usually followed by a period where the beach is rebuilt by natural means. We conclude that, although it is apparent that the beach of concern is in an erosive stage, in future it might be replaced by a phase of deposition and extension of the beach area. Saying whether or not this will happen would depend on the findings and recommendations of studies suggested below. However, the vegetated (grassy, planted) area behind the beach is not likely to be rebuilt enough to be considered safe for housing for many years. This is especially important if there are building codes put in place which would for safety's sake prevent buildings from being located less than 60 metres from the beach. Most of the world's sandy beaches are currently in a state of erosion, at least partly as a result of global sea level rise, and the beach at St. Margaret's Bay is not a special exception.

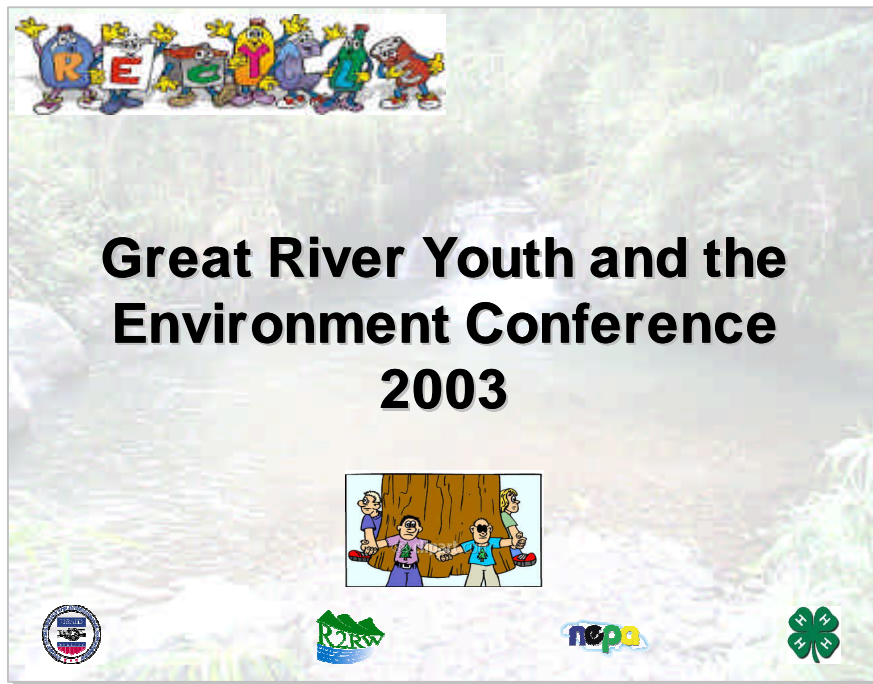
We propose that the following actions need to be taken.

1. An engineering study to determine the most appropriate kind of shore protection programme as quickly as possible for a short-term solution.
2. That some thought be given to relocation of the residents of this area in the medium to long term, as the flooding from the morass and erosion of the beach is likely to continue, unless the morass is properly drained and adequate, possibly expensive shore protection is installed. A possible alternative residential site for a fishing community might be along the beach near the Ken Jones Airport; this section of beach should be safe for building for a much longer period of time if persons do not build too close to the shore. The residents who live and/or have businesses on the beach may be safe for another 10 years or more. It is however, not a good idea to spend money on constructing new buildings or buying land along this area of the beach.
3. A detailed quantitative study of the way the beach is naturally built up and broken down should be made. This should include measuring the water depth and sampling the sediment of the area further out to sea.
4. A similar study should be made of the kinds of sediment that make up the beach, as well as the river flow conditions under which the sediment is moved downstream in the lower part of the Rio Grande and its estuary.
5. The Rio Grande is noted as being world famous for its rafting activities. Although not part of our project objectives, it was quite evident to us that a reconciliation of the rafting and river fishing activities with the mining activities has not yet been achieved. If the Port Antonio region is to be improved as a tourist focus then a real effort in this direction is required. Such reconciliation would also probably have spin-off for the future of the beach area at St. Margaret's Bay.



## Great River Youth and Environment Conference 2003

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### Five Most Important Conference Objectives

- To bring together young persons to discuss environmental issues and recruit youth for the environmental cause
- To acknowledge, honour and celebrate youth involved in environmental activities and create incentives for the development of environmental leaders
- To enhance awareness on environmental issues and foster stewardship of the environment



## **Five Most Important Conference Objectives**

- To identify opportunities for careers in environmental fields/sector including agriculture
- To demonstrate the link between the environment and every day life issues, laws and practices



## **Overall Conference Structure**

- Target youth within the age group of 15 – 30
- Invite 100 participants
- Participants drawn from the communities of the GRW including churches, schools, youth clubs, 4-H clubs, NGOs, other CBOs
- Conference held as a two-day residential for all the youth participants
- Included field trips to examine limestone geology, a forest and marine/coastal ecosystem



## Overall Conference Structure

- Included displays from agencies involved in the Great River Watershed Management Committee
- Used drama, dance, small group discussions, demonstrations and displays to engage participants



## Great River Watershed Management Committee (GRWMC)

Invites

### Youth and the Environment Conference 2003

On

**July 15 – 16, 2003**

At the

### Team Work Christian Centre, Torodo Heights, St. James

**Activities include career talks, presentations from environmental professionals, drama, dance, small group discussions, exhibits, petting zoo and an environmental church service.**

For further information contact:  
Marline Stephenson-Dalley (conference coordinator)  
Tel: 770-4107  
Fax: 954-7358  
Email: [marline@cwjamaica.com](mailto:marline@cwjamaica.com)



## Who Came?

Anchovy High School 4-H Club  
Boundbrook Citizens Association  
CASE Environmental club  
Castle Heights Youth Club  
Cedar Grove Pepper Growers Group  
Content Progressive Youth Club  
Elim Environmental Club  
Harrison Memorial High School  
Kew Park Youth Club  
Knockalva 4-H Club  
Lambs River United Youth Club  
Lethe All Age 4-H Club  
Mafoota Youth Club  
Montego Bay Community College Ecology Club  
Montego Bay High 4-H Club  
Mt. Horeb All Age 4-H Club  
Mt. Pleasant A.Y (SDA)  
Mt. Salem A.Y (SDA)  
New Generation Youth Club  
Passley Gardens Youth Club  
Pisgah All Age  
Plantation Heights Youth Club  
Port Antonio Police Youth Club  
Prospect Youth Club  
Retrieve All Age 4-H Club  
Spring Field All Age 4-H Club  
St. James A. Y. Federation  
Sting Youth Club  
Tower Hill All Age 4-H Club  
Westmoreland A. Y. Federation (SDA)

**84 participants from 30 organizations, from 5 parishes**



Greetings from USAID



Limestone Forest Field Trip



Opening Ceremony Touring Party



SDA Drum Corp



Participants Exchange information

## Major Findings

- Of the 84 participants, less than 6% had visited **any** of the 5 major nature tourism destinations in the watershed
- Felt that collective lobbying would be an effective deterrent where commercial enterprises were the offenders
- Christian youth organizations had been under-utilised as a vehicle to spread environmental messages
- Youth organizations were not sufficiently involved by the GRWMC in environmental education and decision-making processes about their immediate environment
- Mechanism needs to be established through which they might network and continue to participate regarding environmental issues after the conference

## Major Findings

- The strongest concerns entered on solid waste issues. This was in strong contrast to the Portland Youth Forum where biodiversity and eco-tourism issues were the major issue of concern
- Generally unaware of the importance of forests and were not generally motivated regarding the need to reforest denuded lands



## Recommendations

- The conference be held at a time when students and teachers are in school
- More science teachers be invited to participate
- Longer notice to permit students to prepare and bring projects
- The number of participants be doubled
- Finding way to track participants' environmental activities post conference



## Recommendations

- Encourage participants where necessary, to write letters to the relevant authorities regarding breaches of the environmental laws
- Target participants who have volunteered to serve on various task forces



## **The What Next?**

## Strategic Plan for Sustainable Development of the Great River Watershed

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**Notes of Workshop with the Executive of the GRWMC  
Wexford Court Hotel, Montego Bay  
Wednesday May 21, 2003**

**Facilitator – Trevor Spence**

### ***Preliminaries***

Trevor Spence offered introductions. Mark Nolan emphasized the participatory approach towards completing the plan and requested the full participation in the workshop.

### ***Presentation***

Jim Schweithelm gave an overview of the proposed plan. The Plan will cover a 5-year horizon. Integrated WM is the preferred approach and involves participation in WM. Requires a lot of coordination. Watershed planning is an evolving process of watershed planning nationally. The development of rapid process of Plan preparation. Planning is a continuous process.

### ***Trevor Spence***

Review of document: Great River Watershed Stakeholder Workshop Report. The document looked at: Agriculture, Sanitation, Tourism, Waste Management and Forestry in terms of:

### ***Current Status***

- Major Changes and Trends
- Challenges and Obstacles
- Assets and Advantages

Review of Expectations:

- Humor
- Respect
- Etc.

Sustainable Development – entails passing on to future generations a stock of human and physical capital ... suggests a new type of collaboration since no single institution has the capacity to tackle the mega challenges. On the road to sustainability is feasibility of the social and economic interventions.

### **Session 1**

What in the Great River Watershed supports the situation with respect to management of natural resources? The following themes have been used:

- Draw down of water
- Waste water
- Solid waste management
- Forestry



- Community participation in mgmt
- Flood hazards and river pollution
- Stewardship – Green Village Program

**Worksheet 1**

Current Reality Dialogue for the Great River Watershed: What in the current situation in the Great River Watershed supports the improved management of natural resources?

**Strengths**

R2RW and GRWMC resources	9
Involvement of State Agencies	9
Potential for Eco Tourism	7
Natural Resource Base (land, river)	7
Community Buy-in to Watershed Mgmt.	7
Agriculture as a viable activity	6

**Weaknesses**

Pollution and Solid Waste	14
Lack of Compliance and Enforcement	11
Lack of public awareness and education	8
Lack of Coordination and resources	5
Weak institutional and financial capacity of NGOs/CBOs	4

**Reflections**

Insights into levels of community buy-in would be appreciated: This was rated high as a strength, but is it really so? Community persons want to participate, but they don't know how to. There is a rural to urban drift. Responses in the community have been good, but more resources are needed to actualize. On a scale of 1-10 the group rated it as a 4-5. There has been a gender bias in this. Women have been involved extensively in Pisgah, while there has been more of a balance in Content. In the education program – we should not discriminate.

**Vision**

8 vision statements were agreed to in June 2001:

1. New Agricultural Practices and Technologies for small farmers
2. Watershed Residents Benefit From Coordinated, Integrated Institutions
3. Total Waste Management For A Better Quality Of Life
4. Trees for Life, Protection and Sustainability
5. Environmental Action and Awareness Everywhere
6. A Model for Sustainable Heritage and Eco-Tourism
7. Combined Foreign and Local Marketing under the GR Brand
8. Improved Infrastructure and Use of Environmentally Friendly Technologies

**Focus Question**

What do we want to see in place in the Great River Watershed to improve the management of our natural resources by the end of 2004?

After working group discussions: the following visions were confirmed.

### ***Tabulated Vision***

1. Improved environmentally friendly technologies for watershed communities (13)
2. Improved agricultural, forestry and marketing technologies including the Great River Brand (12)
3. Watershed residents benefits from coordinated, integrated institutions (10)
4. Environmental awareness and community actions through CBOs: Watchdogs, Guardians and Stewards actively involved in environmental activities (9)
5. Model of sustainable heritage and eco-tourism. (8)

### ***Discussion***

Are we saying that we need to both strengthen technologies and improve income generation activities? Both have unique features. How do we select persons and areas for demonstration purposes? Reps from the government agencies and R2RW would have to select. Has to incorporate both the experts and the persons with the potential. When demonstrations are sited, there should be access. Partners must have qualities to share. What instrument does RADA use to secure the participation of the participants?

### **Strategic Directions Workshop**

What are the specific, targeted and priority actions that need to be taken in the Great River Watershed during the next two years that will lead to the development and implementation of an integrated watershed plan for the Great River

### **General Comments**

Where more than one lead agency has been identified, responsibility is diffused, and nobody leads. One agency should lead, and the others would be involved as support agencies.

Are there any Parish Council reps in the GRWMC? No, none have been actively participating?

What about the PDCs? None are really active in the Great River area.

Whose plan is this anyways?

Section on Institutional Arrangements (Government, State Agencies, Private Sector)

Separate part on Governance arrangements (community involvement, GRWMC, etc)

Therefore the plan could be in two segments. Some of the bigger ticket items will remain with central government.

The plan could identify the overall activities – then subdivide the activities by the roles of the various parties to achieve that activities. If the big ticket activities are solely for the Government, then what is the role of the communities in plan implementation?

Status of GRWMC?

- What is the GRWMC going to do after the R2RW ends? The answer to this will guide how the GRWMC should be incorporated.
- Should GRWMC have a mandate, vision statement and a constitution?
- GRWMC should be registered (under what Act needs to be decided)

- The GRWMC needs to open an account.

Whose watershed is it?

Post R2RW form of GRWMC might be mostly advocacy and coordination. The funds will always stay with the central agencies.

Does the GRWMC have an address? Will the agencies be supported by correspondence and a letterhead? We need a place where to meet.

Where is R2RW at? In the middle of a process. Revision of the Watershed Policy, WPA, other national priorities. The answer depends on who owns the activities. If they are owned strictly by R2RW – then the activities will die at the end of the Project. R2RW has a great deal of potential. General satisfaction with the process to date.

Watershed Management is a long-term complex process that won't be solved overnight. R2RW has opened the door to bring decisions over resource management to a level that is closer to the communities.

The coordination of the activities of four parishes will be very difficult, dynamic process that will never be a one-shot process.

It will be easier to have this conversation on June 3<sup>rd</sup> once some of the plan activities are identified.

Key question is continuity – how to continue the activities that have already started.

Trying to carve out role for local governance with the GRWMC – and this is a shift that needs to happen, but there still has to be a role for government, and there is a need to clearly define what the roles and responsibilities of the various parties will be. Policies and legislation developed to support. The partnerships will have to be defined because these things can't be done in isolation.

<b>Strategic Direction No</b>	<b>Public Awareness Campaign stimulating community empowerment and environmental monitoring</b>
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**Priority Action**

**Objective**

To achieve good governance in GRW through policy implementation that facilitates improved monitoring at both community and state agencies and development of an awareness/education program.

<p><b><u>Key Activities</u></b></p> <ol style="list-style-type: none"> <li>1. Distribute information to key groups.</li> <li>2. Environmental Quiz</li> <li>3. Facilitate 'Face to Face' forum of state agencies with communities.</li> <li>4. Use of media</li> <li>5. Build capacity of existing LMCs ensuring good representation.</li> </ol> <p><b><u>Geographical Areas of Emphasis</u></b></p> <ul style="list-style-type: none"> <li>• GRW</li> </ul> <p><b><u>Training and Technical Assistance</u></b></p>	<p><b><u>Roles and Responsibilities (Lead)</u></b></p> <p>GRWMC to ensure continued sustainable management of GRW – facilitate, lobby, coordination [Interagency, Inter community and community/sate agencies].</p> <p><b><u>Roles and Responsibilities (Support)</u></b></p> <ol style="list-style-type: none"> <li>1. NEPA – education, enforcement, policy</li> <li>2. FD</li> <li>3. RADA – education, training</li> <li>4. Public Health – Enforcement</li> <li>5. NWC – distribute, monitor water quality</li> <li>6. SDC</li> </ol> <p><b><u>Team Members</u></b></p> <p><i>D. Grapine</i>  <i>S. Dixon</i>  <i>A. Steele</i>  <i>C. Robinson</i></p>
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<b>Strategic Direction No</b>	<b>Production and Marketing</b>
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**Priority Action**

**Objective**

Promote new and improved environmentally friendly technologies and practices towards efficient production and marketing GRW products.

<p><b><u>Key Activities</u></b></p> <ol style="list-style-type: none"> <li>1. Establish composting projects</li> <li>2. Demonstrate proper land husbandry practices for soil conservation.</li> <li>3. Facilitate and promote tree planting</li> <li>4. Develop Great River Brand to label organic products for local and export market.</li> <li>5. Assist/facilitate marketing of small farmers products.</li> </ol> <p><b><u>Geographical Areas of Emphasis</u></b></p> <ul style="list-style-type: none"> <li>• 1 &amp; 2 Campaign GRW; Demonstrations (8 projects including schools)</li> <li>• 3 Denuded areas in GRW</li> <li>• 4 &amp; 5 GRW</li> </ul> <p><b><u>Recommended Format of Plan</u></b></p> <p><i>Production and Marketing</i></p>	<p><b><u>Roles and Responsibilities (Lead)</u></b></p> <p>RADA (NEPA, JAS, 4-H Clubs)</p> <p>RADA (NEPA, JAS)</p> <p>FD (NEPA, RADA)</p> <p>GRWMC (R2RW, JAMPRO, Bureau of Standards)</p> <p>RADA (JAS)</p> <p><b><u>Roles and Responsibilities (Support)</u></b></p> <p><i>See above.</i></p> <p><b><u>Team Members</u></b></p> <p>J. Williams  B. Taylor  R. Meghoo  A. Gooden  K. McDonald Gayle</p>
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<b>Strategic Direction No</b>	<b>Water, Solid Waste and Sanitation Activities</b> <ul style="list-style-type: none"> <li>▪ Improve water quality and distribution</li> <li>▪ Improve solid waste management</li> <li>▪ Improve sanitation</li> </ul>
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**Priority Action**

**Objective**

1. To improve water quality and distribution
2. To improve collection of solid waste and encourage small scale recycling.
3. To improve sanitation facilities and practices for human and animal waste.

<p><b><u>Key Activities</u></b></p> <ol style="list-style-type: none"> <li>1. Monitor via sampling and testing =&gt; Treatment</li> <li>2. Increase number of water supply systems and/or improve existing systems.</li> <li>3. Promote investment in collection systems (Government and private sector) and recycling systems.</li> <li>4. Encourage sanitation technologies such as constructed wetland.</li> <li>5. Educate communities on sanitation facilities/practices.</li> </ol> <p><b><u>Geographical Areas of Emphasis</u></b></p> <ul style="list-style-type: none"> <li>• Entire watershed</li> <li>• Troubled areas/hotspots</li> </ul> <p><b><u>Format for Plan</u></b></p> <p><i>Preservation of our watershed system</i></p>	<p><b><u>Roles and Responsibilities (Lead)</u></b></p> <p>NWC/PHD</p> <p>NWC/PHD</p> <p>NSWMA/PHD</p> <p>NEPA/PHD</p> <p>Community Groups</p> <p>{Governance and stewardship cross-cutting}</p> <p><b><u>Roles and Responsibilities (Support)</u></b></p> <p><i>R2RW</i></p> <p><i>Montego Bay Marine Park</i></p> <p><i>NGOs and CBOs</i></p> <p><b><u>Team Members</u></b></p> <p><i>Carlene Martin</i></p> <p><i>Lisa Golding</i></p> <p><i>Marvin Williams</i></p> <p><i>Nedson Gardner</i></p> <p><i>Hugh Graham</i></p>
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<b>Strategic Direction No</b>	<b>Tourism Activities</b>
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**Priority Action**

**Objective**

To explore the consolidation and expansion of heritage, community and eco-tourism in the GRW

<p><b><u>Key Activities</u></b></p> <ol style="list-style-type: none"> <li>1. Inventory of sites. Thematic listing: caves, trails, farms, buildings, communities.</li> <li>2. Existing attractions: audit, certify</li> <li>3. Promotion: listing, mapping</li> <li>4. Business plans for communities/capacity development</li> </ol> <p><b><u>Geographical Areas of Emphasis</u></b></p> <ul style="list-style-type: none"> <li>• GRW Management Unit</li> </ul> <p><b><u>Format for Plan</u></b></p> <p>Sustainable Livelihoods Economic Activities</p>	<p><b><u>Roles and Responsibilities (Lead)</u></b></p> <p>TPDCo</p> <p>TPDCo, MBMP, Rafters Assn. JAMPRO, JTB, MCC, SBA</p> <p><b><u>Roles and Responsibilities (Support)</u></b></p> <p>JNHT JHS NHSJ Birdlife IOJ GSJ</p> <p><b><u>Team Members</u></b></p> <p>Mark Nolan Michael Spence Leon Hopkins Thera Edwards Jill Williams</p>
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**Notes**

Examples of community tourism:

- Community farm tours
- Old train stations
- St James Heritage Foundation
- Bird watching
- Beekeeping
- Caving: bat caves
- Medicinal plants
- Historical sites e.g. Montpelier
- Storytelling e.g. Chester Castle
- Fruit Tour e.g. Stinking Toe
- Bush Doctors/Balm Yards
- Restoration of Great Houses: community based.

## Tourism Operations in the Great River:

1. Mountain Valley Rafting, Lethe
2. Tubing Operation on GR
3. Rocklands Bird Sanctuary
4. Nature Valley Farm
5. Animal Farm
6. Belvedere
7. Croydon in the Mountains
8. Hilton High, St. Leonards
9. Hotels in the Montego Bay Marine Park
10. Blue Hole Park
11. Bogue Lagoon – Fisherman's tour
12. Mangrove Trail

## **GR Strategic Plan Workshop: Day 2**

1. Preliminaries: Trevor: Prayer, Introduction of participants, review of objectives.
2. Overview of Plan: Jim Schweithelm: Contents, Directions, What a Strategic Plan can do and can't do. The plan will contain sections on the physical attributes, the socio-economic aspects, and the institutional players containing roles and responsibilities.
3. Review of Day 1: Mark: Review of Day 1 agenda, Strengths, Weaknesses, Vision; Four Strategic Directions

### ***Discussion***

If agencies are to take on responsibilities for activities under the plan, it must get incorporated into their individual corporate plans.

### ***Ownership***

NEPA should be the lead agency to develop the plan and provide leadership. But it won't be until individual constituent agencies and businesses start incorporating GRW activities into their corporate plans, that real ownership will take place.

What about another WMU? Example: Flint River. Who would drive and own such a plan.

Ownership can be seen as:

1. We'll see this through
2. Taking responsibility for follow-up actions

The second is more difficult and requires follow-up

Options for Incorporation:

- Registered as a Friendly (Provident) Society
- Not for profit company
- Non-Government Organization
- Limited Liability Company

The decision on which road has been deferred. The leaning is towards a Provident Society.



The NIWMC has been appointed by Cabinet, and contains six working groups: Public Awareness; Local Group Coordination; Incentives; Programs and Projects; Private Sector Involvement; Finance. The matter of registration with the NIWMC will soon be dealt with by the Council.

R2RW will die at the end of the Project. To the extent that the activities are only owned by R2RW, they will end at the end of the Project – but to the extent that they are owned by the agencies and communities, it will continue.

An end of project MOU might be one mechanism to institutionalize coordination for the GRW 7 might be one way to proceed.

The Strategic Plan will be kept as a short, user-friendly document.

Will it contain a section on Zoning? No, this is too much detail.

### ***Next Steps***

June 3<sup>rd</sup>. Presentation of initial findings and recommendations to get feedback from stakeholders

June 4<sup>th</sup> Similar

June 13<sup>th</sup> Initial draft submitted

Distributed to stakeholders for feedback

Final Plan scheduled for August.

### Strategic Objectives and Actions

RATIONALE	INDICATIVE OUTPUTS	RESPONSIBILITIES	RESOURCES NEEDED	TIMING
<b>Objective 1: Develop a sound scientific basis for monitoring progress toward achieving watershed management goals.</b>				
Action 1.1: Develop a system for monitoring sediment movement in the Great River System.				
Provides a means to monitor effects of changes in land uses and management practices. Ability to identify important sediment sources.	Sediment budget, monitoring plan, scheduled sampling	R2RW, WRA, SWB	TA (2 PM); periodic sampling costs	Begin Year 1
Action 1.2: Conduct low-cost water quality monitoring on a continuous basis.				
Provides a means to monitor biological and chemical pollutants. Ability to identify important point and non-point sources.	Monitoring plan, scheduled sampling, link results to sources	R2RW, WRA, NRC, SWB	TA (1 PM); periodic sampling costs	Begin Year 1
Action 1.3: Conduct a rapid biodiversity assessment of the Great River and its tributaries to determine the health of the aquatic ecosystem and to identify bio-indicators to be monitored (i.e., fish/invertebrate populations, habitat, riparian condition).				
Provides a baseline of current conditions and to track river ecosystem health.	Biodiversity assessment, monitoring plan, scheduled sampling	R2RW, SWB	TA (1 PM); periodic sampling costs	Begin Year 1
Action 1.4: Conduct a rapid assessment of the impact of Great River sediment and pollutants on the coastal ecosystem as a monitoring baseline.				
Provides a baseline of current conditions and to track coastal ecosystem health.	Rapid coastal resources assessment, monitoring plan, scheduled sampling	R2RW, MBMP, NEPA	MBMP assistance with initial assessment and monitoring	Begin Year 1
Action 1.5: Expand on community Participatory Appraisal techniques used by SDC to establish baseline socioeconomic conditions.				
Provides a baseline of current conditions in GRW communities and a means to track changes through scheduled monitoring appraisals in the same communities (see Action 4.1).	Training of SDC trainers, Appraisals in priority communities, monitoring plan, scheduled monitoring appraisals	R2RW, SDC, SWB	TA (2 PM); time of SDC-CDOs	Begin Year 1
Action 1.6: Establish an electronic database of environmental and socioeconomic data that is linked to the national watershed GIS and accessible to Parish planners.				
Provides a means to monitor trends in data sets and assess linkages in categories of data over time.	Expand database already established by SWB	SWB, WRA, NWC, SDC, R2RW	No additional resources needed	Ongoing

RATIONALE	INDICATIVE OUTPUTS	RESPONSIBILITIES	RESOURCES NEEDED	TIMING
<b>Objective 2: Reduce sediment and chemical/biological pollution in the Great River and coastal waters affected by its discharge.</b>				
Action 2.1: Map point and non-point sources of sediment, pollutants, and hazardous chemicals and monitor regularly.				
Provides objective basis to assess extent of pollution from different sources.	Establish fixed reference points. Allow longitudinal trend analysis of pollution.	Lead: WRA; Support: NWC, NEPA, R2RW	Personnel, transport, lab facilities, operating funds	Ongoing
Action 2.2: Develop a watershed-based zoning plan for the GRW with the involvement of national and Parish agency planners.				
This is a basic tool of watershed planning that stipulates land-use restrictions for zones that are defined based on physical parameters. The zoning plan brings land-use planning and development planning into one document. It will be an appendix to the Strategic Plan upon completion.	Zoning plan workshops; The zoning plan (map with supporting guidelines and instructions to planners	R2RW, NEPA, Min. of Local Government (MoLG), Parish planners	TA (2 PM); Development workshops	ASAP– high priority
Action 2.3: Apply GRW zoning plan restrictions and guidelines to the permitting processes.				
Ensures that the land-use guidelines in the zoning plan are integrated into the permit and license review processes implemented by NEPA and Parish planners.	Appropriately referenced (in permitting and licensing process). Zoning plan; national and Parish planners trained to use zoning plan.	R2RW, NEPA, MoLG	Training seminars	Year 1
Action 2.4: Identify home, subdivisions, and public buildings that require improved sanitation; apply cost-effective solutions.				
Provides basis to determine possible sources that could add contaminants to the Great River.	Determination of waste treatment & disposal systems used by the different groups. Assessment of the appropriateness and effectiveness of systems used. Recommend appropriate systems.	Lead: ECD; Support: WRA, NEPA, R2RW	Personnel, transport, lab facilities, operating funds	Ongoing
Action 2.5: Identify environmentally safe and cost-effective means to improve solid waste disposal.				
Proactive action to reduce extent of solid waste pollution of the Great River system.	Assess methods being used by different groups for solid waste disposal. Recommend appropriate systems.	Lead: NEPA; Support: NPM, WRA, R2RW	Personnel, transport, lab facilities, operating funds	Ongoing

RATIONALE	INDICATIVE OUTPUTS	RESPONSIBILITIES	RESOURCES NEEDED	TIMING
<b>Objective 3: Institutionalize WSM in Parish governments and national agencies.</b>				
Action 3.1: Assist Parish planners to obtain information, planning tools, and resources to integrate WSM into permitting and land-use planning decisions.				
Parish planners are receiving training and tools that will allow them to play a more active role in land- use and environmental planning. Complementary training and information on WSM will allow them to effectively use the GRW zoning plan in their work.	A chapter on WSM in the Parish Planner's Handbook being prepared by the MoLG with help from NEPA. WSM training for Parish planners. Relevant elements of the GRW zoning plan integrated into Parish Sustainable Development Plans.	SWB, MoLG, GRWMC, R2RW	TA (1PM); one or more training seminars.	Year 1
Action 3.2: Develop the GRW Stakeholders Communication Network under the GRWMC.				
Effective communication among the stakeholders is a key prerequisite to sustainability of WSM efforts. Communication is currently facilitated by R2RW, but should be shifted to the GRWMC.	An electronic bulletin board or website. Stakeholder mailing and telephone lists.	GRWMC, SWB, R2RW	Assistance from R2RW	Ongoing
Action 3.3: Bring watershed management issues into the mainstream of Parish government.				
Parish Councils (PC) have not been active participants in WSM in the GRW. Their interest and support will provide grassroots political support to WSM efforts.	Field trips and briefings for mayors, councilors, and secretary/managers; GRW appears on the agenda of PC meetings.	SWB, MoLG, GRWMC, R2RW	Staff time and travel costs to visit Parish capitals.	Ongoing
Action 3.4: Develop mechanisms for collaboration among state agencies working on WSM in the GRW.				
After the R2RW Project ends, state agencies will be primarily responsible for technical WSM interventions. These interventions will be most effective if they support this Action Plan in a complementary manner and foster collaboration among agencies.	Annual meeting of the GRW Inter-Agency Consultative Group, facilitated by the GRWMC. GRW activities in annual work plans and 3-year budgets of state agencies.	GRWMC, SWB	Staff time	Ongoing

RATIONALE	INDICATIVE OUTPUTS	RESPONSIBILITIES	RESOURCES NEEDED	TIMING
<b>Objective 4: Encourage communities and residents to internalize attitudes and behavior that support WSM.</b>				
Action 4.1: Use a Participatory Appraisal approach to learn about communities.				
Communities are the most critical level for achieving both the environmental and development goals of integrated WSM. It is important to (1) establish a baseline of socioeconomic conditions, (2) identify needs and opportunities with respect to economic development and livelihoods, (3) identify environmental problems and solutions, and (4) identify individuals and CBOs to take leading stewardship roles. SDC already uses participatory methods to work with communities, and these could be built on to obtain the required information.	Training of SDC trainers; Handbook on WSM for SDC-CDOs; Appraisals in priority communities; Report of findings with analysis of results and implications for WSM.	SWB, SDC: R2RW	TA (2PM); Travel expenses	Year 1
Action 4.2: Build watershed stewardship capacity and commitment in GRW communities.				
Changing attitudes and behaviors of residents and building commitment to WSM at the community level has very long-term impact. Reaching young people through schools and 4H Clubs ensures that this impact will continue into the next generation.	Training and field trips for community leaders. Visits between up- and downstream communities. Continuing awareness activities, especially targeted at young people. Involvement of groups with an economic stake in the river, such as raftsmen.	SWB, SDC, GRWMC, Min. of Education (MoE), 4H Clubs, R2RW	Staff time; travel expenses	Ongoing
Action 4.3: Build communication channels with communities.				
Maintaining communication with communities is important but difficult because (1) there are so many of them, (2) there is typically no single point of contact, and (3) communication mediums are limited. SDC-CDOs can play an important role in channeling two-way communication because they work in the communities on a regular basis.	Institutional mechanism established to channel information through CDOs. Regular use of this mechanism.	GRWMC, SWB	Staff time	Ongoing

RATIONALE	INDICATIVE OUTPUTS	RESPONSIBILITIES	RESOURCES NEEDED	TIMING
<b>Objective 5: Facilitate sustainable economic development in the GRW.</b>				
Action 5.1: Develop criteria to assess potential development interventions.				
Resources available to invest in economic development are limited and may decrease when R2RW ends. Proposed interventions should be judged on criteria related to WSM value, overall socioeconomic benefit, financial viability, and demonstration effect.	Intervention criteria; Process for judging proposed interventions against these criteria.	SWB, RADA, GRWMC, R2RW	Staff time	Year 1
Action 5.2: Explore means to increase the role of tourism in the Great River economy.				
Tourism now plays a minor role in the Great River economy, but there is potential to expand it in the areas of eco-tourism and heritage tourism.	Inventory of existing and potential tourism attractions. Tourism TA.	TPDCO, GRWMC	TA (2 weeks); staff time	Year 2
Action 5.3: Facilitate marketing of locally produced products.				
Marketing is a major constraint to improving the profitability of agriculture and other businesses in the GRW.	Montpellier Agricultural Fair used to interest farmers in cooperative marketing. Great River Brand established and used by farmers and other types of businesses.	RADA, JAS, R2RW	Staff time; publicity costs	Year 2
Action 5.4: Encourage landowners to grow trees for economic benefit and environmental protection.				
Planting trees does not require a major investment in cash or time but can provide substantial monetary benefits either through the sale of fruit or wood products. Trees by themselves do not reduce erosion, but they create a stable land use over time.	Seedlings distributed; Technical advice provided.	FD, RADA, R2RW	Staff time and travel costs; cost of producing seedlings.	
Action 5.5: Plan to avoid negative impacts of Highway 2000.				
Highway 2000 is a major transportation corridor linking Kingston with Montego Bay. It will pass through the GRW from south to north and is likely to increase population density and change settlement patterns, thereby affecting WSM in the GRW.	Analysis of EIA and relevant documents of project to identify likely impacts on GRW. Impacts that are identified to be used to guide land-use planning approaches in the zoning plan.	SWB, R2RW, NWA	Staff time	Year 2

RATIONALE	INDICATIVE OUTPUTS	RESPONSIBILITIES	RESOURCES NEEDED	TIMING
<b>Objective 6: Develop a collaborative, advocacy-based approach to enforcement.</b>				
Action 6.1: Base enforcement on a collaborative effort among the GRWMC, communities, and government agencies.				
Enforcement will be more effective and efficient if it is a collaborative effort among enforcement agencies, the GRWMC, and communities.	Enforcement officials actively collaborate with communities.	NEPA, Health Department	Staff time	Ongoing
<b>Objective 7: Establish a sustainable role and configuration for the GRWMC by narrowing its focus and building its capacity.</b>				
Action 7.1: Sharpen the focus of the GRWMC to well-defined functions.				
The GRWMC now brings together all categories of stakeholders and is an important element of sustainable WSM in the GRW. Its functions must be clearly defined to ensure that they can be maintained with minimal financial inputs. The GRWMC's core functions are communication facilitation, advocacy, stakeholder mobilization, and awareness.	A clear statement of GRWMC functions that will survive after the R2RW Project ends.	GRWMC Executive Committee, SWB	Staff time	Year 1
Action 7.2: Adopt a structure and legal form that is appropriate to support these functions.				
The structure and legal form of the GRWMC are key elements of its sustainability.	GRWMC structure reviewed and revised as needed. GRWMC established as a legal entity.	GRWMC Executive Committee, SWB	Staff time	Year 1
Action 7.3: Strengthen the capacity of the GRWMC to manage its operations, communicate with stakeholders, conduct awareness campaigns, and raise limited funds.				
The GRWMC is still a relatively new body and needs to be strengthened to support its current and planned functions.	Training provided to relevant staff in administration, awareness, and communications.	SWB, R2RW	Staff time; Hiring of trainers	Ongoing

RATIONALE	INDICATIVE OUTPUTS	RESPONSIBILITIES	RESOURCES NEEDED	TIMING
Action 7.4: Shift membership to the Parish and community levels to include GRW interest groups such as raftsmen, farmers (large and small), and business owners				
The GRWMC is more likely to be sustained if it is supported by persons with an economic stake in the watershed.	Interest sectors (bee & pepper farmers, ecotourism operators) helped to form groups/cooperatives. GRW on agenda of meetings of identified groups.	NUCS; PC political, administrative, & technical functionaries. SDC-CDOs.	Staff time; Hiring of trainers	Year 1 Ongoing



## Actions of the Great River Watershed Management Committee

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### GRWMC Grant Approval Meeting March 7, 2003

#### Present

Barrington Taylor	GRWMC Vice Chair and NEPA
Neville Williams	R2RW and past Chair W&STF
Lisa Golding	Chair PATF and NWC
Vachesha Foster	Assistant Secretary, GRWMC
Durval Grapine	Chair C&ETF and Forestry Department
Sadie Dixon	Chair P&MTF and RADA
Mark Nolan	R2RW

#### 1. Rushea Farmers Group

##### *Purpose*

Increase scotch bonnet pepper production for export market in a manner that is environmentally friendly. The project will involve 22 farmers planting 13 acres.

- Farmers will provide all labor for land preparation.
- A rough analysis is that the project will generate 3.8 Million in total sales.
- Pest control will be done using Dipel, a bacterial compound commonly used in organic farming.
- This project will support watershed protection through enhancing livelihoods in a manner that is environmentally sustainable.
- A condition of approval is that income generated will be used for community environmental improvements.
- Monthly meetings will be held of the farmers group where a specific activity is to be identified that will improve an environmental condition in the community.
- The admin costs budgeted should be a community contribution.
- Project approved with a budget of 739,061.

#### 2. Cedar Grove Farmers Group

Purpose: To increase the production and yield of scotch bonnet peppers in an environmentally friendly manner using irrigation technology.

- Farmers will provide all labor for land preparation (delete 61,000 from budget).
- A rough analysis is that the project will generate 1.5 Million in total sales.
- Pest control will be done using Dipel, a bacterial compound commonly used in organic farming.
- This project will support watershed protection through enhancing livelihoods in a manner that is environmentally sustainable.
- A condition of approval is that income generated will be used for community environmental improvements.
- Monthly meetings will be held of the farmers group where a specific activity is to be identified that will improve an environmental condition in the community.
- Admin costs should be a community contribution.
- Project approved with a budget of 476,282

### **3. Hermitage Honey Producers**

#### ***Purpose***

Increase the number of bee colonies dramatically from 25 to 176 and improve livelihoods through beekeeping and honey production.

- The project will lead to environmental protection because beekeepers will have an interest in preserving trees.
- An expected yield of 19 liters per hive with three harvests per year at 100 per liter will yield over \$1 Million in outputs.
- The admin costs should be considered a community contribution.
- Some of the technical inputs can come from task force members and these funds turned over to the GRWMC.
- Most of the project funds are for materials and equipment to expand and modernize the extraction process currently being used.
- Project Approved with a budget of 716,250.

### **4. Content Progressive Youth Club**

#### ***Purpose***

Construct bathrooms, showers, and changing room adjacent to the existing community center using water harvesting, and a wetland disposal system:

The existing community center was built in the 1970s and is used extensively for JAMAL classes, infant school classes and as a sports recreational facility. Proper bathrooms are needed critically to relieve unsanitary conditions and improve the utility of the facility. A basic school currently housed at a local church is to be moved to the community center once the bathrooms are complete. The center services both Content and Milestown.

- A letter was presented from the SDC to give permission for construction.
- The community has agreed to provide unskilled labor. Mr. Edwards, a local contractor has donated a cow to feed workers during construction.
- The budget and implementation was prepared with the assistance of Neville and Jason based upon several meetings with the community.
- A question was raised if the transportation costs were sufficient, and after discussion it was determined that adequate funds were budgeted.
- The community should plant trees around the center after completion of the Project.
- The project was approved unconditionally with a budget of 703,276

## **5. Mafoota Citizens Association**

### ***Purpose***

To construct a community car wash and laundry facility adjacent to the existing community center to provide an alternative to existing practices that are polluting the water source.

- This project has had a long germination due to the need to balance the expectations of the Citizens Association with the Youth Club for a multipurpose facility that could be built at a reasonable cost.
- The center piece of the structure will be a retrofitted container (20' by 8') on a large concrete slab with one side devoted to a laundry facility and the other for a car wash.
- A condition of approval is that a MOU be developed between the Citizens Association, the Youth Club and R2RW that will specify how the facility will be managed. Fees are to be collected for payment of an attendant, supplies and expenses such as the water bill.
- Water harvesting will be incorporated into the design along with a constructed wetland for wastewater. A grease trap will be used on the car wash side.
- The MOU will also specify that the changing of oil will not be allowed on the site.
- Signs should be posted in the area stating that washing of cars and laundry in the river will no longer be permitted.
- Project Approved with budget of 786,225

### **General Points**

- Proper signs should identify all Projects.
- Income generating projects should include a stipulation that a small portion of funds be used for community environmental improvements.

## **Report of Rio Grande Watershed Management Committee Grant Selection Committee Meeting on June 10, 2003**

A Meeting of the Rio Grande Grant Selection Committee was held on June 10, 2003 at the NEPA Port Antonio Office. The Grant Selection Committee is a sub-committee of the Executive of the Rio Grande Watershed Management Committee.

### **Present**

Harvey Webb	Chairman, RGWMC
Col. Wallace Sterling	Vice Chair, RGWMC
Winnifred Moore	Secretary RGWMC
Lorenzo Hill	Treasurer, RGWMC
Maislyn Campbell	Chair PAWG, RGWMC
Dr. Logan	Vice Chair, L&CTF, RGWMC
Herman Palmer	Secretary, W&STF, RGWMC
Selvyn Thompson	NEPA
Mark Nolan	R2RW

Grant Applications discussed were as follows:

### **Corwall Barracks Water Supply**

Detailed estimates prepared by Nigel Lowe of the NWC were considered. The total amount was 979,690. The project involves construction of a new entombment at a water source identified in the community and the laying of 40 chains of 4 inch PVC pipe to connect to the existing system. The grant was approved with the following conditions:

- A contractor from the immediate area will carry out the work. Bids will be requested from local contractors to perform the majority of the work.
- The approved amount was \$900,000 – this being the current Jamaican dollar equivalent of US\$15,000 limit. The balance will have to come from inputed labor from the community.
- As much as possible, funds will be disbursed to suppliers.

### **Comfort Castle Water Supply**

Detailed estimates prepared by Nigel Lowe of the NWC were considered. The total amount was 649,145. This Parish Council System serves the communities of Millbank, Comfort Castle and Ginger House. The project involves improvements to the existing entombment at Coco Springs, replacing pipes to the chlorination tank, and the laying of 20 chains of 4 inch PVC pipe to connect to the existing system. Upgrades to the existing distribution were also identified but not budgeted. The grant was approved with the following conditions:

- A contractor from the immediate area will carry out the work. Bids will be requested from local contractors to perform the majority of the work.
- The approved amount was \$900,000. It was considered that much of the existing 2-inch galvanized distribution pipe would also need to be replaced, and therefore an additional \$250, would be allocated for this.
- The community is expected to contribute unskilled labor for the project.

- As much as possible, funds will be disbursed to suppliers.
- The Parish Council will be informed of the grant approval, and support requested in the construction phase.

#### **CASE: Constructing Demonstration Plots of Sustainable Environmental Practices**

A detailed proposal supplement from CASE was considered to establish demonstration plots of sustainable environmental practices at the CASE tutorial Farm. The Project will establish hydroponics, spice and ornamental fish production unit to work in tandem with existing waste treatment structures for the livestock tutorial farm. An amount of 788,700 is requested from R2RW. The grant was approved with the following conditions:

- Further detail will be provided on the outreach strategy for the Project by CASE. Dr. Logan is to submit this as part of an amended supplement to the grant proposal.
- The liner for the ponds will be obtained from existing stock at R2RW, and the appropriate amount charged to the grant.
- The budget of J\$788,700 was approved subject to the point above.

#### **Fellowship Drainage Project**

An estimate to complete the Fellowship drainage project was submitted from the Portland Parish Council. The estimate was for J\$1,589,102. The estimate was considered, but members felt that further clarification was required from the Parish Council on the details of the estimate. Mark Nolan will schedule a meeting with the Building Department on June 11<sup>th</sup>.

## Watershed Training Sessions

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### Conducting Effective Meetings Workshop

#### AGENDA

Prayer and Welcome

Apologies for absence

Working Session

8:30 – 10:30      Unfreezing Exercise  
                         Discussing Ground Rules  
                         Questionnaire  
                         Meetings At Work Task Sheet  
                         Listener's Questionnaire

10:30 – 10:45      BREAK

10:45 – 12:15      Reviewing Effective Meetings

12:15 – 1:15        LUNCH

1:15 – 2:15         Types of Business Meetings  
                         Guide to Conducting Effective Meetings  
                         Meetings and Conference Checklist

2:15 – 3:15         Taking Minutes at a Business Meeting

3:15 – 4:15         Time Management

Adjournment

## **Wetlands Education Workshop**

NEPA Office, 5 Smatt Road, Port Antonio, Portland, June 16, 2003

- 8:45 Arrival and registration, Wetland Quiz
- 9:00 Invocation
- 9:05 Welcome – Leo Douglas, Ridge to Reef Watershed Project
- 9:10 Opening Remarks, and Introduction of Facilitators (Michele Kading and Lisa Sorenson)
- 9:20 *West Indian Whistling-Duck and Wetlands Conservation Project: History and Current Activities*
- 9:40 Introduction to Oak Hammock Marsh Philosophy – Interpretation and Learning
- 9:55 Icebreaker Activities
- 10:15 Wetlands of Jamaica – Harvey Webb, Executive Director, Portland Environmental Protection Agency
- 10:35 *Wondrous West Indian Wetlands: Teachers' Resource Book – Overview & Demonstrations*  
Chapter 1 – Wet and muddy: What are wetlands?  
Chapter 2 – Wild, wet and weird: What lives in wetlands?  
Pour-a-pond demonstration
- 11:00 Break
- 11:10 More from the Workbook  
Chapter 3 – Wetlands are not wastelands: What do wetlands do?  
Chapter 4 – Going, going, gone: What is happening to wetlands?  
Chapter 5 – Save the wetlands – save the world! We *can* make a difference.  
Chapter 6 – Seeing for Yourself: Wetland Field Trip Techniques
- 12:10 Lunch
- 12:40 Form groups, choose activities, begin preparation
- 1:15 Group Presentations
- 3:15 Conclusion, final activity demonstrations, and evaluation
- 4:00 Vote of Thanks

***Come forth into the light of things, Let nature be your teacher – William Wordsworth***

## Great River Green Village Award Program

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### Great River Green Village Award Program

#### **Background**

The Green Village Award Program is an initiative of the Great River Watershed Management Committee (GRWMC) in which rural communities of the Great River Watershed will be recognized based on environmentally sound stewardship activities. Awards will be granted in four categories guided by agreed criteria for Gold, Silver, Bronze or levels of excellence in environmental stewardship certification. The program builds on the concept of the “Best Kept Community” awards previously facilitated by the Social Development Commission in the 1970’s and 80’s. The Green Village Award Program gives recognition to communities that engage in active stewardship of their surroundings.

R2RW strongly endorses this approach of working with communities and existing organizations in watersheds as partners in solving community-level problems and enhancing local governance and stewardship. This is in direct support component 1 and 2 of R2RW to “*Work with local organizations to identify and promote sustainable environmental management practices*”, and “*Identify existing incentives and constraints affecting the enforcement of selected existing environmental regulations*”.

#### **Purpose**

The Green Village Award Program is an annual stewardship award program that will:

- Give recognition to communities in the Great River Watershed that implement specific stewardship activities.
- To encourage local governance through the cooperation of communities, state agencies, ENGOs, and private sector.
- Permit the GRWMC to gauge the impact of its activities at the community level.

#### **Criteria**

Communities participating in the program will be evaluated on the basis of the degree to which they meet the following criteria:

1. The establishment of at least one active enforcement or environmental watch group such as a junior ranger program, a Police Youth Club, or a Neighborhood Watch Committee that monitors environmental offences in the community.
2. The establishment of signs to address at least one environmental problem in the community (such as littering or dumping of garbage).
3. The implementation of at least three (3) public awareness/education activities for the year.
4. Tree Planting and/or reforestation of local denuded areas.
5. The beautification of public places - roads, parks (at least one area per year).



6. Community clean-ups such that no garbage is visible on streets, gullies and rivers.
7. The establishment of adequate solid waste bins, garbage disposal facilities, etc.
8. The establishment of a working linkage with the National Solid Waste Management Authority (NSWMA). This should result in at least the writing of letters to schedule initial meetings, and should result in some type of arrangement for regular garbage removal. Ideally the community should also try to make its own arrangements to collectively pay for regular pickups, perhaps with persons who have a truck from within their own community.
9. To reduce the amount of garbage in the community and in each household through the establishment of at least one recycle, garbage sorting or composting activity.
10. The encouragement of church leaders (via letters, meetings and planned activities) to adapt/incorporate "Faith and Environment" activities.

### ***Implementing Committee***

Edward Richards	Forestry Department (Western Region)
Barrington Taylor	NEPA (St. James)
Basil Dunn	Public Health Department
Durval Grapine	Forestry Department
Ian Walcott	Western Parks and Markets
Maria Protz	Ridge To Reef Watershed Project
Sadie Dixon	RADA (St. James)

### ***Judges***

An inter-agency panel of judges from the National Environment and Planning Agency (NEPA), the Rural Agricultural Development Authority (RADA), the Social Development Commission (SDC), the National Water Commission (NWC), the Public Health Department, the private sector, the National Solid Waste Management Authority (NSWMA), the Montego Bay Marine Park and other local non-governmental agencies, will assess the efforts of communities that apply to participate. Prominent members of the watershed such as ministers of religion and police officers will also be approached to assist with the judging.

### ***Judging Procedure***

Communities applying to the program (see attached application sheet) will be provided with a Program Kit explaining how to do activities under the program. This would be followed by a pre-program community inspection by the judges to determine the existing situation. Several visits would then be made to the community over the proceeding months during which time a score sheet would be used to judge and finally rank the communities.

### ***Corporate Sponsors and Prizes***

The Cool Runnings water company in Montpelier, and Texaco Caribbean Ltd. have to date agreed to sponsor prizes for the competition and other corporate bodies have been approached and are expected to join the program as sponsors. Qualifying communities will also be recognized with road signs sponsored by R2RW that welcomes visitors by noting "You are Entering a Great River Green Village"!

Winners will be announced on National Wood and Water Day October 4, 2003.

***Program Launch***

The program will be officially launched by United States Ambassador Sue McCourt-Cobb as part of Earth Day 2003 activities at Rafter's Rest in Lethe, St. James on Tuesday April 22, 2003.

**“Green Village” Award**  
**Grand Prize: \$50,000.00!!!**

**Application Form**

**Community:** \_\_\_\_\_

**Parish:** \_\_\_\_\_

Name of lead Community Based Organization (CBO): \_\_\_\_\_

Contact Person: \_\_\_\_\_ Phone number: \_\_\_\_\_

Address: \_\_\_\_\_

Date submitted: \_\_\_\_\_

**Deadlines** for Submission: June 30<sup>th</sup>, 2003

**Winners to be announced on National Wood and Water Day, October 4<sup>th</sup>, 2003**

**THE “GRAND PRIZE” FOR THE “GREENEST VILLAGE” IN THE GREAT RIVER WATERSHED:  
\$50,000.00**

Please state how this money would be used to benefit the community, should your village win Grand Prize:

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

**Judges First Visit:** Once your application has been received, you will be contacted to arrange a meeting for judges to visit your community to assess its current environmental condition.

Kindly submit your application form to one of the following locations:

Mr. Barry Taylor  
National Environment and Planning  
Agency  
Catherine’s Hall  
Montego Bay, St. James  
Phone: 979-9600 or by fax: 940-6805

Miss Sadie Dixon  
Rural Agricultural Development Authority  
Catherine’s Hall  
Montego Bay, St. James

Miss Ivel McLean  
Social Development Commission  
Albion Road, Montego Bay  
Phone: 940-6596  
Fax: 940-7068

Montego Bay Marine Park  
Pier 1, Montego Bay, St. James  
Phone: 952-5619  
Fax: 940-0659

## Draft Report on Plant-a-Tree Campaign

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The Plant a Tree Program commenced October 2002 as a three-year initiative of the GRWMC and R2RW that encourages communities and persons to plant trees in the GR watershed for economic, cultural and environmental purposes.

The objectives of the Plant a Tree Program are:

- To promote improved ground cover in the GRW through the establishment of timber and fruit trees.
- To partner with the Forestry Department in support of its private tree planting program and ongoing public awareness activities.
- To partner with the Ministry of Agriculture Fruit Tree Crop Project to promote the establishment of orchard crops.
- To build on and use in public awareness strategies, positive cultural tree planting practices such as honoring new babies by planting the umbilical cord with a tree, honoring persons with trees as gifts for recognition of accomplishments, recognition of special events, memorials, etc.
- To enhance public awareness of, and appreciation for, the various types of trees, their purposes and differences.

### Funding Source and Accounting Procedures

The Program was funded by R2RW with a budgetary allocation of J\$750,000 in the first instance. An account was opened January 2003 with the Bank of Nova Scotia, Sam Sharpe Square, Montego Bay to which funds were disbursed periodically. As at September 30, 2003 J\$550,000.00 had been disbursed to the Program account. The account was managed by the Plant a Tree Program Coordinator with signatories as follows:

- Nerval Brown, Program Coordinator
- Sadie Dixon, GRWMC (PMTF Task Force)
- Barrington Taylor, GRWMC and NEPA
- Hugh Graham, R2RW

The accounting procedures employed provided the opportunity for improving the financial management capacity of the GRWMC through two members involved in the management of funds for watershed improvement. Monthly financial reports were submitted to R2RW.

### Seedlings Production and Procurement

The Program plan was to produce 50,000 assorted timber seedlings for distribution in the first year. Through an arrangement with the Forestry Department 33,934 assorted timber seedlings were produced at the Williamsfield Nursery, Manchester. Seedlings were transported for hardening off and holding with a private sector company at Montpelier, James (Montpelier Citrus Company) at no cost to the Program. Montpelier was therefore the plant distribution center for the Plant a Tree Program.

Fruit tree seedlings were procured from the Ministry of Agriculture's Fruit tree Crop Project nursery at Bodles Agricultural Research Station, St. Catherine.

### Seedlings Distributed by amount, type, location and beneficiary

The table below shows tree seedlings distributed by amount, type, location and beneficiary.

No. of Seedlings	Species	Destination/Location	Beneficiary
500	West Indian Cedar	Bethel Town	Kew Park Farm
500	Honduras Mahogany	Bethel Town	Kew Park Farm
155	West Indian Cedar	Brunt Ground	Kew Park Farm
4	Honduras Mahogany	Brunt Ground	L. Munroe
23	Honduras Mahogany	Round Hill Hotel	L. Munroe
34	Jamaica Mahogany	Round Hill Hotel	Korea Sports Club
20	Spanish Elm	Round Hill Hotel	Korea Sports Club
20	West Indian Cedar	Round Hill Hotel	Korea Sports Club
20	Blue Mahoe	Round Hill Hotel	Korea Sports Club
20	Caribbean Pines	Round Hill Hotel	Korea Sports Club
3	Lignum Vitae	Round Hill Hotel	Korea Sports Club
5000	West Indian Cedar	Cedar Grove	Cedar Grove Community
1500	Honduras Mahogany	Cedar Grove	Cedar Grove Community
700	Ackee	Cedar Grove	Cedar Grove Community
320	Blue Mahoe	Valley Plantation	Chris Chapman
325	Jamaican Mahogany	Valley Plantation	Chris Chapman
675	Honduras Mahogany	Valley Plantation	Chris Chapman
80	Spanish Elm	Valley Plantation	Chris Chapman
100	Caribbean Pines	Valley Plantation	Chris Chapman
454	West Indian Cedar	Valley Plantation	Chris Chapman
278	Caribbean Pines	Stone Henge	Silas Coley
250	Honduras Mahogany	Stone Henge	Silas Coley
52	Spanish Elm	Stone Henge	Silas Coley
105	West Indian Cedar	Stone Henge	Silas Coley
100	Jamaican Mahogany	Stone Henge	Silas Coley
74	Blue Mahoe	Stone Henge	Silas Coley
50	West Indian Cedar	Senior/Cambridge	K. McKenzie
25	Honduras Mahogany	Senior/Cambridge	K. McKenzie
10	Jamaica Mahogany	Senior/Cambridge	K. McKenzie
50	Honduras Mahogany	Lethe	Francis Tulloch

No. of Seedlings	Species	Destination/Location	Beneficiary
100	Jamaican Mahogany	Lethe	Francis Tulloch
25	Spanish Elm	Lethe	Francis Tulloch
100	Caribbean Pines	Lethe	Francis Tulloch
120	Naseberry	Knockalva Agricultural School	Knockalva Agricultural School
40	Nutmeg	Knockalva Agricultural School	Knockalva Agricultural School
76	Guava	Knockalva Agricultural School	Knockalva Agricultural School
56	Jackfruit	Knockalva Agricultural School	Knockalva Agricultural School
4	Nutmeg	Montpelier	O. Gilpin
24	Guava	Montpelier	O. Gilpin
4	Jackfruit	Montpelier	O. Gilpin
<b>TOTAL 12137</b>			

Because of the years timber trees take to generate an income, farmers and prospective farmers are requesting crops such as coconut, avocado, June Plum and soursop. Income can be derived from fruit trees within four years, however none of these were on-hand for distribution.

Beneficiary records are kept by the Coordinator and include type and number of plants received, treatments and recommendations.

## Water Quality Monitoring in the GRW

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### **The Water Quality of the Great River Watershed, St James/Hanover/Westmoreland Forth Quarterly Report**

October 1, 2002 – January 31, 2003, submitted February 10, 2003.

Due to Kayan being not well during the mid to later parts of December and unrealistic expectations for the Christmas period, permission was sought and obtained to submit this report one month later than planned. Data tables for the Great River (GR) and for the Rio Bueno (RB) and graphs illustrating the variations of the key parameters for which we now have a reasonable amount of data are attached, as is a claim for disbursement of funds for the final quarter. The report contains an update on the last report's data discussion

It must be emphasized that the data are still preliminary, as some of the quality control exercises have not been completed. Some of the data appear suspect but their validity cannot be determined until the complete data set has been compiled. The data are for discussion within the R2RW project and not for wider dissemination without reference back to Dr. A.M. Greenaway.

#### **Activities During Fourth Quarter**

##### ***Field Trips***

Field trips to the GR were held on October 23-24 and November 26-27 and the RB on 27-28 November. The field trip in October was lead by Kayan with Ms. Debbie-Ann Ramsay, a fellow graduate student, substituting for Dr. Greenaway. The field trips scheduled for mid December were not conducted because a support team (two of Dr. Greenaway, Mr. Taylor, Ms. Ramsay) could not be assembled and Kayan was not well.

##### ***Outreach***

A presentation based on the third quarterly report was made by Dr. Greenaway to the annual general meeting of the Great River Watershed Management Committee on November 6. Dr Greenaway participated in the January R2RW tour of inspection of the sanitation initiatives that they have made in the Great River Watershed. A poster on the Water Quality Monitoring Programme and the results obtained during 2002 was prepared and subsequently displayed at the February 1-2 World Wetlands Day function.

##### ***Analytical Work***

Although Kayan is now able to conduct all analytical methods for water samples, the laboratory has been encountered difficulties with blanks for total dissolved N and P requiring the rejection of some recent data. Quality control data are now routinely compiled so detection limits and precisions should soon be available.

##### ***Light Meter***

The data still await analysis.

## **Flow**

Flow data are accumulating and correlations between the meter and float methods of measurement and the WRA data are being developed.

## **Course Work**

The oral examination on the literature review is set for late February.

## **Thesis Preparation**

A thesis plan has been considered which identifies all field and analytical work still to be done and other information that needs to be acquired.

## **Results to Date**

The structure of the data tables is detailed in an appendix to this report.

On the graphs a common scale has been used for any particular parameter to allow for easy comparisons. Mass units have been used on the y axes. When points are off scale the actual concentrations have been entered (see Figure 1 Chesterfield for example). SRP and NH<sub>3</sub> have been presented together (figure 2) only because they are of similar magnitudes.

## **Discussion of Great River Data**

### **General Comments**

The trends shown in the data are not significantly different from those reported on in the 3<sup>rd</sup> quarterly report, which covered data to trip 6, and thus the conclusions drawn in that report are still relevant.

### **High (Low) Lights**

The Chesterfield site continues to show elevated nitrogen, phosphorus and silica when compared to other sampling sites, although flow at the site is often low. Fecal coliforms are also high there (as elsewhere). During the November field trip an extra sample was taken on a tributary upstream of the Chesterfield sampling site and this showed similar levels of contamination. *This suggests that the land use practices in the upper reaches of the river are leading to contamination of the river and that this could be a focal point for intervention.*

Fecal coliforms continue to be elevated (>400MPN on any one occasion) at all river sites except Stonehenge and the contamination frequently extends well into Great River Bay.

Pesticide analyses on sediment collected at the Unity Hall road bridge during September indicated no detectable pesticide residues (Malathion, Bravo, Danitol and Pegasus tested for) suggesting that contamination of the river by pesticides is not a major issue. Farmers in the upper reaches of the river have indicated that they do not use pesticides to any great extent. Sediment does not accumulate in the river and so water samples will be tested at least twice during the remaining time of the project to further test this preliminary conclusion.

## **Discussions of the Rio Bueno Data**

The Rio Bueno data for November compare with those from the previous two sampling occasions. This river has higher nitrogen and lower phosphorus concentrations than the Great River. Fecal coliform contamination was not evident in November except close to the river mouth



where there is a small “squatter” community. The chlorophyll levels are very low suggesting little effective photosynthesis within the river, possibly because of the low phosphorus content.

### **General Conclusions**

The following conclusions were drawn in the 3<sup>rd</sup> quarterly report and still hold. In the Great River:

- The concentrations of TOxN, NH<sub>3</sub> and SRP are elevated and these species are being utilized in photosynthesis (elevated chlorophyll);
- Rainfall events lead to high suspended solids and peaks in N concentrations but not SRP concentrations;
- The suspended load reaching the coast is high, especially under flood conditions;
- The bacteria load in the river is significantly elevated; and
- Some phosphorus and ammonia may be being released to the coastal waters from particles carried to the coast by the river.

In the Rio Bueno:

- There are minimal changes in the chemistry of the Rio Bueno between its head waters and the coast despite the relatively high TOxN concentrations.
- By comparing the two rivers the apparently extensive photosynthesis in the Great River may be due to P rather than N contamination (TOxN concentrations are higher and SRP concentrations lower in the Rio Bueno where there is minimal photosynthesis evident suggesting that the low P concentrations are limiting the photosynthetic activity).

Additional conclusions resulting from recent data are:

- Pesticide contamination in the Great River appears to be minimal at most,
- Fecal coliform contamination is minimal in the Rio Bueno,
- There is frequently a brackish surface water layer in Great River Bay and this often extends as far as the reef in the vicinity of Harris Point and out to at least the mid point (north-south) of the Bay (on a transect that joins Harris Point with the northern point of the bay).

### **Plan for February 1 to May 30, 2003**

*February 2003.*

- The bacteria load in the river is significantly elevated; and
- Submit fourth quarterly report to R2RW (10<sup>th</sup>).
- Conduct geo-chemical and nutrient sampling trip in the GRW (4-5<sup>th</sup>).
- Collect water samples for pesticides in GRW (4-5<sup>th</sup>).
- Obtain WRA river flow data that are available to date and complete flow data calculations and correlations.

*March 2003.*

- Sample GRW and RB and analyze for nutrients and geo-chemical analytes (wk 2). Collect sediment samples in GR.
- Obtain available Met Office rainfall data for representative sites within the watersheds and compare data to river flow data.

*April 2003.*

- Conduct nutrient sampling trips in the GRW (wks 1 and 4). Collect water for pesticide analyses during first trip in month.

*May 2003.*

- Sample GRW and RB and analyze for nutrients and geo-chemical analytes (wk 4). Possibly resample for pesticides.
- Prepare final quarterly report (draft by May 31).

Modifications to the original plan:

- Water samples will be used for pesticide analyses.
- It was originally planned that field trips would end in February 2003 but the late start of the project and the slippage due to difficulties in effecting field trips have resulted in the field trips now running through to May. This will delay the production of the thesis. While the extensive ongoing work being done in data compilation and reviewing the literature should allow for the speedy preparation of the thesis it is unlikely that the thesis will be ready for submission before the end of July. We therefore have included in our work schedule one more “quarterly” report which will review the data generated from all field trips.

## **Financial Report**

As mentioned in previous reports the need to spend two full days in Montego Bay per field trip rather than the anticipated one-two days means that our per diem budget will be insufficient. We therefore request that the initial budget be increased by \$35,500.00 as detailed below to cover those additional expenses. We continue to assume that any expenses relating to attendance at R2RW meetings will be covered by R2RW.

The details for the disbursements and expenditures for the last quarter, bank reconciliation for the months of October – December 2002 and the requested disbursement for the final “quarter” are attached.

The enclosed Financial Projection Form shows the following:

- The DBML administration costs have exceeded funds disbursed to date for that budget item by \$24,008.60. This has arisen because no funds were disbursed for this item in the first quarter and there have been some bank charges that have been assigned to this item. The above amount however will be an overrun as delays in completing the project will require an unbudgeted for fifth quarter. We are prepared to cover that extra expenditure with laboratory funds.
- The expenditure for transportation has been minimal. This is because the Centre for Marine Sciences has yet to bill us for the use of the Centre's vehicle. They are about to rectify that.

- The expenditure on analyses is less than the funds allocated. This is because all analyses done have not yet been charged for and the anticipated pesticide analytical costs have not eventuated due to the difficulties in locating sediment within the river. These funds however will be expended in the final quarter.
- The amount requested for personnel exceeds the budget by 35,500.00 because of the greater time than anticipated being spent in the field.
- We are now requesting that a final project disbursement of \$276,675.00 be made.

**Appendix: Structure of Data Tables**

The data have been organised by sites. The top rows of the tables give the analytes being determined (the 3<sup>rd</sup> quarterly report gives details on these parameters). The dates of the field trips are given in column 1. Columns for flow have been included but the data are not yet ready for presentation. The time of sampling data have also not yet been included but for the Great River sampling starts on day 1 at Stonehenge at about 8.00am, follows the sequence of sites as presented in the table, and finishes at Lethe at about 2.30pm. The coastal sites are sampled on day 2 starting at about 7.00am and the Unity Hall dam sites are sampled after that at about 10.00 - 11.00am. Other gaps in the tables are because those analytes were not determined (or results had to be rejected) for the particular field trips. Some parameters are measured in the field and in collected samples upon returning to the lab.

Where relevant molar and mass units have been included for each parameter with the species whose mass has been used indicated in the units given (see row 2 for each site; mgCa/L for example indicates that the atomic mass of calcium has been used).

Where a parameter was determined but not detected 0 has been entered in the table for statistical purposes. Once the detection limits have been decided upon these will be altered to 2/3rds of the detection limit. For coliforms where the counts were too high to be accurately determined and therefore reported by the NEPA laboratory to be >1600, 1601 has been entered to allow for geometric means to be determined. For the marine sites close to the river mouth the salinities and temperatures vary considerably over a matter of seconds. Ranges were recorded in the field and the middle points of the ranges have been entered in the table.

## River Action with the Action Boyz

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### PRESS RELEASE

#### “River Action” with the Action Boyz

Starting in April, the Action Boyz – the very popular performers from Retrieve, St. James – will be taking two new “*shows on the road*” when they begin using participatory drama to help educate communities about issues related to water quality and sanitation. These issues are high priorities in the Great River Watershed, that the new programme – “*River Action” with the Action Boyz* – will seek to address.

An initiative of the Public Awareness Task Force of the GRWMC, the programme is the brainchild of a number of different agencies: the National Water Commission, the St. James Public Health Department, the Montego Bay Marine Park, NEPA, the Pesticide Control Authority, the Rural Agricultural Development Authority, and the other agencies working to enhance water quality and watershed management. All of the partners are engaged in the writing of two skits – one focusing on water and sanitation related problems, and the other focusing on harmful agricultural practices. But the skits will be dramatized and brought to life through the character development of the Action Boyz. The programme is expected to tour upper watershed communities first where the impact of water quality issues are most severe.

The Action Boyz are a group of entertainers who live in the Great River watershed. The group is consisting of seven (7) members, five of whom are brothers and two cousins. They have been performing since 1995 and have performed at hotels, stage show, concerts, parties and community event. Some of their performances include African dance, Acrobatics, chair dance and dramas. It is expected that their strong popularity will be used very effectively to attract community participation and to stimulate dialogue and discussion about community solutions to water quality problems.

The entire tour period will run from April to August 2003, as a pilot initiative. If it is successful, it will be extended to other areas of the watershed as well. The plays will also be documented as videos (by the Montego Bay Marine Park) to be broadcast and/or to be used by communities.

## **Brief on Successful Reactions to the River Action Program with the Action Boyz**

The Great River Watershed, located in four contiguous western parishes, is one of two watersheds specifically targeted under the Ridge to Reef Watershed project. Recent water quality monitoring activities conducted by the project revealed high levels of faecal coliform in the river, above the standard recommended by the National Environmental Protection Agency. Unhealthy practices in sewerage and garbage disposal, and inappropriate farming activities close to the river contribute to this problem.

Community sensitization to these issues and to residents' responsibilities in watershed management were core considerations in the public awareness program designed by R2RW project. It was recognized early that community based drama is an effective strategy in education. Hence, the River Action program was launched in April 2003.

The "Action Boyz" are seven young men, ranging in age from 19 to 30 years who all come from one extended family in Retrieve, (on the border of Westmoreland and St. James), where there has actually been a recent outbreak of typhoid fever. The Action Boyz had been performing dance routines in the hotel circuit of the wider Montego Bay area, when they were identified by members of the Ridge to Reef team, as a potential resource in the development of drama as a tool in watershed management education.

The Action Boyz under the coordination of the Public Awareness Specialist at Ridge To Reef and a coordinator sponsored by R2RW, and assigned to the Montego Bay Marine Park, were trained to perform two skits in Phase One of the River Action program. This program has been taken to seven communities in the Great River Watershed – namely –Pisgah, Mafoota, Cambridge, Catadupa, Stonehenge, Retrieve, and Seven Rivers. Phase One was just completed in September 2003. A second phase of the program has just been approved by USAID, and will begin in October 2003, with outreach to ten similar communities in the watershed area. Cambridge will, in fact, be one geographic location for focused attention in the Anchor projects which form the foundation of R2RW Fourth Year Work Plan. Sensitization there has already begun with the work of the Action Boyz.

The program has been highly successful, and has been well received in each community, with attendance averaging 130 persons of all age groups to each showing. Awareness of environmental hazards in these communities, which was recoded in our Baseline "Knowledge, Attitudes and Practices" Survey (2002) as non-existent, has been built. The two skits "Wah yuh dash wey nuh wash wey" focuses on improper disposal of garbage and sewerage in the river, and "Saal Ting and water inna trouble" deals with unhealthy and hazardous practices in agriculture and livestock rearing, and their impact on river quality. In Seven Rivers, as one example, after the skits, residents have started to put solid waste into bags and are planning, a clean up day, which NSWMA and Ridge to Reef Watershed project have been invited to support. Further, three households have started to dig pits for toilets. The Action Boyz, with planned input from an experienced acting coach, are expected to have an even greater impact in Phase Two of the River Action Public Awareness program.

## Water Harvesting and Constructed Wetlands Video

Audio Description	Shot List	Video Description
<b><u>Draft</u> Water Harvesting &amp; Sanitation Solution</b>		
<b>Music</b>	CU	Title fades up – <b>SUSTAINABLE WATER HARVESTING AND SANITATION SOLUTION</b>
<p><b>Narrator: (VO)</b></p> <p>The GRW link four parishes –Hanover, St. James, Westmoreland, and St. Elizabeth and has a population of about 85,000 people in over 40 small communities.</p> <p>In 1995, there was a typhoid outbreak in Retrieve that claim the life of one person and a number of others were report sick. The outbreak was believed to have caused by use as toilet by some.</p> <p><b>A person from one of the community:</b></p> <p><i>The river is not as it use to be.....sometimes the river is use as a toilet.....we can't even drink the water anymore.</i></p> <p><b>Narrator: (VO)</b></p> <p>The R2R watershed project has conducted water quality monitoring activities on the GR, which showed high level of faecal coliform.....meaning faeces are found in the water.</p>	<p>Zoom out/pan shots CU/MCU</p> <p>MCU/LS/CU</p> <p>MCU/CU</p> <p>MS zoom</p>	<p>A panoramic shot of the Great River Watershed (<i>sign, people and houses</i>)</p> <p>Shots of the Cornwall Regional hospital and the great river.</p> <p>Shot of community person speaking. Shot garbage near or in the river.</p> <p>Shots of improper pit latrines and the river.</p>

Audio Description	Shot List	Video Description
<p><b>Neville (in front of camera):</b></p> <p><i>Explaining that proper sanitary solutions do exist..... R2R along with other agencies are working with the communities.</i></p> <p><i>Neville or Jason speaking about solution at the WSTF meeting.</i></p> <p><b>Narrator: (VO)</b></p> <p>The R2RW project has initiated two projects in the great river watershed to demonstrate how to construct appropriate sanitation and water harvesting solution.</p> <p>The purpose of this video is to explain how these solutions are construct. This video will be useful for persons who live in the Great River and Rio Grande watersheds.</p>	<p>MS</p> <p>CU/MS</p> <p>Various shots</p> <p>CU/LS</p>	<p>Mr. Williams</p> <p>Shots of WSTF meeting</p> <p>Shots of home(s) and school(s) were the wetland and water-harvesting systems are constructed.</p> <p>Shots of Rio Grande and Great River watersheds??</p>

Audio Description	Shot List	Video Description
<b>Instructional Section</b>		
<p><b>Neville: (VO)</b></p> <p>Proper construction of wetland and water harvesting systems is very important.</p> <p>Harvesting water in the rural areas is very important because of the inconsistency of commercial water supply or the lack there of...</p> <p><b>Neville (in front of camera):</b> <i>A gutter is used to catch water from the roof...bamboo or ...</i></p> <p><i>...zinc can be used to construct a gutter as in the case of this one.</i></p> <p><i>The water tank is used to store harvested water from the roof. This tank can be either plastic or concrete</i></p> <p><b>Neville: (VO)</b></p> <p><i>A safe toilet is very important for the protection of health and the environment...the constructed wetland is a man made wetland that is use to treat sewage...a special grass is use in the constructed wetland to remove disease-causing organisms. It is natural... no chemical is needed.</i></p> <p><b>Neville: (In front of camera)</b></p> <p>Demonstrating how the wetland is constructed and the type and amount of materials that is used to construct it.... Neville continue to explain how wetland is hook up to the flush toilet</p> <p><b>Neville: (In front of camera)</b></p> <p>Explaining how the solar pump works in connection with providing water for the flush system.</p> <p><b>Neville: (VO)</b></p> <p>Explaining how what should and should not go into the wetland (the do and don't)</p>	<p>CU/MS</p> <p>CU</p> <p>Various shots</p> <p>Various shots</p> <p>CU/MS</p> <p>MS/CU</p> <p>MS/CU</p> <p>CU</p>	<p>Quick shots of guttering and wetland system in Retrieve.</p> <p>Shots of pipe dripping?? and rain</p> <p>Shots of Neville demonstrating how the bamboo can be used as a guttering system</p> <p>Series of shots with Neville demonstrating zinc guttering system at the Retrieve school.</p> <p>Footage of installation of a guttering system.</p> <p>Shots of Neville pointing and demonstrating the type of tank that is used. (in Retrieve and Pisgah). Other shots of tanks at individual homes.</p> <p>Footage of the constructed wetland in Retrieve or Pisgah at different angle.</p> <p>Shots of wetland constructed in Content</p> <p>Footage of how the wetland (anaerobic digester)</p> <p>Footage of solar system</p>



Audio Description	Shot List	Video Description
<p><b>A woman from one of the community:</b></p>		
<p>Testifying how she feel about working on the wetland system</p>	MS/CU	Shots of women speaking
<p><b>Children saying how they feel about their new toilet system: (Retrieve)</b></p>	MS	Shot of school and children
<p><b>Neville: (In front of camera)</b></p>		
<p>Saying how much the system cost for householders.</p>	CU	Shot of slides with breakdown of cost.
<p><b>Narrator:</b></p>		
<p>Explaining the benefit of the system to the river.</p>	LS/MS/CU	Shots of clean healthy river
<p>Music</p>		<p>Credit role...  USAID logo  NEPA logo  R2R logo</p>

## Do's and Don'ts of Watershed Management



### **Tips to Protect the Soil**

**Do** practice minimum tillage, or use individual basins on hillsides to minimize soil loss.

**Do** practice alley cropping and plant leguminous hedgerows such as **Gliricidia** (quick stick), or **Calliandra**. These plants help to restore soil nutrients.

**Do** plant shrubs and grasses on roadsides. Flowering plants, such as bougainvillea and hibiscus not only stabilize the soil, they also provide beauty!

**Do** plant low shrubs as excellent hedges and borders to provide beauty and privacy. They can be pruned and maintained easily.

**Don't** use fire to clear your land for any purpose. Fire depletes soil nutrients and causes erosion.

**Don't** plant on land that is extra rocky or stony. These soils do not contain many plant nutrients and dry out easily in drought periods.

**Don't** cultivate or till the soil unnecessarily especially on hillsides where loose soil is easily washed away.

**Don't** remove too many weeds, mulch or other ground cover to expose the soil to the elements. Exposed soil washes away easily and will dry out.

### **Tips for Tree Crops**

**Do** plant tree crops such as lime, pimento, guava, and soursop in pockets of deep soils on slopes. They will help to stabilize the soil.

**Do** prune fruit trees to limit shade for any shorter crops growing below, and prevent wind damage.

**Don't** let fruit trees grow too tall as they can become unmanageable and make it difficult to reap fruits.



### **Tips for Timber Trees**

**Do** plant timber trees, fruit trees and grasses on steep slopes. They don't require land tillage, and are good for soil and water conservation.

**Do** let timber trees grow tall so that they will be worth more money when they mature.

**Do** let trees, bamboo and tall grasses grow along riverbeds, but take care that their leaves and fruit do not fall in the water to decay and cause pollution.



**Don't** plant trees too near to buildings or fences. As they grow, their roots may damage pipes and foundations and falling branches can be dangerous.

**Don't** plant trees that will grow very large on steep road banks. The branches and fruits of large trees can be a danger, and such trees may be easily uprooted during heavy winds causing road blockage or landslides.

**Don't** plant weak seedlings that will grow poorly. Always select from the best quality mother tree you can find to set healthy seedlings or cuttings.

### ***Tips for Vegetables***

**Do** use dried mulch between your crops to limit weeds and to replenish the soil.

**Do** space compatible crops close together. This makes maximum use of land and soil nutrients, and the plants may be thinned out later.

**Don't** plant root crops, vegetables, herbs or spices on steep land that require tillage. Disturbing the soil may lead to soil erosion and land slippage.

**Don't** plant vegetables or root crops too near to rivers or ponds. Fertilizers, pesticides, plant trash and soil may wash into the water causing pollution.

**Don't** plant a crop just because others are doing so, unless there is good market.



**Don't** plant more than you can market at a fair price.

**Don't** "force ripen" your fruits by picking them too early.

**Don't** reap immature or damaged crops, as these may not be marketable.

### ***Tips for Livestock***

**Do** keep animals penned and feed them grass ***Calliandra*** or quick stick cuttings.

**Don't** tie animals too close to rivers, streams or ponds. Their waste will pollute the water.

**Don't** let animals graze and trample tree seedlings and crops. Damages are expensive and animals can be impounded.

### ***Tips for Pest Control***

**Do** practice inter-cropping and crop rotation, to help restore soil nutrients, and to ensure that pest populations do not become too large.

**Do** remove weeds and trash that are too close to crops so that snails, slugs, caterpillars and mice do not have somewhere to hide and become a problem.

**Do** Spray ONLY IF you have specific pest and diseases that need to be controlled.

**Don't** wash sprayers or your crops in rivers or ponds, to ensure that chemicals do not pollute the water.

**Don't** dispose of pesticides or other farm chemicals in rivers or ponds.

## Gender Analysis of R2RW Grant Fund Submission

### Gender Analysis of Grant Applications for the Great River Watershed as of December 5<sup>th</sup>, 2002

Title	Purpose	Gender Description of Beneficiaries	Indicators to be Used to Assess Gender Equity	M +/-	F +/-	Y +/-	Gender Concerns and Issues to be addressed	Status	Assessment
<b>Retrieve All Age School (Parent Teachers Association)</b>									
Retrieve All Age School Water Harvesting and Sanitation Project <b>Contact:</b> Yvette Woolery 373-1646	To reduce dependency on NWC and decrease effluents entering Great River & increase public awareness of wetland technology Reduce risk of typhoid fever <b>Sector:</b> Water & Sanitation	Approximately 200 students – both males and females. Plus teachers of the All-Age school. Parents.	Enhanced environmental health	+	+	+	Who (males or females) will be keeping the facilities clean?	Approved. All construction completed.	Training in use and maintenance of the facilities was done by a male (Neville Williams) and provided to all students and teachers in the school. This training has therefore been gender balanced.
			Training in proper maintenance of facility.	+	+	+	Will gender roles come into play here?		However, only men were trained/employed as labourers on the site and this proved problematic at times as they expected to be paid. Little community social capital was generated and the PTA did not raise their own funds.
			Training in construction building of solutions.	+	-	n/a			Labour was to have been donated by the community but this did not happen to the degree desired.

Title	Purpose	Gender Description of Beneficiaries	Indicators to be Used to Assess Gender Equity	M +/-	F +/-	Y +/-	Gender Concerns and Issues to be addressed	Status	Assessment
			Greater public awareness of sanitation issues and solutions.	+	+	+			The woman contact person seems to have been a figurehead and not the real leader. The fact that she was "given the cheque" for the project during the handing over ceremony caused some friction in the community. It is not yet clear whether or not the project has positively impacted social capital in the community.
			Enhanced community management of the facility.	+	+	+			Awareness of environmental health issues and new solutions has increased however.
			Enhanced relationships among youth, men, women, etc. Increased social capital	+	+	n/a			The overall question of "who" is going to be most responsible for maintaining the facility and caring for it still needs to be determined.

Title	Purpose	Gender Description of Beneficiaries	Indicators to be Used to Assess Gender Equity	M +/-	F +/-	Y +/-	Gender Concerns and Issues to be addressed	Status	Assessment
<b>Pisgah All Age School</b>									
Sanitation and Water Harvesting at Pisgah All Age School Contacts: Sonia Madden-Education Officer 965-2509	To improve sanitary facilities and improve water collection and storage Sector: Water & Sanitation	Approximately 300 students – both males and females. Plus teachers of the All-Age school. Parents.	Enhanced environmental health	+	+	+	Who (males or females) will be keeping the facilities clean?	Approved. Construction on-going. Excellent participation by local women.	This project has been very strong in promoting gender equity. The contact for the project is a male teacher who has been a strong role model for promoting sanitation and the importance of cleaning up which are usually considered to be “women’s work”. At the same time, the project is clearly seen to be under the leadership of the school principal (a woman) and the PTA which is also mostly composed of women.
			Training in proper maintenance of facility.		+	+	Will gender roles come into play here?		Most notably, the project has trained 12 local community women (most of whom are parents) in basic construction techniques and they have been very much involved in the building of the facility – contributing their time and labour to the project. This has helped to breakdown ‘stereotypes’ about what type of work is appropriate for women and what women can and cannot do.

Title	Purpose	Gender Description of Beneficiaries	Indicators to be Used to Assess Gender Equity	M +/-	F +/-	Y +/-	Gender Concerns and Issues to be addressed	Status	Assessment
			Training in construction building of solutions.	n/a	n/a	n/a			However, it has also take a lot of time from the women involved and there is a bit of an expectation that they will be financially rewarded at some point through another initiative. One caution is that the same women will be expected to maintain the facility, rather than the responsibility belonging to the school as a whole.
			Greater public awareness of sanitation issues and solutions.	n/a	+	n/a			Another major accomplishment of the project is that it has given rise to further spin off activities, such as the community clean-up of the source of the Great River. This activity involved students, teachers, parents and other community members in a very positive activity and has clearly helped to enhance relationships among the youth and their elders, as well as to help strengthen social capital within the community. Evidence of the strengthening of social capital has also been achieved through the community's local fund raising efforts for the project.



Title	Purpose	Gender Description of Beneficiaries	Indicators to be Used to Assess Gender Equity	M +/-	F +/-	Y +/-	Gender Concerns and Issues to be addressed	Status	Assessment
			Enhanced community management of the facility.	+	+	+			It is expected that public awareness has also increased and that environmental health will also continue to improve.
			Enhanced relationships among youth, men, women, etc. Increased social capital	+	+	+			Very high marks as an example of a project that has been "gender equitable".
<b>Mafoota Citizen's Assoc. &amp; Mafoota Youth Club</b>									
Wash House/Car Wash <b>Contact:</b> Pamella Campbell or Deanna Hunter 818-1952	Finance building of wash house and car wash  To prevent river pollution <b>Sector:</b> Water and Sanitation	Rural youth (approximately 6) in the case of the car wash.  60 women weekly using the laundry facility.  The youth club is composed of both females and males.	Increased income for youth washing cars.	n/a	+	+	Although there are strong women leaders in the citizen's association, they do not seem to have the full respect of the youth club members and there is some tension there that needs to be worked through, or the youth will not feel ownership over the car wash and will feel it is a "women's project".	R2RW Team met with Citizens Association and Youth Group on Dec. 2 <sup>nd</sup> and requested answers to a series of questions on who, what, where, and how the projects would be done. Budget has recently been revised.	This project has a lot of potential and has yet to be approved. However, R2RW will need to feel fairly confident that the management issues will be addressed and that the community will be involved in generating funds for the project prior to its commencement.
			Less labour and time for women doing laundry – easier access, easier car washing	n/a	+	+	Management issues for both the laundry and car wash will need to be addressed.		

Title	Purpose	Gender Description of Beneficiaries	Indicators to be Used to Assess Gender Equity	M +/-	F +/-	Y +/-	Gender Concerns and Issues to be addressed	Status	Assessment
			Enhanced environmental health because harmful river water will be avoided.	+	+	+	Training in the construction of the facility will need to be given to both males and females.		
			Social capital will be enhanced if women have better conditions for washing clothes and youth have better facilities for washing cars.	+	+	+	Potential conflict may emerge if the car wash generates income for young males and the laundry does not.		
			Women and youth's participation in decision-making and in leadership should be enhanced.	+	+	+			
			Some shift in "domestic gender roles" should be evident with respect to laundry and car washing.	+	+	+			

## Agenda for Magistrates, Supreme Court Judge, and Clerks of the Court

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### Judicial Symposium for Resident Magistrates

Renaissance Jamaica Grande Hotel, May 16-18, 2003

#### Program

#### Friday

- 3:30 - 3:50pm            **Registration & Refreshments**
- 3:50 - 4:00pm            **Welcome & Opening Remarks**  
*His Honour Mr. Glenworth Brown Resident Magistrate, Clarendon*
- 4:00 - 4:10pm            **Emerging Issues in Environmental Management**  
*Mr. Franklin McDonald Chief Executive Officer National Environment & Planning Agency*
- 4:10 - 4:20pm            **New Policy Directions for Sustainable Environmental Management**  
*Ms. Leonie Barnaby, Senior Director, Environmental Management Division, Ministry of Land & Environment*
- 4:20 - 4:40pm            **The Applicant and the Neighbours - Community Involvement in Environmental and Planning Decisions**  
*Judge Merideth Wright Vermont Environmental Court, U.S.A*
- 4:40 - 5:00pm            **Discussion**
- 5:00 - 5:15pm            **COFFEE BREAK**
- ASPECTS OF RESOURCE MANAGEMENT: Theme Presentations**
- 5:15 - 5:25pm            **Urban and Rural Planning**  
*Mrs. Ruth Potopsingh Member, Town & Country Planning Authority*
- 5:25 - 5:35pm            **Marine Resources Management**  
*Mr. Krishna Desai Manager, Coastal Zone Management Branch, National Environment & Planning Agency*
- 5:35 - 6:00pm            **Discussion and Closure**
- END OF SESSION**
- 7:00 - 8:00pm            **COCKTAIL RECEPTION Venue: Board Walk**
- Greetings:**
- Mr. Franklin McDonald, CEO, National Environment & Planning Agency*  
*Mr. Luc Frechette, Head of Aid, Canadian International Development Agency*

*Ms. Mosina Jordan, Director, United States Agency for International Development*

**Saturday**

- 8:30 - 8:50am      **Opening Remarks**  
*Mrs. Laleta Davis-Mattis Chairperson*
- 8:50 - 9:10am      **Recent Developments in Environmental & Planning Law**  
*Mrs. Laleta Davis-Mattis Director of Legal & Regulatory Service, in Jamaica National Environment & Planning Agency*
- 9:10 - 9:30am      **Recent Developments in Environment & Planning Law in the U.S.A - One State's Experience with an Environmental Court**  
*Judge Merideth Wright Vermont Environmental Court, U.S.A*
- 9:30 - 9:50am      **International Agreements and their Impact on Domestic Legislation**  
*Mrs. Carole Excell, Senior Legal Officer National Environment & Planning Agency*
- 9:50 - 10:20am      **Panel Discussion**  
*Facilitator, Judge Merideth Wright*
- 10:20 - 10:35am      **COFFEE BREAK**
- ASPECTS OF RESOURCE MANAGEMENT CONT'D**
- 10:35 - 10:55am      **Flora, Fauna & Protected Areas Management**  
*Ms. Yvette Strong Manager Biodiversity Branch National Environment & Planning Agency*
- 10:55 - 11:05am      **Fisheries Management**  
*Mr. Andre Kong Director of Fisheries Ministry of Agriculture*
- 11:05 - 11:15am      **Watershed Management**  
*Ms. Thera Edwards Manager Sustainable Watersheds Branch National Environment & Planning Agency*
- 11:15 - 11:35am      **Utilizing Legislation to Protect Jamaica's Forests**  
*Ms. Rainee Oliphant, Legal Officer Forestry Department Ministry of Agriculture*
- 11:35 - 11:50am      **The Relevance of Ecological Valuations in the Determination of Fines for Environmental Offences**  
*Prof. Elizabeth Thomas-Hope, James Seivright Moss-Solomon (Senior) Professor of Environmental Management, Head, Department of Geography and Geology University of the West Indies, Mona*
- 11:50 - 12:10pm      **Jamaica's Maritime Legal Regime**  
*Mr. Bertrand Smith Director of Legal Affairs Maritime Authority of Jamaica*
- 12:10 - 12:30pm      **Discussion**
- 12:30 - 1:30pm      **LUNCH**

1:30 - 3:30pm	<p><b>Case Studies Working Group &amp; Discussion</b></p> <p><b>Challenges in Enforcing the Beach Control Act: The issue of Access &amp; Prescriptive Rights (20 mins.)</b>  Discussion (10 mins.)  <i>Her Honour Mrs. Marlene Malahoo-Forte, Resident Magistrate, St. Elizabeth</i></p> <p><b>Sentencing: Continuing Offences under The Beach Control Act (20 mins)</b>  Discussion (10 mins.)  <i>Her Honour Ms. Paulette Williams Supreme Court Judge</i></p> <p><b>Director Culpability Under The Beach Control Act (15 mins.)</b>  Discussion (10 mins.)  <i>Mr. Gilroy English Legal Officer National Environment &amp; Planning</i></p> <p><b>Agency Fisheries Cases (15 mins.)</b>  Discussion (10 mins.)  <i>Ms. Joy Crawford Senior Legal Officer Ministry of Agriculture</i></p>
3:30 - 6:00pm	<p><b>Study Tour: Dolphin Cove, Ocho Rios</b></p>
	<p><b><u>Sunday</u></b></p>
8:15 - 8:30am	<p><b>Welcome and Opening Remarks</b>  <i>Mrs. Laleta Davis-Mattis Chairperson</i></p> <p><b>ASPECTS OF RESOURCE MANAGEMENT CONT'D</b></p>
8:30 - 8:40am	<p><b>Solid Waste Management</b>  <i>Mrs. Ianthe Smith Technical Advisor National Solid Waste Management Authority</i></p>
8:40 - 8:50am	<p><b>Mining</b>  <i>Mr. Clifton Thompson Deputy Commissioner of Mines Mines &amp; Geology Division Ministry of Land &amp; Environment</i></p>
8:50 - 9:00am	<p><b>Waste Management (general)</b>  <i>Ms. Paulette Kolbusch Manager, Environmental Standards &amp; Regulations Branch National Environment &amp; Planning Agency</i></p>
9:00 - 9:10am	<p><b>Public Health</b>  <i>Mr. Peter Knight Acting Director Environmental Health Unit Ministry of Health</i></p>
9:10 - 9:30am	<p><b>Discussion</b></p>
9:30 - 10:00am	<p><b>COFFEE BREAK</b></p> <p><b>ASPECTS OF RESOURCE MANAGEMENT CONT'D</b></p>
10:00 - 10:20am	<p><b>Challenges in the Interpretation of Environmental Laws: Section 6 of the Wildlife Protection Act &amp; Section 16 of the Marine Park Regulations</b></p>

*Mrs. Laleta Davis-Mattis Director of Legal & Regulatory Service, in  
Jamaica National Environment & Planning Agency*

10:20 - 10:40am

**Civil Penalties and Economic Enforcement - Removing the  
Economic Benefit from the Violation and other factors in  
Environmental Enforcement**

*Judge Merideth Wright Vermont Environmental Court, U.S.A*

10:40 - 11:20am

**Discussion**

11:20 - 12:00pm

**Evaluation & Closing Noon**

## Watershed Policy

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### **NEPA and R2RW Project Breakfast Meeting on Watershed Policy**

Terra Nova Hotel, 17 Waterloo Road, Kingston, June 24, 2003, 7:30 – 10: 00 am

1. **Preliminaries** – Prayers, Welcome and Introductions – **Mr. Learie Miller, Facilitator**
2. **Purpose of Workshop:** Develop a consensus on the present and future Roles and Responsibilities of Government of Jamaica towards watershed management – **Mrs. Jacqueline DaCosta (5 minutes)**
3. **Presentation:** on Current Mandates of Government of Jamaica Agencies on mandates for Watershed Management with analysis on overlapping responsibilities and gaps - **Trevor Spence (20 minutes)**
4. **Statements:** on Current and Proposed Roles and Responsibilities in Watershed Management **(5 minutes each)**
  - a. Forestry Department: **Marilyn Headley**
  - b. National Water Commission: **E. G. Hunter**
  - c. Water Resources Authority: **Basil Fernandez**
  - d. National Works Agency
  - e. RADA: **Albert Shand**
  - f. Ministry of Agriculture: **Permanent Secretary**
  - g. National Solid Waste Management Authority: **Alston Stewart**
  - h. NEPA: **Learie Miller**
5. **Discussion**
6. **Conclusions:** and Next Steps and Vote of Thanks – **Thera Edwards**

## Draft Analysis of Overlapping Responsibilities and Gaps with Respect to Watershed Management in Jamaica

Prepared by: Trevor O. Spence – Consultant, August 12, 2003

### Background

The Ridge to Reef Watershed Project (R2RW) is a five year (with an optional sixth year) activity contributing to the achievement of USAID-Jamaica's Strategic Objective #2 (SO2) – Improved quality of key natural resources in areas that are both environmentally and economically significant. R2RW comprises three Components contributing to the achievement of the Intermediate Results under SO2. Component 2 sets out to address incentives for and obstacles to enforcement of targeted environmental regulations identified and solutions supported.

The national situation impacting on R2RW implementation of the Component 2 activities of the Project includes the existence a multiplicity of environmental laws, several agencies with overlapping roles and responsibilities, and an out-dated Watershed Policy.

The attention to watershed management is not new to Jamaica. The Table below lists the historical milestones for watershed management in Jamaica:

**Table 1 Milestones in Watershed Management in Jamaica**

Date	Milestones
1937	Awareness of the need for soil conservation and watershed protection – Croucher and Swaby Report
1941	Wakefield Report supports the need for soil conservation and watershed protection
1944	First annual report of the Soil Conservation Division stressed the need for watershed management
1945	An Economic Policy Committee Report stated that, "steps must be taken to meet this grave and widespread menace ( <b>watershed degradation</b> ) before it is too late."
1951	Establishment of Yallahs Valley and Christiana Land Authorities by the Land Authority Act, with the main tasks - to rehabilitate land, check soil erosion and improve farming
1961	Division of Economics and Statistics Report indicated that success of the Land Authorities was limited due to inappropriate land use and poor maintenance
1960-1980	FAO Soil Conservation and watershed management projects executed
1963	Promulgation of "The Watershed Protection Act" which created the Watershed Protection Commission and empowered the Minister to declare Watershed Areas. With the conservation of water resources as its primary focus, the Commission was empowered to make regulations, prohibit and regulate land use and supervise and undertake improvement schemes. Under the Commission, Watersheds Areas were declared, demonstrations setup, improvement schemes initiated, and small farmers assisted in carrying out conservation work.
1970's	The Watershed Protection Commission was dissolved and its functions transferred to the newly created Natural Resources Conservation Department, of the Ministry of Mining and Natural Resources.
1991	With the promulgation of the Natural Resources Conservation Act in 1991, the NRCA was created with several divisions including a Watershed Protection and Management Branch (WPMB). However, due to staffing and funding limitations, the Branch has over the years focused primarily on regulatory and public education activities.



Date	Milestones
1990's	Other activities taking place in the 1990's includes: <ul style="list-style-type: none"> <li>▪ Morant/Yallahs Agricultural Project, funded by the EU</li> <li>▪ Trees for Tomorrow Project funded by CIDA</li> <li>▪ Hillside Agricultural Project, funded by USAID</li> <li>▪ Environmental Management of Watersheds-Development of Institutional Capabilities, funded by UNDP</li> <li>▪ The Forestry Capacity Project</li> </ul> The Hydrological Support Unit Project Protected Areas Resources Conservation Project
1995	The Watershed Management and Fuel Wood Production Committees were formed to promote action aimed at managing the nation's watersheds and to develop strategies to address deforestation
1996	Reports on the work of the Ad Hoc Watershed Management and the Fuel Wood Production Committees produced
1998	In response to growing concerns about the continued deterioration of the nation's watersheds, a Watershed Task Force, chaired by the Senior Advisor to the Prime Minister, was appointed in 1998. Among the achievements of this Task Force are the development of an Integrated Watershed Program, and the establishment of the National Integrated Watershed Management Council (NIWMC), with various Sub-Committees/Working Groups.
1999	Approval of Green Paper - <i>Towards a Watershed Policy for Jamaica</i> . This was taken through a consultative process, and recommendations integrated into a final draft that should have moved to a White Paper status.

## Purpose

The 1999 Green Paper - *Towards a Watershed Policy for Jamaica* - was taken through a consultative process, and recommendations integrated into a final draft that should have moved to a White Paper status. There has however been a delay in this process. During the period of delay, a number of areas for improvement have been identified for inclusion in this Green Paper. NEPA, with assistance from the Ridge to Reef Watershed Project decided to undertake a further review of the Watershed Policy. This is being undertaken by Beverley Pereira who is a lawyer with vast experience in legislative drafting and policy development in Jamaica. She has done extensive research in this area of development of Watershed Policy, and on the Legislative Framework relating to the environment in Jamaica. Her work includes consultancies with NEPA, and ENACT.

One of the issues that were identified to need some further attention after an examination of Mrs. Beverley Pereira First Draft was the overlapping responsibilities of several agencies, coupled with gaps in roles and responsibilities. The purpose of this Paper therefore is to review the overlapping responsibilities and gaps amongst key agencies with mandate for watershed management. This will be presented at a Meeting of these stakeholders, and consensus coming from the discussions will be given to the Consultant reviewing the draft Watershed Policy for inclusion in the final version.

This Paper is expected to undertake a review of key agencies involve in watershed management in order to:

- Consolidate impact, by identifying and working towards eliminating overlaps, and
- Identifying and working towards plugging gaps.

The methodology used to undertake this gap analysis includes a literature review of the programmatic framework, and of the relevant laws relating to watershed management.

### **Current Situation**

The Watershed Policy Green Paper prepared in 1999 has now been substantially revised with clear objectives, acknowledgement of recent developments with the NIWMC and Local WMCs, and updated information. However, further clarity is still needed on the roles and responsibilities of the Government of Jamaica Agencies involved with Watershed Management. The fundamental challenge of the Watershed Policy is to define how best to get the many government agencies involved in watershed management to better collaborate on resources and programs.

The Watershed Protection Act of 1963 recognized the issues in watershed management, but no regulations were put in place, and it is now outdated. The bottom line is that the Watershed Policy is intended to be an overall Government of Jamaica Policy statement and not a policy statement for any particular government agency.

There is therefore the need to focus directly on obtaining a broad consensus on what exactly the mandates and responsibilities of the various government agencies presently is, and what it should be. The heads of the agencies need to have buy-in to the Policy, and the Policy should reflect their commitment to overall roles and responsibilities.

The diversity of policies and regulations that are important for effective watershed management necessitate interaction with a broad range of stakeholders. At the national level, legislation relevant to watershed management includes, at a minimum:

- The Country Fires Act (1942)
- The Wildlife Protection Act (1945)
- The Mining Act (1947)
- The Town and Country Planning Act (1958)
- The Flood-Water Control Act (1958)
- The Watersheds Protection Act (1963)
- The Land Development and Utilization Act (1966)
- The Quarries Control Act (1984)
- The Public Health Act (1985)
- The Rural Agricultural Development Act (1990)
- The Natural Resources Conservation (NRCA) Act (1991)
- The Water Resources Act (1995)
- The Forest Act (1996)
- The National Solid Waste Management Act (2001)

### **The New Watershed Policy**

The Watersheds Protection Act (1963) is the law governing watersheds in Jamaica and is administered by the Natural Resources Conservation Authority. The primary focus of the Act is the conservation of water resources by protecting land in or adjoining the watersheds. The Act is intended to:

- Ensure proper land use in vital watershed areas;
- Reduce soil erosion;
- Maintain optimum levels of groundwater; and
- Promote regular flows in waterways.

The Act relies heavily on prohibiting and regulating to protect the declared watersheds, and lacks provisions for incentives, public education and the involvement of local communities. The Act had not benefited from any substantial revision since its promulgation.

The Watersheds Protection Act and many related acts have a number of gaps and overlaps in terms of areas and responsibilities. For instance, both the Forest Act and Natural Resources Conservation Authority Act have stipulations for managing "Protected Areas" but the clear distinctions between them and the jurisdictions of each are to be defined and agreed upon. The same is true of the lands in the declared watersheds and the rural areas under RADA's jurisdiction, with respect to the responsibility for soil conservation work in watersheds.

In view of:

- These legislative gaps and jurisdictions with parallel or contending powers,
- Objective requirements for protection of watersheds,
- Participatory approaches,
- Division of the island into 26 Watershed Management Units, and
- NRCA's role in this process, the decision was arrived at to update the existing Watersheds Protection Act and by instituting, appropriate Regulations under the Act.

The new policy deals with:

The division the island into 26 Watershed Management Units (WMUs) comprising all the land from the mountains to the sea and containing over 100 streams and rivers. These WMUs are essentially composites of **watershed**, which fall within ten (10) hydrological basins (regions). Steep slopes usually in excess of 20 degrees characterize the land in the upper part of the WMUs. Limestone derived soils cover about 65% of the watersheds and the remaining areas are composed of soils derived from weathered igneous and metamorphic rocks.

Addresses Watershed conditions and problems including:

- Natural conditions of instability - landslides and slope failures due to the presence of steep slopes, and thin or erosive soils, heavy and high intensity rains in the upper watershed areas, often leading to soil erosion, and susceptibility to earthquakes,
- Aggravated by the inappropriate farming activities on the slopes, with upwards of 170,000 farmers cultivating just less than 245,000 hectares, and using unsuitable agricultural practices have contributed to massive soil loss through soil erosion, siltation of drains and rivers and destructive flooding downstream. Depending on crops and practices, the average soil loss reaches approximately 30 tons per hectare per year according to some statistics (NRCA, 1997),
- Increased industrial and agricultural activities (crop expansion, increased use of industrial and agro-chemicals, urban run-off and the improper disposal of sewage effluents) have brought pressures on land and water resources and have lead to greater water pollution,
- The growing demand for water has not been adequately matched by an increasing societal awareness and understanding of the important linkages between land uses in upper watershed areas and water production,

- Rivers, beaches and harbours have become polluted and coral reefs degraded adversely affecting local residents and the tourism industry,
- The large-scale removal of trees for **mining, quarrying, urbanization, housing programmes, squatter settlements**, and the illegal removal of forest cover for lumber charcoal production and yam sticks have greatly contributed to the relatively high rate of deforestation,
- Forest fires have been contributing more and more to deforestation due to the extended periods of drought, and
- All of the above-mentioned factors have resulted in heavy siltation of rivers, reservoirs, irrigation canals and water intakes, as well as harbours. Surface runoff is greatly increased due to excavation of slopes, diminished vegetation cover, compacted soils, and many other activities that reduce water intake to the soils. During heavy rains and hurricane seasons, floods become more frequent and severe, whereas in dry seasons, water shortages become a serious problem. Over the last two decades, the incidence of serious floods has increased significantly resulting in considerable losses in life and property.

Examines the **Effects of Watershed degradation**, including:

- Reduced tree and vegetative cover;
- Reduced water **storage**, availability and quality;
- Reduced productivity of land, increased siltation of gullies, rivers and reservoirs due to soil erosion;
- Increased marine and coastal contamination and degradation adversely affecting the tourism **and fishing** industries;
- Increased flooding resulting in loss to human life, property, roads and agricultural crops; and
- Loss of habitat for important flora and fauna.

Identifies the institutional framework, which gives the NRCA and the Forestry Department the main responsibilities for management of watersheds. The areas identified are:

- Regulatory;
- Custodial;
- Technical information, advisory, extension and research bodies;
- Ad hoc coordinating committees;
- Non-governmental organizations; and External funding agencies.

The Green Paper 3/01 "Towards a National Strategy and Action Plan on Biological Diversity in Jamaica" indicates twenty-six (26) watershed management units exist in Jamaica of which ten are in need of rehabilitation. Several ecosystem rehabilitation programs are being undertaken to increase the quality and quantity of water for human consumption. The report points to 'at least 52 pieces of legislation that have aspects that directly relate to the management of the environment'. It provides a summary of most of the Acts included in the R2RW Review.

## Summary of Overlapping Responsibilities

This Paper will not repeat the work undertaken by the Consultant regarding current roles of Agencies. However Pages 29-33 dealing with Institutional Mandates for Watershed Management should be dealt with along side this Paper.

The current role of the Forestry Department must also be considered. The current policy sees this Agency with overall responsibility for the implementation of watershed protection and conservation. The FD has repeatedly indicated its concerns with its defined roles.

The Table below provides a summary of Agencies with their prescribed roles:

Agency	Summary of Roles
NEPA	Lead Policy and Regulatory Agency
Ministry of Agriculture	Regulatory Agency
Forestry Department	Regulatory and Custodial Agency
RADA	Technical Assistance, Extension, Advisory and Research Agency
Water Resources Authority	Regulatory Agency
National Lands Agency	Custodial Agency
National Water Commission	Custodial Agency
National Works Agency	Erosion Control, Road Construction, River Training, Flood Prevention
Local Authorities	Public Roads, Coordinate with other Agencies
ISCF	Enforcement

Overlapping responsibilities have resulted in uncoordinated planning and prioritization, programme implementation, evaluation and conflict resolution. “A Policy and Legislative Framework for Watershed management in Jamaica – A review of Existing Laws and Regulations” – reviewing the 14 major laws impacting on watershed management - undertaken by the R2RW Project in 2001, and a number of other reports identified many overlap. These include:

### Jurisdictional

Pauline McHardy, in a “Gap Analysis of Relevant Policies” prepared for NEPA in March 2003, saw the importance of resolving “the issue of jurisdictional overlap between the FD and NEPA...”. The Watershed Protection Act of 1963 is the main law governing watersheds in Jamaica, focusing on conservation of water resources. The NRCA is responsible for administration of the Act, but several other agencies are also involved by virtue of powers held or activities conducted with respect to watersheds.

The Forest Act of 1996, along with the National Forest Management and Conservation Plan also addresses watersheds, water resources, and wildlife protection. In fact so does other agencies under several acts, including RADA, WRA, and NWC. The Draft Watershed Policy recognizes an overlap between agencies and authority over the handling of watershed areas, and designates the NRCA as the lead policy, and monitoring agency; Forestry Department as the implementing agency; and others as collaborating agencies.

The National Forest Management and Conservation Plan (2000) identify “at least fourteen government offices, ministries, departments, authorities, commissions or boards have statutory and sometimes conflicting interests in forest land management. “These include - Office of the Prime Minister; Ministry of Agriculture; Ministry of Finance and Planning; Ministry of Land and

Environment; Ministry of Energy; Water Resources Authority; National Water Commission; Rural Physical Planning Unit; Survey Department; NEPA; RADA; PIOJ; Coffee Industry Board; and the Forestry Department.

The Local Authorities have responsibilities for planning, designing, and maintaining public roads in watersheds, and providing effective drainage systems along the roads. They also:

- Coordinate with the FD in pursuing road slope stabilization work;
- Undertake river training work along major streams;
- Assist in rural development work; and
- Establish and maintain rural water supply systems.

**A note of some significance is that NEPA's mandate for implementation of the Agricultural Policy does not include watersheds.**

### ***Governance Mechanisms***

Each of these Acts has numerous regulations, and interfaces with several other Acts, laws and policies. Through these Acts, several Committees, Boards, and other governance mechanisms are established, including - Advisory Planning Committees; Appeal Tribunal; Compensation Assessment Board; Valuation Board; Watershed Commissions; Land Development Utilization Commission; National Parks Management Unit; Local Forestry Management Committees; and Local Watershed Management Committees

### ***Community Participation***

The National Forest Management and Conservation Plan address the establishment of Local Forest Management Committees (LFMCs), while the Draft Watershed Policy speaks to Local Watershed Management Committees (LWMCs). More recently other groups such as the Water Users Associations (WUAs), established under the National Irrigation Commission (NIC), Farmers Groups under RADA will impact on community participation in watershed management.

These groups are also establishing local plans – Local Forest Plans, and Local Watershed Plans. These environmental related entities with overlapping functions are just a small number of the actors at the community level, and are not yet interfacing in any significant way with other government of Jamaica policies, for example Local Government Reform which establishes PDCs, DACs, and CDCs, with their own plans. There is a need for environmental agencies to work with SDC, and the Local Authorities to have a coordinated approach to community participation.

### ***Land Use - Agricultural and Soil Conservation***

The National Environment Policy, National Industrial Policy (1996), National Land Policy (1997), The Draft Watershed Policy (1999), and the National Forestry Management and Conservation Plan all speaks to land use issues. Twelve of fourteen Acts have some impact on Agricultural and Soil Conservation Practices. Five of these have overlapping responsibilities in regulating, monitoring or acquisition of agricultural lands. The LDUC and RADA Acts could lead to major overlapping of responsibilities.

The establishment of NEPA is an attempt at consolidating planning and land use issues. However, separate Boards for NRCA, LDUC, and TCPA are still in place. In attempt to achieve better coordination, each now have representatives on each other Boards.

### ***Compliance and Enforcement***

Several permits, and breaches are being addressed under several pieces of legislation for example permits for fire, protection of wildlife and protected areas, extraction of minerals, and quarrying etc. Several Officers interface with Communities to encourage compliance or undertake enforcement of Watershed Regulations. These include Games Wardens; Fishery Inspectors; JCF Officers; Watershed Protection Officers; Forestry Officers; Agricultural Extension Officers; Public Health Inspectors; Medical Officers; Environment Wardens; Compliance Officers; Wardens from the NSWMA; Municipal Wardens; and Traffic Wardens.

### ***Management of River Resources***

At present there are several Government agencies with responsibilities for management of Jamaica's rivers:

- The Water Resources Authority grants licenses for water abstraction and monitors flow rates;
- The National Works Agency is responsible for river training;
- TPDCo (River Rafters Authority) is responsible for granting licenses for rafting operations;
- NEPA is responsible for monitoring water quality;
- Mines and Geology is responsible for issuing licenses for sand extraction; and
- The NWC is responsible for harvesting and cleaning river waters for potable water.

Yet there is no single agency that has overall responsibility for management of the rivers. This issue comes into focus when conflicts arise over use of river resources e.g. should the Rio Grande be used primarily for tourism or mining, or should Jet skis be allowed on the Rio Cobre.

### ***Water and Forest Resources***

Ten of the fourteen Acts deals with Water and Forest Resources. There is the potential for major overlaps among agencies involved in the conservation and use of water resources. This is without including the role and mandate of the National Water Commission.

### ***Water Quality Monitoring***

There are several Agencies that are doing water quality monitoring:

- The WRA monitors flow rates;
- NEPA monitors discharges into rivers;
- Public Health monitors sanitation conditions;
- NWC monitors potable water supplies; and
- Private companies are required to report on effluent discharges.

**Yet there is no single overall water quality monitoring effort that collects and reports on water quality data.**

### ***Mining and Quarrying***

Eight Acts had any specific references to Mining and Quarrying. These include the Mining Act that has the responsibility of granting licences and collecting royalties; the Watershed Protection

Act giving the NRCA power to restrict the use of any lands; and the LDUC Act exempting lands being used by bauxite from being listed as agricultural lands

### ***Settlement and Sanitation Issues***

All Acts deal with Settlement and Sanitation issues. Most settlement issues address protection of public water supplies and/or the acquisition of lands for public purposes and the necessary compensations arising from those acquisitions. Others address rights of passageway, granting of licences, and power of inspections.

### ***Wildlife Parks and Protected Areas***

Nine of fourteen Acts speak to Wildlife, Parks and Protected area. The existing legislation allows for the establishment of Special Areas including - Forest Reserves; Games Reserves; Games Sanctuary; Water Quality Control Area; Parks and Protected Area; and Watershed Management Units. Jurisdictional overlaps exist between NEPA and the Forestry Department in this area – coordinating protected areas with forested lands.

### ***Public Education and Planning***

Many agencies including NEPA, FD, and RADA have very active Public Awareness and Public Education Divisions/Departments and Programs. A cadre of Officers interfaces with communities to undertake training, public education, and to facilitate planning. These include SDC Officers; RADA Extension Service; and Planners from NEPA, PIOJ, and UDC

### ***Funding***

Several agencies are developing funds to implement and sustain their programmes – Forestry Development Fund. In addition many international, and local donors are active with agencies involved in watershed management, including IDB, CIDA, EU, USAID, and EFJ

### ***Summary of Gaps***

Although a great deal of cooperation exists between agencies, a number of crucial institutional arrangements are lacking, notably:

- Agreement on a common and comprehensive system of land use zoning;
- Formal co-operative management arrangements between implementing agencies; and
- Effective participation in planning at a senior level of government having sufficient authority to resolve differences between the management of agencies.

### ***Implementing Agency***

There is not a clear understanding as to which agency is responsible for implementing watershed activities. Several are describes as regulatory and or custodial. In the Green Paper the Forestry Department is described as the Implementing Agency. This matter needs clarification.

### ***Local Management***

Local Forestry Management Committees (LFMCs) and Local Watershed Management Committees (LWMCs) are expected to work together. However, two separate policies articulate their roles, without addressing how this would be achieved.



### ***Integrated Resources Management Approach***

Watershed Management has undergone a shift from a pure system approach to a more integrated resource management approach, including such governance issues as community, private sector, and civil society participation. These also involve the deregulation of some management responsibilities such as management of parks to civil society groups. However the resources and capacity to move in this area are lacking.

### ***River-Based/Basin Management***

The current watershed policy does not address the link between the land and the river systems. There is a need to establish if there will be a separate River policy or to include River Management as a part of the Watershed Policy. A River Basin Policy must also include a Drainage Policy for the island. A river basin policy cannot be done without looking at drainage as well and sewage disposal issues and runoffs from construction and settlement. It should be mentioned in the policy that there is a need for more detailed look at river basin and drainage management issues.

The Meeting did not think that the kinds of details needed for a river policy could be done in time to fit in with the timetable for completion of the watershed policy.

It was suggested that the implementation framework should include river-basin management

### ***Information***

There are presently large information gaps in several areas of watershed management which constraints effective decision-making.

### ***Enforcement***

The most serious constraints observed by several environmental NGOs is a lack of demonstrated commitment and accountability by senior level of government to enforcement of environmental laws, policies, and plans. Some attention also needs to be given to the economic disincentives for breaches of several acts. In other words, if the fines and other penalties do not outweigh the economic gains from the breach, then individuals and corporations will pay the fines, and continue with the breach. Many of the fines are very out-dated and low. The uses of Alternate Dispute Resolution also need to be explored.

There was a general view that lack of enforcement did not relate to mandate but the general will to fulfill existing mandates. NEPA Legal, and others would need to carefully review the elements of the different offences, and attempt to match the offence with the existing legislation.

### ***Praedial Larceny***

Lack of resolve in addressing socio-political difficult issues like praedial larceny

### ***Human Resources Capacity***

Insufficient trained, motivated and properly supported personnel to implement policies and programmes – enforcement of conservation and protection policies, Extension services, and public awareness programmes

## ***Funding***

Agencies involved in watershed management are faced with inadequate allocation of public funds to support existing or the development of new programmes. Many initiatives in this area are being funded by external partners. Such issues as user fees are still at discussion stages

## ***Incentives/Disincentives to Private Sector Participation***

There was an assumption in the management of watersheds that government would have resources that would act as incentives for Private Sector participation. This is not currently the case, and much more attention needs to be given to this area. For example, the Forestry Department only carries responsibilities for Crown, and/or declared Forest Reserves. There is therefore the need to get private landowners involved in conservation measures.

## ***Stakeholders for Watersheds***

The notion of 'stakeholders' for watersheds may be a bit difficult to actualize. It is doubtful that there is a concept of being a citizen of 'a watershed'. People think of themselves as citizens of villages, communities, settlements, and Parishes, but rarely of watersheds. This leads one to think that rather than take a strategy of convincing people to care about watersheds by organizing committees, it may be more useful to just think in terms of facilitating actions in their communities that will help mitigate watershed degradation.

## ***Coordination with PDCs***

The emerging 'Watershed Policy for Jamaica' as currently stated does not take into account or relates to the strategy of making the PDC the key local level coordinating mechanism. However, the WMU indicates that the new intention is for local councils to take the lead role in local watershed management. NEPA and the Forestry Department should explore, in consultation with SDC, whether it is in fact necessary to set up LWMC and/or LFMC at all. The PDC offers cross-sector coordination and planning function and the CDCs offer access to communities.

## ***Institutional Mandate for Watershed Management***

The Meeting reviewing the gaps and overlaps got feedback from key agencies relating to Section 3.7 – Institutional Mandates for Watershed Management. Listed below are the comments from the agencies present at the Meeting:

### ***Marilyn Headley***

To look at policy document and FD questions it is necessary to examine the history. The proposal was that the upper watershed should be managed by the FD. In light of developments in the recent past, it was agreed that NEPA was the organization to manage watersheds with the support of other agencies.

- Forestry wants to concentrate on the forested areas in watershed (see page 30 of Policy). RADA can take on the agriculture issues and so on.
- 1, 3,4,7,8 are the ones that FD is eliminating. Number # 8 needs to be reworded for it to fit into FD's mandate.
- # 6 – is not FD and should be NWA.
- Forestry is going to add. # 10 – expands to say forest estate.

#### ***D. McGlashan (Min Ag)***

Re implementation of the policy the NIC has developed a national irrigation plan for Jamaica. Sixteen (16) of these IDB funded projects are located adjoining to existing rivers.

- There was a general comfort level with Item 2 – However: The role of RADA in land use issues need to be spelt out. NB. The word needs to be changed to say “...the promotion of environmental certification” (Page 30).
- No fundamental problems.

#### ***Thomas Burton (RADA)***

Grey area is # 7.

- # 5 – should be the role of NEPA. Learie Miller saw this as Public Awareness in reference to activities in which NEPA collaborates with the RADA.
- # 3 – Marilyn – should address the indiscriminate land clearing instead of burning.
- # 1 – put non-monitoring incentives.

#### ***WRA***

In agreement with what is presented. However, the WRA does more than regulate – also management, guide, educate.

- # 3 – change wording to say provide technical assistance to and dept etc. in relation to the use/development of water resources (see paper in office).
- A # 4 to be added.
- # 5 change – to read “to a watershed management perspective”. This is important from the public education perspective.
- The WRA mandate is being reviewed to include flood control regulation. The regulatory aspects of the Flood Control Act will become the responsibility of the WRA.

#### ***Lands Department***

Marilyn: # 1 – take out forest in this sentence. Take out the two square brackets and say Crown Lands.

- Thera # 3 should be under NEPA.

#### ***Recommendation***

Have the Commissioner of Lands look this section.

- # 5 – it is the Ministry of Agriculture through its Land Planning Unit that will do these activities and not the National Land Agency. The Ministry of Agriculture has to be involved in coordinating.

### ***NWC (Don Streete)***

Comfortable with what is here.

- Need to resurrect the co-management agreement with Forestry Department. There was a mention of large tracts of lands which are being poorly managed.
- Bulletize the NWC section.

### ***NWA***

Bulletize.

- Reconstruction of gullies is NWA's responsibility. The Flood Water Control act is also unclear re NWA's role. What does flood prevention mean. This area needs expanded definition.
- Need to address sustainable development.

### ***Civil Society Groups***

- Work of civil society needs to relate to PDCs and PCs. Need to organize into LWMCs. Will these LWMCs be duplicating the work of agencies such as JCDT?
- There was also the need to list land settlement needs under the PCs and NEPA.
- The Group pointed out that no role was given for the Ministry of Water and Housing.
- Don Streete suggested it could read "guided by the Ministry of Water and Housing..... So that Water and Housing is acknowledged.

### ***Learie Miller (NEPA)***

Comfortable with almost everything. In # 12 - intensification of land use need to be readjusted and falls under LDUC.

- # 5 – will not be done in the national concept.
- Marilyn: in gaps document on page 12 re overall responsibilities: We are now getting to point of integrated approach through the NIWMC as opposed to a lead agency and implementing agency.

## Project Year 4 R2RW Publications

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### **Review of Organizational, Human and other Resources Supporting Compliance and Enforcement in the Great River Watershed**

#### ***Executive Summary***

The Ridge to Reef Watershed (R2RW) project is a five-year initiative of the Government of Jamaica (G.O.J.), National Environment and Planning Agency (NEPA) and the Government of the United States through its Agency for International Development (USAID) that seeks to promote the sustainable management of natural resources in the Great River and Rio Grande Watersheds.

The Great River starts in St. Elizabeth and forms parish boundaries between Hanover and St. James and St. James and Westmoreland. See Figure I - Map of the Great River Watershed.

The Great River Watershed therefore falls under the Local Government administration of four parishes namely: St. James, Hanover, Westmoreland and St. Elizabeth. There are some differences in social and economic development, especially in the quality of infrastructure and conditions of the roads. The Great River is of great importance as it supplies water for domestic, agricultural and industrial purposes. The estimated population of the Great River Watershed is 85,219 (NCRA 1999).

The Great River Compliance and Enforcement Task Force (GRC & ETF) was established in October 2001. The Task Force is keen to develop clear and accurate information on the status of compliance and enforcement in the Great River Watershed. Improving compliance and enforcement indeed begins with understanding the reason why individuals and organizations do not obey prevailing policies and regulations.

The study was conducted to determine the number of organisations/groups involved in compliance and enforcement activities in GRW. It investigated the potential of Burial Schemes, Garden Club, Churches and other groups to support C & E at the community level. It undertook interviews, conducted research and review existing documents of EWS wardens.

Based on the above activities, the following was produced.

- (a) An Inventory of Equipment
- (b) A Database of contact information for all persons/groups involved in C & E activities.
- (c) Report on Court Cases for Environmental Violations in GRW

Various strategies were developed to achieve the output, including Literature Review, Meetings, Interviews, and Discussions with relevant agencies and individuals. Appropriate tools were designed to collect the necessary data. Data collection was divided into three segments viz;

- (a) Questionnaire
- (b) Focus Groups

- (c) Review of Court Cases for Environmental Violations. Respondents were willing to be interviewed and displayed high levels of interest and participation.

The study revealed the following:

- Although there is a low level of environmental awareness among residents in GRW respondents were concerned about the quality of the watershed.
- Although many agencies are involved in C & E activities only limited enforcement of environmental laws and regulations have been taking place.
- There is a stigma attached to 'Informers', but only a few are seen as traitors.
- Garden clubs seem to be a thing of the past.
- Very few Burial Schemes exist (only one identified in GRW).
- There is a great potential for partnership with Church Youth Clubs.
- Many residents in various communities of GRW are willing to support C & E activities but need educational and organizational leverage.

Some recommendations were made to foster and sustain effective community stewardship. The draft report was presented/distributed at a GRWMC & TF meeting at the RADA complex in Montego Bay on November 12, 2002. Reasonable discussions followed. Members present were asked to study the document and send comments to the consultant by Friday, November 22, 2002. The feedback received is incorporated in the final report.

### **Development of Incentives for Private Sector Investment in Improved Watershed Management in Jamaica**

#### ***Executive Summary***

This report reviews approaches to the design of economic and non-economic incentives for private sector participation in watershed management and conservation. Its focus for Jamaica is watershed management, which has today taken on critical importance in face of clear evidence that degradation of our watersheds poses present and continuing threats to the country's ability to provide for its needs. Improved watershed management can undoubtedly enhance provision of reliable and adequate supplies of water for agriculture, industry, tourism, and urban and rural populations. Currently there are major problems concerning the supply of water. These include both water quality problems and inadequate or insufficient supplies of water in addition to increasing cost of production of potable water.

Problems associated with watershed management have been one of Jamaica's major environmental concerns. Watershed degradation stems from a wide range of factors. These include population densities and population settlement location, low levels of environmental awareness amongst the populations using the watershed for various purposes, poverty and the exploitation of resources for profit, which have all caused severe watershed degradation. In addition, there are a number of specific activities that create severe detrimental impacts on the watershed including over-cultivation of steep slopes without proper cultivation practices, "slash and burn" land clearance methods, tree destruction by freely roaming livestock, and indiscriminate cutting of trees and mangroves for lumber etc.

The Government has used various methods to respond to these crucial watershed problems. These include the development of a national policy green paper, the establishment of the high

level inter-agency National Watershed Management Council (NIWMC), the commencement of a USAID/Government of Jamaica five-year watershed improvement project and the strengthening of NEPA's Watershed Branch. A review of the Watershed Protection Act is also in progress.

Central to retention and improvement of the physical integrity of Jamaica's watersheds is appropriate behaviours of those who use them regardless of their purpose – be it recreation, exploitation of natural resources or residence, among other uses. Given the fact that the major proportion of lands which make up the watersheds is privately held, appropriate policies must be established to guarantee environmentally sustainable use. It is in this connection that there is a critical need to examine and implement strategies for both market and non-market incentives for watershed management.

### **1.0 Jamaican Approaches to incentives: The Current Situation**

Currently in Jamaica, a scheme of incentives for private sector participation in environmentally sound watershed management is in its infancy. Further, what does exist has been created in an *ad hoc* manner without benefit of a coherent policy framework. In addition even where they do exist, they are neither properly administered nor generally as well known as they ought to be. They have, essentially, taken the form of mechanisms that, once an activity or inactivity for that matter, fulfils set criteria of watershed or environmental "friendliness", have the impact of reducing land owners' unavoidable expenditure to the degree that government policy can make a difference. The areas of policy have so far included property tax exemptions, income tax relief against profits derived from agricultural activities, including forestry, and zero rating of certain types of planting materials under the regulations of the General Consumption Tax Act.

### **2.0 Valuation of Natural Resources**

Valuation of natural resources takes on especial significance in consideration of environmental and biodiversity issues. The simple fact is that from the beginning of discourse on value in the discipline of economics there have been controversies. Value may be thought of either as intrinsic or imputed by human beings in the form of a market or shadow price determined by "experts". People's perception of value of a shared resource differs markedly from that of privately held property, or commodities. For watershed management in Jamaica this has been understood to be a central problem.

Potable water flowing through pipes to the home is viewed as a right. Access to the river, streams and springs is also thought to be a right – unless contested by a private property owner. Furthermore, the value of the watershed is severely underestimated or worse, not at all considered, in its "services" that are essential for a continued adequate supply for the society. An understanding of the total economic value of a watershed which takes into consideration its resources that can be exploited by the society for its economic and social well being is required if one is to establish policies that can promote maintenance of its integrity.

Total economic value of the watershed may be viewed as made up of three components – **direct, indirect and option value**. These correspond to use of the resource in exploitation for say, timber, fuel wood, yam sticks etc., recreation, biodiversity and human settlement – this is direct value. Nutrient cycling, watershed protection and microclimate would correspond to indirect value. Option value refers to its future use both direct and indirect. Total economic value in this conception would be an entirely different concept from that of **existence value**. The latter would encompass the **intrinsic value** [however measured] of the watershed, concepts such as stewardship, gift to future generations, and the like.

Though imprecise, these concepts are useful as guiding principles in the search for economic incentives for private sector participation in watershed management.

## Creating Incentives – Finding the Approach Most Likely to Succeed

A successful strategy that will encourage private sector investment in activities that sustain the integrity of the watersheds should target both positive and negative features of current practices. These practices include private forestry operations of which a few currently exist and appear to operate on a sound basis. These activities should be encouraged by incentives and generalized wherever possible.

Prevailing valuation [literally almost no value at all] of the intrinsic services provided by the watersheds require incentives for private sector participation in sound watershed management to satisfy at least three requirements:

- The outcome of the incentive must result in increased and readily observable private economic or financial benefit/gain
- The incentive must result in benefits that can be privately appropriated
- The modalities of the incentive must be simple to operate and monitor

If, or rather when, outreach and education efforts change perceptions as to the true value of the watershed, other, non-economic/financial incentives not amenable to private individual appropriation can be used to affect community behaviours that preserve the watershed. Such incentives must satisfy at least three requirements:

- The incentive must be credible, leading to readily observable community benefits
- The community must be involved in its determination
- Governance of its modalities must be transparent

The specifics of such incentives are not at the moment readily apparent but studies, surveys and the R2RW process itself will go a long way in determining these.

### **3.0 Legal Tools for Private Conservation**

To provide incentives resulting in increased and readily observable private economic or financial benefit/gain there are several important legal tools that the state may use to predispose private actors to accomplish conservation in the watershed. Effectively the incentive must **either increase economic benefit or reduce economic cost**. The simplest and most obvious is a gift of privately owned land, money or securities to a conservation organization or government agency. Aside from an outright gift, a second approach is the “conservation easement”, a tool for permanently conserving land by restricting most forms of new development while still allowing landowners to use it for limited purposes that are consistent with conservation. A third tool is the conservation agreement, in which a landowner keeps full ownership of the land, but enters into a legal contract with a government agency or a conservation organization in which the owner commits to manage the land so as to ensure conservation. Finally, exchanges of public and private land can also involve the private sector in conservation and allow efficient use of government resources. To increase the likelihood of participation, the incentive for conservation, must be combined with tax policies that reduce financial cost to the landowner. The Government can design tax policies that reduce the tax burden on private actors who engage in environmental protection and biodiversity conservation or other activities for the public good.

The report outlines four basic legal mechanisms that private actors can use in support of watershed management and conservation:



**Donations:** a basic conservation tool for individuals, landowners and the private sector is donation of land, money or other assets to a conservation organization or other entity;

**Conservation Easements:** a second tool is the creation of conservation easements, which essentially allow landowners to retain ownership of land and to use it for limited purposes while permanently removing their right to use it for certain non-conservation purposes;

**Conservation Agreements:** a third tool allows a landowner to enter into a legal agreement to manage his or her property according to specific conservation terms, often in exchange for financial compensation. In contrast to easements, such agreements often have the disadvantage for conservation of not being permanent;

**Land Exchanges:** a fourth tool allows landowners to exchange, for example, property that is significant for conservation reasons with a different property that may be of equal economic value, but lesser conservation reasons with a different property that may be of equal economic value, but lesser conservation significance.

#### **4.0 Tax Incentives for Watershed Management and Conservation**

Tax law is crucial to implementing the legal tools described above because it can provide important incentives to private actors to use those options where they are available. In this connection the report outlines three broad categories of tax incentives that may be combined with the above legal tools to encourage better watershed management practices.

1. **Income Tax Deductions for Contributions:** a wide range of tax deductions are examined including deductions for contributions of land, conservation easements, money or other assets used for watershed management and conservation purposes;
2. **Tax Deductions for certain types of land use:** government can provide deductions for certain expenses incurred by landowners or the private sector while supporting conservation on private property such as, for example, through use of low impact agricultural techniques;
3. **Tax exemptions:** with a variation on the idea of tax deductions, government can exempt from taxation certain types of activities or properties devoted to watershed management and conservation. Such exemptions include both estate duty as well as property tax.

#### **5.0 Other Instruments to Support Watershed Management**

While we earlier focused on government policies specifically designed to create incentives for private actors to enhance their activities for watershed management and conservation. There is also a broad array of less direct options capable of encouraging behaviour change with resultant positive impact on watersheds with respect to their conservation and sustainable use. The type of incentive we discuss below is meant to deal with the problem of differential spatial or regional impact of conservation activities. If the region avoiding exploitation of an area of its watershed loses directly in the benefit-cost impact, that region can be compensated by differential treatment in the law. In this section, we present a subset of these additional options that appear to be most directly related to our effort at watershed management and conservation.

Seven promising approaches to economic incentives for conservation in addition to the basic legal tools and tax incentives:

**Tax allocation: government** may choose to allocate national – or parish-level tax revenues to jurisdictions in a manner that rewards conservation (i.e., giving proportionally greater resources to those jurisdictions that have set aside significant land in protected areas);

**User fees to support watershed management and conservation:** one potential source of revenue for conservation is a fee for use or extraction of natural resources like timber or minerals;

**Controlling access to shared resources:** government can use a combination of regulation and designation of limited ownership rights to provide incentives for conservation of shared “common” resources such as fisheries, birds or waterfowl;

**Tradeable Development Permits:** government can use market incentives for conservation by creating a set of tradeable permits for development of a given area to be used in conjunction with “credits” for conservation activities;

**Eco-labeling:** consumers and **government** alike can promote “green” products through use of a system of labeling that allows purchasers of a given product to evaluate its impact on the environment;

**“Biodiversity Prospecting” and other benefits-sharing mechanisms:** incentives for conservation can be created by resource use agreements, an example exists in the pharmaceutical industry, which provides that a portion of revenues generated is returned to the country, region or community in which the raw material resource is found and exploited;

**Elimination of “Perverse” incentives:** conservation is often inhibited by subsidies or other incentives that encourage overexploitation of resources. Eliminating such negative or “perverse” incentives actually create new incentives for conservation.

## **6.0 Review of Incentive Models in Selected Countries**

While incentives were initially developed in the USA, their relative success has led to their use in a wide range of both developed and developing countries. The review reveals a number of commonalities as well as differences. Property tax exemption for example, is widespread. It is found in Costa Rica, Brazil, Guatemala and Colombia among other countries. Conservation easements are found in Costa Rica, Canada and the USA. In New Zealand and Australia tradeable development rights are common.

In general the tax mechanisms operated in the selected countries seemed of broad relevance or most applicable to the Jamaican situation. In addition the general use of the conservation easements and the growing use of tradeable development permits indicate mechanisms that could usefully be deployed in Jamaica, once tailored to our conditions.

## **7.0 Conclusion, Recommendations and Implementation Strategies**

Our study demonstrates that incentives can and must be an important component of watershed management approaches. No single approach will be successful and action needs to be taken at both the local and national levels. Our discussion of valuation methods indicated the complexity of any scheme that may be used to value environmental assets, regardless of how it may be designed. It also clearly pointed to the fact that controversy over methods and values arrived at, may possibly be unavoidable. There is no question however, about the absolute necessity of protecting Jamaica’s watersheds if we intend to move into the future with adequate supplies of water for all the uses a modern society requires. Our study required perusal of policies and practices of other countries as well as their regulations and initiatives here reviewed. This, along with a reading of the working papers of R2RW as well as our interviews with a wide cross section of stakeholders has suggested various possibilities in determining the way forward.

### Immediate or Short Term

1. **Conservation Fee:** A fee dedicated to use in watershed management should be added to the water bill of all Jamaica - \$50 to \$100 could go a long way
2. **Ridge-to-Reef Donation Programme:** Hotels, Restaurants and other downstream users are encouraged to support middle and upper watershed management activities, perhaps in the case of hotels by contributing funds saved through their conserve water initiatives with guests. This would be carried out in conjunction with the Ministry of Tourism's efforts to increase the industry's support to the community and with WFJ's Forest program which would provide recognition to the contributors. International tourism certification schemes increasingly recognize such efforts in a positive light in their assessments. This recommendation is based on an ongoing arrangement between Sandals Resorts and local farmers in the Mafoota area.
3. **Eco Labeling:** Branding and marketing of horticultural, fresh and processed agricultural products, as well as bottled water based on agreed and applied standards of practice (the Great River brands idea). There are several possible incentives, apart from the obvious market-led incentives from sales to discriminating markets. They include streamlining government procedures for allocating rights and for planning development control.
4. **Grants:** The National Water Commission or other chosen body will create a scheme of grants for the establishment of community mini-dams and household water storage tanks to reduce supply reliability problems and reduce the NWC's delivery costs. These will be associated with standards for their construction and use. The process will be combined with an appropriate public education campaign and community endorsement of the scheme.
5. **Awards:** Promote awards aimed at building the notion of stewardship of the water cycle through competitions aimed at finding the winning example of community based best practice and behaviours. The award would include a monetary element and be featured in the public relations campaign.
6. **Deduction for Contributions:** The Income Tax Act should be amended to provide deductions for contributions of land, money or other assets to watershed management and conservation purposes. Appropriate forms and other administrative directions will need to be devised and implemented.
7. **Deduction for Land Use:** The Income Tax Act should be amended to allow certain types of expenses incurred by private landowners to be deducted for the determination of taxable income. Such expenses must have been incurred for watershed management and conservation purposes such as low impact agricultural techniques.
8. **Property Tax Exemption or Rebate:** Government should allow tax exemptions or rebate in respect of properties devoted to watershed management and conservation.
9. **Estate Duty Rebate:** Where property is transferred upon death to be maintained in a manner that preserves the spatial integrity of the property for purposes of watershed management and conservation a rebate would be allowed. The modalities of this provision would have to be worked out and arrangements for negotiation established.
10. **User Fees:** Establish user fees to support watershed management and conservation. These fees should be imposed for the extraction of the watershed's economic resources.

### Medium Term

11. **Public Awareness Programme:** A public awareness programme should be implemented in the medium term using results of current surveys and perceptions of watershed services to develop non-market incentives for behaviour alteration. The programme should also seek to tap into community-based schemes in areas of settlement in which poverty and the simple “need to survive” make negative behaviours perhaps the inevitable norm.
12. **Eliminating Perverse Incentives:** Create new positive incentives for watershed management and conservation by eliminating subsidies or other negative “incentives” that promote over-utilization of natural resources.
13. **Promote Watershed-friendly Technologies:** Mechanisms that promote the use of technologies that have a positive impact on watershed management should be implemented. This would include disincentives to discourage for instance, the practice of using chain as opposed to circular saws for harvesting of wood. This could be implemented by differential tax imposition either at the point of sale or of importation.
14. **Jamaica Forest Management and Conservation Fund:** Seek funding for the protection of forest reserves critical to upland watershed services to be managed by the Forestry Department or the NWC. This could include a percentage, even if initially a very small one, out of water abstraction licence fees, as suggested in the National Forest Management and Conservation Plan, as well as user fees on construction projects in watersheds which have been considered by government.
15. **Conservation Easements:** These should be established early to allow landowners to retain ownership of their land but to use it for limited purposes while permanently removing their right to use it for certain non-conservation purposes.
16. **Land Exchanges:** Implement a scheme of land exchange which would allow landowners to exchange, for example, property that is significant for watershed management and conservation reasons with a different property that may be of equal economic value.

### Long Term

17. **Tax Allocation:** Government should consider allocating national or municipal taxes to specific areas of great importance to watershed management.
18. **Conservation Agreements:** This should be facilitated to allow a landowner to enter into a legal agreement to manage his or her property according to specific conservation terms, in exchange for financial compensation.
19. **Tax Incentives for Improved Land Use:** Create tax mechanisms to assist upper watershed landowners to engage in reforestation, fruit tree growing based on good land use standards.
20. **Improve Land Tenure Arrangements:** Establish mechanisms for settled land tenure arrangements for farmers and residents in the watershed, tying security of tenure to meeting watershed friendly land use standards. (With the possibility of loans or Social Investment Fund grants to assist poorer farmers meet those standards).
21. **Controlled Access to Shared Resources:** Controlling access to shared resources: governments can use a combination of regulation and designation of limited ownership rights to provide incentives for conservation of shared “common” resources such as fisheries or birds.

22. **Tradeable Development Permits:** Government can use market incentives for conservation by creating a set of tradeable permits for development of a given area that can be used in conjunction with “credits” for watershed management and conservation activities;
23. **Biodiversity Prospecting and other benefits-sharing mechanisms:** Incentives for watershed management and conservation can be created by resource use agreements, for example, in the pharmaceutical industry, that provides a portion of revenues generated to return to the country, region or community where that resource is found.

### ***A Word on Implementation Strategies***

It is a truism that all life forms resist change. It is also true however, that only those that adapt well to inevitable change do survive and prosper. For us these imperatives do exist and are binding. Key government agencies, environmental NGOs and various categories of persons and some within the private sector are convinced or rather, are seized of the immediate necessity to protect our watersheds. Beyond this commitment there is a clear and present need for its translation into a generalized concern among those who inhabit and or use our watersheds. Further, and this is the hard step, we need concrete actions to give impact to this realization.

By their very nature, the initiatives considered here require changing relationships between members of the various communities, between government and the communities as well as between the private sector and government. In broad terms the strategies will have to be directed at three main groups – government, the communities and the private sector. Looking for instance at the proposals we define as immediate or short term, it is considered that the Ridge to Reef donation programme could get off the ground within six to nine months. Major hotels and other parties would have to be contacted immediately. Support of the Ministry of Tourism would also be critical. Select communities would be targeted and the process initiated for their participation. This particular project is already grounded in that it exists between Sandals and farmers in the Mafoota area. Clearly it can be replicated elsewhere - there are clear benefits for all parties involved.

In relation to our recommendations for tax-based incentives, we consider these to be of central importance. Clearly these incentives would require government approval and public acceptance of their usefulness. We consider that a Cabinet submission should be prepared to obtain broad governmental approval of these types of incentives. But before this, there must be a process of consultation with the private sector for streamlining the proposals. This should be followed by the amendment of the income tax legislation to incorporate the necessary changes. Along with the legislative changes the mechanisms for administration - which we insist must be simple and readily accessible - will have to be identified and organized. The proposals do not necessarily require a new and complex set of bureaucratic arrangements.

### **Procedures Manual: Establishing and Operating a Local Watershed Management Committee**

#### ***Purpose of the Manual***

(Note: no executive summary is available)

The purpose of this manual is to provide guidelines by which Local Watershed Management Committees (LWMCs) and other similar groups can be established and operated. The manual is targeted at social organizers, resource management agency staff and community activists and groups involved in the startup and management of LWMCs. It can also be used as a training tool for field staff of various other agencies involved in community based resource management.

## Review of Local Watershed Management Committees in Jamaica

### *Executive Summary*

Globally, there has been an increasing recognition of the importance of citizen participation in planning and management of natural resources. Initially part of a thrust started by the development of Local Agenda 21 plans, the trend has led to various forms of collaborative and participatory management.

In the 1990's Jamaica undertook a number of initiatives which saw the management of significant tracts of protected areas being delegated to NGOs. Since that time a number of other initiatives has come on stream to enable increased civil society participation on governance, planning and decision making at the local level.

In respect of natural resources management, the Draft Watershed Policy (2001), the Forest Act (1996), Forest Policy (2001) and Water Policy (2001) all make provisions for local participation in management and advisory activities. Several groups have been established with a mandate to manage/ provide advice on the management of watersheds and related resources. These include: The Rio Grande Watershed Management Committee (RGWMC), the Great River Watershed Management Committee (GRWMC), the Local Forestry Management Committees (LFMCs) of the Pencar/ Buff Bay Watershed; Water User Associations (WUAs); farmer groups in eastern Jamaica supported by the Rural Agricultural Development Authority (RADA) and the Eastern Jamaica Agricultural Support Project (EJASP); and the National Sanitation Task Force.

A review of these groups according to: Mandate; Legislative/policy framework; Legal status; funding and Institutional support; extent of linkages with governance and other structures; lessons learned; elements of group formation had the following findings:

- The groups shared **common elements** of group formation including donor/ government agency led support for the process; steps taken toward group establishment; method of awareness raising, capacity building and project planning
- There were **common constraints** which included the absence of resources to sustain local management efforts; insecurities regarding the sustainability of the process once external funding ceased; irregular attendance at meetings due to conflicts with time necessary to earn a living; fatigue – frequently the same persons involved in most community activities are called upon to serve on these committees; lack of land tenure and a resulting lack of few incentives to invest time and effort to contribute to a long term process of stewardship; inadequacy of financial and human resources to facilitate the participation of local authorities and the Social Development Commission and low level of literacy among community members particularly among deep rural and farmer groups.
- Among the **lessons learned** were: the process of group formation is involved and the length is determined by the capacity of the community to organize around common issues; the process requires the skills of a social organizer or skilled facilitator; there is need to build technical capacity in watershed management at the local level; land tenure and access are important to engendering stewardship responsibilities within communities; there is much latent talent among communities; it is important to meet people where there needs are; public recognition of successes is critical to building esteem; illiteracy is a significant impediment to development; PDCs and CDCs need to have more autonomy and resources to fulfill their mandate; there is need for a national mandate for institutional actors; there is a need for improved coordination especially among community stakeholders and institutional actors to reduce overlap.

In proposing a mechanism by which LWMCs can be established, the following are considered: LWMC functions, Policy and Legislative framework, Institutional Framework and optimum linkages; and levels at which LWMCs are developed.

Appropriate functions for LWMCs may include:

1. Mobilization and facilitation of community participation.
2. Development and implementation of income generating and other project activities to conserve and protect watersheds in collaboration with local and national public and private sector agencies.
3. Public awareness within the designated areas and linking the community with other agencies concerned with watershed management.
4. Supporting enforcement and compliance of relevant laws and regulations, and advocacy on behalf of local watershed area interests.
5. Provision of advice to relevant authorities and field staff, and monitoring of activities of watershed users.

The Policy Framework for the management of watersheds by local management entities is captured in several documents including a Cabinet Order, (July 2001) establishing the National Integrated Watershed Management Council, the Local Watershed Management Committees and the Local Forestry Management Committees as mechanisms to contribute to watershed management in Jamaica; The Draft Watershed Policy Paper: "Towards a Watershed Policy for Jamaica (2001)" which mentions LWMCs as part of the strategy for implementation of WM at the local level; the Forest Policy (2001) which includes community participation as a major strategy for implementation of local forest management; the Forest Act which speaks to the appointment of LFCs with specific advisory and monitoring roles in local forest management; other national initiatives such as the process to modernize the planning framework to incorporate citizen participation in local level planning and implementation; local level initiatives to improve the performance of local authorities in undertaking a greater role in local level management; and the framework for Local Sustainable Development planning which incorporates notions of governance and local participation in a new framework for planning.

The institutional framework governing watershed management includes the following categories of stakeholders: regulatory; custodial; technical information, advisory, extension and research; coordinating committees; NGO's and external agencies; and local level support. The linkages between the stakeholders are complex (Fig 1) but are characterized by reciprocal links between: the LWMCs (all levels) and the NIWMC via the LGCWG; between the various levels of LWMC i.e. community, sub-unit and WMU level; between LWMCs and the technical agencies who provide advice and guidance and who are also advised by the LWMCs; and links with the SDC and PDC structures which provide local level support to facilitate participatory processes.

There are different levels at which the LWMC can be established One is at the Watershed Management Unit Level, where the interest of the entire watershed is the focus of the group; the second level is the sub unit level where the watershed is broken down into smaller units which may be based on geographical integrity, and the third level is the community level where one or two communities take responsibility for the watershed area most closely related to their community. The high cost of establishing and supporting activities at the watershed wide level is of concern because of the implications for the sustainability of the effort following the end of the respective projects. It may be prudent to break down the larger watershed wide management groups into smaller units which can more easily be managed without large amounts of financial

resources. This is an alternative which the R2RW should explore within the last two years of the project.

There are a number of gaps in the various pieces of policy documentation related to local watershed management. Chief among these gaps are the following:

1. **The Watershed Act (1963)** which has no regulations and makes no mention of LWMCs. As such, it is in need of considerable updating to reflect among other things, the new participatory approach to watershed management,
2. **The Draft Watershed Policy** whose review and finalization has been overtaken by several events, the most significant of these have been the establishment of the National Integrated Watershed Management Council (NIWMC) and the establishment of several local resource management groups in watershed areas. There are therefore gaps related to local watershed management, the role and function of the NIWMC, the role and function of LWMCs and relationships between the two entities.
3. Despite the naming of these committees as management committees, their roles as outlined in the Forest Act for example, appears to be more advisory.
  - a. The mandate and role of the main institutional players differ considerably in the respective policy documents. For example, while the Draft Watershed policy asserts that the Forest Department has “overall responsibility for the implementation of watershed protection and conservation”, the Forest Policy and Forest Act does not reflect this view.
  - b. Official recognition of LWMCs. There are no provisions in the current Draft Watershed Policy for the recognition of the LWMCs as legal entities capable of operating bank accounts and entering into legal agreements with other partners.

It is recommended that the Draft Watershed Policy document and Watershed Protection Act be modified to:

- Clarify the role of the NIWMC.
- Address the role of LWMCs and their linkages with community level structures such as PDCs, CDCs etc.
- Address the issue of registration of LWMCs with the NIWMC to facilitate their independent operation as legal entities.
- Define arrangements where other groups such as LFMCS, WUAs etc can be designated to operate as LWMCs in specified areas.

The Forest Act, Watershed Protection Act and the respective policies need to be harmonized to reflect a common view of the identity and role of the institution responsible overall implementation of watershed management.

The essential steps in establishing an LWMC are:

1. **Preparatory** – involves assessment of the available institutional and financial resources, build public awareness of benefits of organization; identify issues and organizing them to meet a common end.
2. **Group formation and action planning** - involves developing group vision, objectives, scope and mechanisms of operation. Culminates in group establishment by way of democratic elections, and



3. **Learning by doing** - Implementation of project activities identified collectively by the group; monitoring of project activities, evaluation of results; testing of policy
4. **Policy Review and Adaptation** - involves the transmission of information and results from the LWMCs (field) to the NIWMC to facilitate national level coordination, policy review and adaptation.

### **Communication 2003: Compliance and Enforcement Campaign Poster's Pre-test**

#### ***Executive Summary***

The study was an extension of earlier tests on “compliance & enforcement” communications materials conducted for the Ridge to Reef Watershed Project in Jamaica. An earlier phase highlighted low literacy effects, and an inability of participants to clearly identify messages. Key changes were required and made to:

- **The key line “It Haffi Legal”**: often misinterpreted to mean that images and activities depicted must indeed be legal.
- **Penalties & fines**: often overlooked as (a) respondents unable to read them; or (b) relative lack of visibility or significance.
- **Key messages**: not generally understood, for a number of reasons.

The communication materials were adjusted to include:

- (More-or-less) consistent use of the heading “***It Nuh Legal***”;
- (More-or-less) consistent use of a follow-on line identifying exact specific activity declared illegal.
- Prominent use of a red-coloured “**STOP**” sign in line with the heading;
- De-emphases on some visual clarity, and increasing focus on key messages;
- Increasing prominence and visibility of fines and penalties.

A total of 16 posters were “tested” during this study phase. The study was conducted using eight (8) focus group sessions, with participants from the Kingston Metropolitan Area (KMA), Portland, St. Mary, and Clarendon. The age ranges and occupations varied from secondary school students to adult farmers, fishermen, and other occupations.

The new materials were much better understood and accepted, especially amongst lesser-educated participants. The main “messages” relating to penalties and fines for activities shown were clear for most posters.

This changed perspective seemed mainly due to the change in emphases for pictorials, and the new focal points due to written words/typefaces/type-size. Maybe less important in overall impact was the new headliner: “***It Nuh Legal***”, with follow-on identification of exactly what was not legal. The line was never a focal point for discussions, and mostly had to be asked about.

Use of the **STOP** signage generally worked. It conveyed the fact that activities being discussed and/or shown were not to be carried out, otherwise there would be a penalty to pay. However, there might still be marginal disagreement regarding best use of symbol(s). It was felt that impact could be increased e.g.

- Placement exactly at the activity that people were asked not to engage in;
- Some of those unable to read might still be unable to interpret the **STOP;**
- By using the “strike-through” symbol (e.g. that used for “no smoking”).

Analytically, the truth is that everyone understood clearly what it meant, but the impact towards being a **strong** and **definitive** deterrent, was not always outstanding.

The fines and/or penalties created much discussion. It is clear that once the campaign is started, there will be public debate, regarding differential level of fines vis-à-vis illegal status of activities. Other factors likely to form part of this debate include:

- Government’s provision of adequate facilities to facilitate compliance;
- The extent monitoring and enforcement will take place;
- Media publicity to be given such penalties and fines actually enforced;
- The perception that a “poorer class” might be unfairly targeted.

Discussion of fines also highlighted important perspectives e.g.:

- If and when the stated fine was felt to be too high (e.g. \$1,000,000 for littering), it could be interpreted as untrue.
- If and when the fine was too low, without a prison-term, then people might prefer payment of the fine.
- If and when the fine was too high relative to the prison-term, some people could prefer prison;
- Children did not always clearly understand the level of fines i.e. they had no realistic concept of the value of such monies.
- For the lower-income adults, the level of fines was of direct concern, especially if they could be responsible for infringements due to their children.

The posters with the best overall response were:

- (#4) **STOP: It nuh legal: to throw your trash on our roads!** Keep it until you get a BIN!  
*... This was mainly due to the wide appeal ...*
- (#12) **STOP: It Nuh legal: to destroy the wire that holds these stones together:**  
Don’t damage these gabion baskets that help prevent landslides and Flooding  
*... This was due to the almost complete clarity of what was being conveyed ...*
- (#13) **STOP: It nuh legal: to wash your spray can in our rivers or streams**  
*... This was due to the almost complete clarity of what was being conveyed ...*

Posters with the least overall appeal were:

- (#10) **STOP: It nuh legal: to let fires burn out of control when you clear your land.** You must get approval to set any fires in Jamaica  
*... This mainly due to unclear visual representation and mixed messages ...*

- (#2) STOP: It nuh legal: to catch, kill or keep any of these animals**  
*... This mainly due to unclear visual representation and mixed messages ... as well as inadequate educational information ...*
- (#3) STOP: It nuh legal: to catch, shoot, kill or keep any Jamaican birds (except for those which require a Bird Shooting Permit in season). All birds are protected by LAW!**  
*... This mainly due to unclear visual representation and mixed messages ... as well as inadequate educational information ...*
- (#5) STOP: It nuh legal: to throw garbage in our river: Keep trash out of our rivers and streams! It's a crime to pollute our waterways.**  
*... This mainly due to unclear visual representation ...*

The overall campaign was felt a good and necessary one. However, one of the important concerns related to the need first to make people aware of the issues, and educated them before imposing (such heavy) fines and/or penalties. The development of these materials seems almost complete. Lessons Learned include:

- Although not all participant recommendations need to be adopted, the suggested directions should be reviewed.
- A majority of the population to which these materials are targeted are constrained by literacy levels, therefore interpret visual materials very literally.
- The attempt at more inclusiveness based on SES, seems largely to have worked e.g. in poster #4. This should be a guide as to further materials' development.
- If fines and/or penalties are correct, much discussion should be expected about a number of issues, and justifications scripted ahead of the questions.
- Focus on penalties and fines could be softened by including "For More Information ..." in footnotes.

**Workshop Report – Local Watershed Management And Governance Mechanisms:  
 “Towards Greater Citizen’s Participation In Sustainable Watershed Management”**

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## The “It Haffi Legal” Campaign

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### Revised Music Video & Shooting Scripts

#### Scene # 1

#### Act # 1

Location **Lethe (Midway, Right Hand)**

Talent **“3 Kids”, “Smiling Cop”**

(Mountain Valley Road) Dynamic Jib shot of riverside scene – the camera skims over the top of shrubs as “3 Kids” (singing work song) remove trash from the riverside and deposit it in white drawstring garbage bags. As the jib rises, the bicycle wheels of “Smiling Cop” (SC) appear, shot reveals “SC” and “3 Kids” as the cleanup operation progresses.

Location **Montego River &/OR Lethe (Midway, Right Hand)**  
L.S. - Flowing River; tall trees.

Location **Lethe (Midway, Right Hand)**

Talent **“3 Kids”, “Smiling Cop”**

C.U.s – “3 Kids” in action – hands putting garbage in bags; shot from inside bag; shot from inside shrub; “Kid # 1” smells flower petals; “SC” watching; “Kid # 2” picking flower; legs and feet wading through tall brush.

Location **Lethe (Rafting Office)**

Talent **“Earth Defender”, Bystander – crew member**

Steady Cam - “Earth Defender” (ED) as he enters track with T-shirts for “3 Kids”; hailing bystander, he walks into scene.

Location **Lethe (Midway, Right Hand)**

Talent **“3 Kids”, “Smiling Cop”, “Earth Defender”**

C.U. – “Kid # 3” looks up to see “ED” and runs toward him.

Steady Cam - All “3 Kids” running to “ED”.

Steady Cam - “ED” while he gives each kid a T-shirt and hails “SC” (revealed).

C.U. – “3 Kids” looking at and putting on T-shirt with message on back - **ENVIRONMENTAL LAWS PROTECT YOUR RIGHTS**

**Sound Effects** - River water, bicycle wheel, kids singing chorus.

**Act # 2**

Location           **Lethe (Midway, Right Hand)**

Talent             **“3 Kids”, “Smiling Cop”, “Earth Defender”, “Illegal Man”**

C.U. - Fire smoldering – jib shot reveals “Illegal Man” (IM) burning and littering the river.

Steady Cam – “3 Kids”, “SC” and “ED” approach with cleanup.

C.U. – “3 Kids” hands; legs as they walk.

M.S. - Group walk pass camera (camera advances toward group). “3 Kids” first, “ED” some distance behind and “SC” even farther back.

M.S. – “IM” surrounded by burning debris is alerted by sounds.

L.S. – “3 Kids” approaching.

M.C.U. – “IM” sees kids and hisses teeth, continuing with activity.

L.S. – “ED” approaching.

M.S. – “IM” sees “ED” and hurriedly covers the fire with green bush.

L.S. - The fire smolders in foreground as “IM” tries to conceal it.

M.S. – “ED” frowns.

IM:        ***“Is just a little fire.”***

ED:        ***“Fire burning is illegal!”***

IM:        ***“Gwey, fire free!”*** (Waving stick menacingly)

ED:        ***“It haffi legal, lyah.”***

Kids:      ***“Yes, environmental laws protect your/our rights!”***

C.U. - Bicycle wheel comes to a halt. Jib moves to reveal “SC”.

SC:        ***“Or face the law.”***

“IM” drops the stick and runs.

Steady Cam – “IM” running through bushes. “SC” gives chase.

Location           **Lethe (Midway, Left Hand)**

Talent             **“Illegal Man”**

C.U. – “IM” peeks from behind the fence and climbs sneakily onto roadway.

Location           **Lethe (Midway, Right Hand)**

Talent **“3 Kids” – Sound recording only**

**Sound Effects** “3 Kids” talking and laughing.

Audio	Video
Location: <b>Lethe (End of Rafting)</b> Yow! It haffi legal lyah yuh dun know	Talent: <b>“Earth Defender”, “3 Kids”, 20 uniformed school children</b> “Earth Defender” (with “3 Kids” and school children dancing in the background) gestures to the camera as he sings.
Location: <b>Seven Rivers</b> Everyday yuh get up an ah bun fire	Talent: <b>Trash sweeper, 1 child, “3 Kids”</b> Farmer/Rural person sweeping up trash, a container of fuel (kerosene) near his foot. Container spills.
Fire!	Conflagration! A child screams (lip sync) the word, <b>“Fire!”</b>
Bun yuh bush, yuh plastic an ole tyre Location: <b>Lethe (Midway, Right Hand)</b> Fling yuh garbage inna di river	“3 Kids” blast the fire with a hose. Talent: <b>2 Children - Boys, “Illegal Man”</b> Two boys, influenced by “Illegal Man”, throw scandal bags into a river.
Location: <b>Montego River</b> Now mi fraid fi drink di water	Talent: <b>2 Children</b> A group of children scoop water from a river into their hands and shake their heads in disappointment.
Yow!	The children hold their noses and rush from the river.
Location: <b>Lethe (End of Rafting)</b> Mister man yuh got to understand	Talent: <b>“Earth Defender”, “3 Kids”, 20 uniformed school children</b> “Earth Defender”, the “3 Kids” and school children sing and dance.
Location: <b>Chester Castle and Montego River</b> Wi have to all work together to protect this land	Talent: <b>“Smiling Cop”, “Illegal Man”, van driver, 2 sand miners</b> “Smiling Cop” riding through track. “Illegal Man” mining sand with other sand miners in the background.
Location: <b>Montego River</b> Ah don’t want nuh contention	Talent: <b>“Illegal Man”, “Smiling Cop”, van driver, 2 sand miners</b> “Illegal Man” is cornered by “Smiling Cop”, appears to be ready to give up, then points at other miners. “Smiling Cop” looks away and “Illegal Man” jumps into some nearby bushes.
The law is on my side don’t dis di programme	(Continuation of scene above)
Location: <b>Seven Rivers</b> Yuh have some man and woman	Talent: <b>Farmer, 2 laundry women</b> A farmer washes his spray can while...
Inna di river dem ah wash up dem spray pan	...two women do their laundry in the river.
Dem clothes	Talent: <b>2 motor vehicle washers, “Smiling Cop”</b> Further down the stream, two thug-looking characters are washing a car...
Dem bus	...and a minibus.

Audio	Video
Dem car and dem van	Talent: <b>Farmer, 2 laundry women, 2 motor vehicle washers, “Smiling Cop”</b> “Smiling Cop” reasons with them. They all seem willing to listen and comply.
But, please, try and understand, everything jus end up down inna di ocean	Talent: <b>Farmer, 2 laundry women, 2 motor vehicle washers</b> They begin to pack up and desist. <b>(Shooting of characters’ packing up exercises at their original locations)</b>
Mister man yuh got to understand	Talent: <b>“Earth Defender”, 4 market vendors – 3 females, 1 male</b> “Earth Defender” sings as he walks through the market hailing people.
We have to all work together to protect this land	Market scene with “Earth Defender” continues.
Location: <b>Chester Castle (Orange Orchard) and Seven Rivers</b> How else we ah go get food fi eat?	Talent: <b>4 harvesters – 3 females, 1 male (same persons as market vendors)</b> A group of women harvest crops/oranges. They carry baskets of fresh tomatoes, pepper, oranges on their heads.
Location: <b>Lethe (Lethe All Age School or Midway, Left Hand)</b> How else di water ah go stay clean and sweet?	Talent: <b>4 uniformed school children</b> Children in bright school uniforms happily drink water from their school water fountain.
Location: <b>Montego River</b> Some ah tek away the sand by the truck load	Talent: <b>“Smiling Cop”, van driver, 2 sand miners</b> “Smiling Cop” stops sand miners who are trying to escape and tickets them.
Chop dung tree and ah bun dem charcoal	(Continuation of scene above)
Location: <b>Hopewell and (B Unit/Stock Footage)</b> Now, mi land is washing away, Weh it gone? It end up down ah bay	Scenes of water siltation, soil erosion, gully flowing, and a shot of the river meeting the sea.

## Scene # 2

Location **Chester Castle**

Talent **“Illegal Man”, 1 Coalman (+ 2 – to be confirmed), “Smiling Cop”**

Early morning, rays of sunlight stream through trees revealing smoke-filled atmosphere.

Sound of axe/power saw cutting tree.

Jib lowers to reveal “IM” cutting tree with coal kiln and coal man/men in background. Sign, **ENVIRONMENTAL LAWS PROTECT YOUR RIGHTS**, in side of frame.

L.S. - Coal burner(s) tending to kiln.

“IM” looks at sign with disdain.



“SC” is riding through community.

Tree cutting continues.

“SC” is riding on bridge.

C.U. - Axe chopping.

M.S. – “SC” riding through woodland track.

“IM” cuts down signpost and throws it on coal kiln.

L.S. – “SC” riding toward scene.

IM: **“Stupid sign! Move and gwey!”**

M.S. – “IM” turns to sees “SC” riding by and hides in the bushes.

C.U. – “IM”, as he exclaims to coal burner/s, **“Police!”**

High angle L.S. - They scatter in all directions.

Low angle M.S. – “IM” in bushes.

Kids (OFF SCREEN VOICES): **“You can run but you can’t hide. Do the right thing... do the right thing”** (Audio recording to be done at Lethe (Midway, Right/Left Hand during shoot at that location)

High angle L.S. – “IM” as he freezes in fear; thinking that the voices are from the ‘Environment’s Spirits’, he bolts, screaming in panic.

Audio	Video
Location: <b>Lethe (End Raft)</b> Yow! Mister man yuh got to understand	Talent: <b>“Earth Defender”, “3 Kids”, 20 uniformed school children</b> “Earth Defender”, “3 Kids” and school children sing and dance.
Location: <b>Seven Rivers</b> We have to all work together to protect this land	Talent: <b>Van driver, 2 sand miners, coal man/men</b> Sand miners and coal burner/s talking in town square.
Ah don’t want nuh contention	Talent: <b>Van driver, 2 sand miners, coal man/men, “Illegal Man”</b> A panting, tired, dirty and beaten-looking “Illegal Man” is trying to win the support and help of the two deserted side men and the charcoal man/men.
Nuh badda mek we haffi end up down ah station	Talent: <b>Van driver, 2 sand miners, coal man/men, “Illegal Man”, “Smiling Cop</b> They notice “Smiling Cop” approaching and disperse. “Illegal Man” is nabbed by “Smiling Cop”.
Mister man yuh got to understand We have to all work together to protect this land	Talent: <b>Van driver, 2 sand miners, coal man/men, “Illegal Man”, “Smiling Cop”, “3 Kids”, toothless old man, 4 market vendors</b> Cop marches “Illegal Man” through town. “3 Kids” cheer and laugh, a toothless old man enjoys the moment, market vendors laugh and hug each other, 2 of the “3 Kids” do an enthusiastic high five.

Audio	Video
How else we ah go get food fi eat? How else di water ah go stay clean and sweet?	Talent: <b>Van driver, 2 sand miners, coal man/men, “Illegal Man”, “Smiling Cop”, “3 Kids”, “Earth Defender”</b> “Earth Defender” and the “3 Kids”, joined by “Smiling Cop”, the sidemen and charcoal man.
Mister man yuh got to understand We have to all work together to protect this land	Talent: <b>“Illegal Man”, “Smiling Cop”</b> “Illegal Man” tries to escape but “Smiling Cop” holds him tighter.
Beg oonu please try and understand	Talent: <b>Van driver, 2 sand miners, coal man/men, “3 Kids”, toothless old man, 4 market vendors, “Earth Defender”</b> The crowd laughs.
Location: <b>Hopewell &amp; Montego River</b> Everything will end up down inna di ocean	Talent: <b>4 children</b> Scene of river meeting the sea, scenes of river flowing peacefully, scene of children splashing happily in a clean river.
Location: <b>Seven Rivers</b> Mister man wi got to understand We have to all work together to protect this land	Talent: <b>“Earth Defender”, “3 Kids”, “Smiling Cop”, 4 market vendors, Van driver, 2 sand miners, coal man/men.</b> “Earth Defender” and the “3 Kids”, joined by “Smiling Cop”, market vendors, the sidemen and charcoal man.

### Scene # 3

Location **Ramble**

Talen: **“Smiling Cop”, “Illegal Man”**

External - Day

“Smiling Cop” leads “Illegal Man” inside police station.

Internal - Day

Dark - inside of jail area. “Illegal Man” sits and stares at the camera as he holds on to the bars of his cell.

IM: **“Yow! It haffi legal, lyah! Fi real.”**

### Legend

Locations & Relevant Talent Have Been Colour-Coded for easy Shooting Reference/Grouping

Orange – Lethe

Blue – Montego River

Bright Green – Chester Castle

Turquoise – Seven Rivers

Pink – Hopewell

Black – B Unit/Stock Footage

Sea Green – Ramble

## **Haffi Legal Iya**

Campaign Strategy Meeting, Red Room, NEPA, Thursday, April 3<sup>rd</sup>, 2003

The purpose of the meeting was to draft an initial strategy to launch the Haffi Legal Iya campaign.

### **Present were**

Rosemarie Chung	NEPA Pub Ed
Onyije Chigozili	NEPA Pub Ed
Zadie Neufville	NEPA Pub Ed
Maria Protz	Ridge to Reef
Mark Nolan	Ridge to Reef
Trevor Spence	Ridge to Reef
Gina Sanguitti	NEEC and ENACT
Erroll Matthie	Ministry of Health
Marcia Thompson	Pesticide Control Authority

### **Apologies**

Novelette Douglas (ENACT), Thera Edwards (Sustainable Watersheds Branch)

The points below were discussed during the meeting:

### **When should the event be held?**

- It was suggested that the overall launch of the Haffi Legal Campaign should be planned for Environment Week – World Environment Day, June 5<sup>th</sup>.
- A Soft launch should be done for NEPA's Earth Day celebrations on April 22<sup>nd</sup> – so some of the posters could be presented at that time.

### **Who should be involved?**

- The official launch should be done in collaboration with the launch of the Pocket Guide – a publication of ENACT, NEPA and R2RW. Gina Sanguinetti would discuss the possibility of ENACT sponsorship for the event with her colleagues at ENACT, in particular, Novelette Douglas.
- Gina also mentioned that JET (Jamaica Environment Trust) has produced a publication "It inna di law" that could also be highlighted at the event.
- Rosi suggested that the campaign should be a MAJOR NEPA activity – very high profile, and that it should be a main activity of the Public Education and Outreach Branch. In addition to Onyije Chigozili and Zadie Neufville, it was suggested that NEPA's PR officer – Agostinho Pinnock should be play a key role.
- A core planning/coordinating committee should also be established ASAP with members of the other agencies who have contributed to the poster process – FD, NIWMC, Ministry of Health, PCA, the Police, etc.

### **Who should be invited?**

- Students/staff of the Norman Manley Law School.

- NEPA project representatives.
- The Police (the commissioner needs to be involved and/or Neville Wheatle).
- NIWMC members.
- Each state agency involved in the programme needs to identify those persons to be invited from their respective ministries.

#### **What type of event?**

- It was suggested that it should be “BIG event” with the involvement of the Prime Minister. Rosi Chung is to make contact to see if he would be interested ASAP.
- Emancipation Park was suggested as a venue. Mark Nolan investigated and this is available for World Environment Day.
- It was suggested that the day be a sort of Fair with exhibits and booths from the different agencies involved in compliance and enforcement.
- School children could visit and participate.
- Other “drawing cards” beside the prime minister that were suggested were: Courtney Walsh (although he would probably cost money) and the Police Officer of the Year (a woman, her name to be confirmed).

#### **Poster distribution**

- A table was reviewed that proposed various outlets for the poster distribution and several other outlets/channels were suggested, including: bars, airports/aerodromes, banks, credit unions, police youth clubs, media houses, hotels, and neighbourhood watch committees. It was suggested that R2RW contact JIS to identify all of the relevant government sources and possible other channels for distribution as some of the estimates presented may be a little shy of the actual number.
- It was also agreed that each of the contributing agencies (Ministry of Health, PCA, etc.) should discuss how they will promote the materials within their own organizations.
- In the meantime, it was suggested that R2RW should go ahead and print roughly between 3,000 and 6,000 of the respective posters that have been finalized.

#### **TV Video distribution**

- Cable stations
- JIS TV
- JIS roaming vans
- TV interviews need to be set up
- Explore private sector sponsorship of the video on the jumbo trons of anbell
- Look for other private sponsorship (such as Michael Lee Chen –NCB)

- Cinema shorts prior to the commencement of movies should be explored

#### **Radio promotion**

- Treat Wi Rock Right
- All radio stations

#### **Print distribution**

- Gleaner flyers, features should be investigated
- Children's own
- Black & white adverts for the phonebook
- Features in both newspapers on each law

#### **Calendar**

- A calendar highlight most of the posters should also be prepared for 2004 distribution

#### **Supportive materials**

- It was suggested that it would be appropriate for Gina Sanguinetti of the NEEC to do a short fact sheet/flyers for teachers (i.e., teaching notes) on how to use the posters and brochures and other material.
- Flyers should also be done for NEPA staff so they know how to use the material effectively

#### **Prizes**

- The jingle CD and posters should be used as prizes for fairs and school competitions throughout the year

#### **Concerns/Issues**

- Is there really enough time to launch an event of this scale (Prime Minister, fair/booths, exhibits)?
- R2RW can contribute some resources and personnel (Marcia Erskine, for example), but NEPA would have to take the overall responsibility to make the event a success if the PM is to be involved.

## SWB/NEPA Retreat

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### Report Of The SWB Of NEPA Retreat Held At The Starlight Chalet, Silver Hill Gap, Blue Mountains January 24 – 25, 2003

#### 1. *General*

The SWB of NEPA held a Retreat (**Please see Appendix I for Agenda**) at the Starlight Chalet, Silver Hill Gap, Blue Mountains on January 24 – 25, 2003. The Retreat was facilitated by Mark Nolan, Leo Douglas, and Trevor Spence of the R2RW Project.

#### 2. *Purpose*

The Retreat was undertaken to assist members of the SWB in:

1. Reviewing their earlier Team Building exercise (held in November 2001) in order to determine what has been achieved since then, and the challenges faced;
2. Confirming where the SWB is at this point (Current Reality);
3. Developing consensus on a “Vision” for the Branch;
4. Defining what needs to be done in the short-term to achieve this vision (Strategic Direction); and
5. Defining an action agenda and commitments to realize the agreed strategic directions.

#### 3. *Background*

The SWB of NEPA was re-established during 2001 under a new Manager, and in the context of a new organizational structure. Additional persons have been brought onto Staff, and there has been the expectation of a new culture to meet the requirements of a new institution.

There has been the assumption that this new working environment demands:

- a) An acceptance that there is a new working environment;
- b) A Team Approach by the Branch, with Staff in diverse locations; and
- c) A high level of initiative, professionalism, and commitment from members of the Branch

The Team Building exercise undertaken in 2001 accomplished the following:

- a) Establish the level of team spirit existing among members of the staff, and the commitment to the objectives of NEPA; and
- b) Assisted the Team to examine concerns and to find solutions for those concerns.

#### 4. *Methodology*

The Methodology used for the 2003 Retreat had the following components:

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- a) **Review of 2001 Team Building Exercise**
- b) **Visioning** – an examination of participants vision for the Branch
- c) **Current Reality** – establishing the constraints to achieving this vision
- d) **Action Planning** – determining the specific actions needed to achieve these Visions.

#### **5. Review of 2001 Team Building Exercise**

The 2003 Retreat reviewed the outcome of the 2001 Team Building exercise. A summary (**Appendix II**) was used to refresh participants mind, and encourage discussions on accomplishments/strengths, limitations/expectations, actions, and roles/responsibilities.

Participants then shared their diverse experiences and characteristics. Persons brought out the fact that they were of:

- Diverse ages – young, old
- Different size and shapes – fat, slim, tall, short
- Different Physical features – black, white, long hair, bald
- Differences in Gender – Male, female
- Different family status - Young Mother
- Different status – job, church, achievement, background
- Different practical interests – sports, hobbies
- Had different practical experiences – urban, rural, up-town, down-town
- Different Training – natural science, social science, management, secretarial, general arts
- Different levels of Knowledge – Masters, Bachelors, Certificates, University, College, High School
- Cultural diversity – Jamaican, American
- Speak different Languages – English, French, Spanish
- Different commitment – high, low, average

Participants agreed that although we had all these differences, we were all a part of a team, and could use our rich diversity to strengthen each other.

#### **6. Visioning**

Participants were then taken through a visioning exercise to build consensus on a set of vision outcome statements for the Branch. Responding to the Focus Question “**What is our vision for the SWB by the year 2005?**”; participants first prepared, 3-5 cards on their vision for the branch.

These were posted on boards, and then clustered according to themes. Reflections and discussions followed.

The visions that participants agreed on were:

- 1) **Equipped modern facilities** - fully equipped with staff and facilities for better management of watersheds; comfortable, fully equipped office in Kingston and out of Kingston, with database to undertake water quality monitoring etc.
- 2) **High level of internal and external collaboration** - more integration of relevant agencies, and better working relationship: "We see people sharing their knowledge and expertise".
- 3) **Highly motivated and committed team achieving its stated objectives** – proactive, innovative, motivated, and dedicated team; well organized and working towards desired goals; achieving aim and objectives for e.g. updated watershed policy; working together as one team; with well developed operational procedures.
- 4) **Increased image and profile of SWB through public awareness and community participation** - increased watershed sustainability; greater visibility in watersheds; greater priority for watersheds and more participation in community activities.
- 5) **SWB leading branch in NEPA** - effective Branch that all Jamaica can talk about; trophies for accomplishment in watershed management.
- 6) **Well trained, highly competent Watersheders** - training of officers being undertaken; better enforcement of environmental laws being carried out; cadre of skilled, industrious, highly trained and educated staff; aware and sensitized officers with greater level of competence as it relates to all aspects of watershed management; effective reporting of regular and special events.

## 7. Current Reality

Participants used Worksheet I (**attached as Appendix III**) to indicate their perception of "**What are the constraints that need to be addressed by the Branch in order to achieve this vision**"

Participants used the vision clusters, areas presented on the worksheet, and their own experiences to assist them in prioritizing these constraints. Participants used the table provided on the worksheet to select and fill in what they consider to be the top 3-5 constraints facing the SWB, and recommended possible solutions to deal with these constraints. Four groups were identified to deal with constraints

The following tables shows the constraints that participants felt had to be dealt with in order to achieve the above vision:

**Table I (A) Constraints by Groups - Group 1**

Constraints	Possible Solutions
Lack of funding	Seek external funding and user fees
Lack of motivation and incentives	Formulation of accolades /recognition for all achievement
Lack of communication	Sharing of information among internal and external customers
Lack of human resources	The hiring of additional educated and highly trained staff to achieve objectives of branch



Constraints	Possible Solutions
Lack of interagency cooperation and participation	Better communication and networking among agencies

**Table I (B) Constraints by Groups - Group 2**

Constraints	Possible Solutions
Resources/finances	To prioritize other funding/non GOJ and conserve resources
Poor communication	Email and cell phones; small regular meetings
Motivation and commitment	Incentives and recognition
Coordination and collaboration	Share information and plans
Communication and reporting	Procedures

**Table I (C) Constraints by Groups - Group 3**

Constraints	Possible Solutions
Lack of funding	Increase funding by income generating activities internally and externally
Lack of information/communication	Internal forums/workshop for information sharing
Lack of training/incentives and remuneration	Increased training of staff members
Lack of equipment and facilities	Bring salary in line with central government and purchase more equipment
Lack of proper coordination/collaboration	Internet services for all staff members

**Table I (C) Constraints by Groups - Group 4**

Constraints	Possible Solutions
Inadequate skills	Training needs assessment
Lack of resources	Seek non-GOJ funding
Lack of proper reporting	Procedures writing and training
Lack of human resources	Hire staff/watch groups/develop LWMCs
Commitment – not just a job	Motivation/ reassign responsibilities

The constraints were then matched against the visions. Table II below identify the constraints against the agreed visions

**Table II Constraints to Achieving Vision**

Vision	Constraints
Equipped modern facilities	a) Lack of funding (for maintenance and purchasing); b) Lack of Space

Vision	Constraints
High level of internal and external collaboration	<ul style="list-style-type: none"> <li>a) Poor individual attitudes</li> <li>b) Inadequate lead time</li> <li>c) Lack of information</li> <li>d) Poor communication</li> <li>e) Poorly defined mandate</li> <li>f) Lack of proper reporting</li> <li>g) Turf war/conflicts</li> <li>h) Lack of human resources</li> <li>i) Lack of clear policy and legislation</li> <li>j) Lack of understanding of message/issue</li> <li>k) Inadequate buy-in of partner(s)</li> <li>l) Need for more training; for example of communities</li> <li>m) Improved reporting mechanisms</li> <li>n) Lack of mutual goals/priorities</li> <li>o) Lack of sustained interest</li> <li>p) Better institutional arrangements (for e.g. councils or stakeholder groups)</li> </ul>
Highly motivated and committed team achieving its stated objectives	<ul style="list-style-type: none"> <li>a) Lack of centralization of office</li> <li>b) Lack of communication (internet/intranet etc., internal activities)</li> <li>c) Lack of funding for example incentive schemes and stakeholders projects</li> <li>d) Lack of equipment and skills e.g. water quality kits and kits</li> <li>e) Lack of human resources for e.g. one officer assigned too many watershed</li> <li>f) Bureaucratic red tape</li> <li>g) Too much talk and less time to act e.g. too many meetings</li> <li>h) Lack of adequate transportation</li> </ul>
Increased image and profile of SWB through public awareness and community participation	<ul style="list-style-type: none"> <li>a) Lack of funding for e.g. for projects</li> <li>b) Lack of motivation for e.g. lack of community incentives</li> <li>c) Lack of inter-agency participation and corporation for e.g. NWA and WRA</li> <li>d) Lack of adequate Human Resources</li> <li>e) Lack of highly committed staff for e.g. working late in nights in communities</li> </ul>

Vision	Constraints
SWB leading branch in NEPA	<ul style="list-style-type: none"> <li>a) Lack of proper coordination and collaboration</li> <li>b) Lack of motivation</li> <li>c) Lack of incentives</li> <li>d) Inadequate office space and resources</li> <li>e) Inadequate resources to meeting the need of watershed outreach activities</li> <li>f) Inadequate information flow internally</li> </ul>
Well trained, highly competent Watersheders	<ul style="list-style-type: none"> <li>a) Lack of autonomy</li> <li>b) Lack of capital resources funds</li> <li>c) Limitation(s) in providing study leave</li> <li>d) Need for greater transparency in the selection of candidates for study leave</li> <li>e) Lack of shared information and experiences amongst team members</li> <li>f) Frequency of training inadequate</li> <li>g) Lack of equipment and facilities</li> </ul>

### 8. Strategies Directions

Each Group was asked to identify the major strategies that was needed to achieve the above vision. Participants then selected their top three strategic directions. Table III list participants prioritization of the Strategic Directions

**Table III** Prioritization of Strategic Directions

Strategy	Vote
1. Identify funding for SWB	7
2. Develop strategy for interagency communication and networking	6
3. Identify training opportunities and needs	5
4. Continue information sharing	4
5. Prioritize and implement activities	5
6. Develop procedures manual	4
7. Hire additional staff (competent and educated)	3
8. Operationalize regional offices	2
9. Conserve resources	1
10. Develop recognition mechanisms	1
11. Hold small regular meetings	0

### 9. Action Planning

Participants in the three working groups then selected two each of the six top Strategic Directions, and build Action Plans for each one. The Action Plans listed the strategic directions and its objectives, as well as established who should be responsible for moving the actions forward.

Participants in some cases, also commented on resources needed, areas of geographical emphasis, internal and/or external partnerships, and other specific requirements they saw necessary to assist in moving the agenda forward.

Worksheet II (attached as **Appendix IV**) was used by participants to establish “**What specific actions must be taken over the next 6-8 months to assist the SWB to achieve it’s vision?**”

Table IV below provides a summary of these Action Plans.

**Table IV Summary of Action Plans**

Name	Objective	Actions	Roles/Responsibilities	Comments
Identify funding for SWB	Increased funding for watershed management development	<ol style="list-style-type: none"> <li>1. Develop project proposals</li> <li>2. Seek sponsorship from donors</li> <li>3. Lobby with policy makers to implement user fees and other collection measures</li> </ol>	Staff, Community Groups + other relevant agencies NEPA Managers and other government officials	
Develop strategy for inter-agency communication and networking	To improve collaboration and coordination between agencies for better watershed management	<ol style="list-style-type: none"> <li>1. Convene meeting between agencies on a monthly basis.</li> <li>2. Formulation of Inter-agency Committee.</li> <li>3. Designation of a Lead Agency</li> <li>4. Development of an MOU for the function of the Committee</li> </ol>	NEPA (SWB)/Agencies present	
Identify training needs and opportunities	To develop a highly trained and skilled cadre of staff in the SWB	<ol style="list-style-type: none"> <li>1. Develop questionnaires on what is needed and what can be offered</li> <li>2. Consultant (STA) to review staff, or NEPA training officer</li> <li>3. MIND/overseas courses/workshops/internet services and branch training</li> </ol>	<ol style="list-style-type: none"> <li>1. Thera Edwards/Staff</li> <li>2. R2RW/GS</li> <li>3. TS/GS/Others</li> </ol>	GAP analysis by levels re Conservation and Environmental Officers to bring all staff on par with skills

**Table IV Summary of Action Plans**

Name	Objective	Actions	Roles/Responsibilities	Comments
Continue information sharing	To increase awareness of watershed management	<ol style="list-style-type: none"> <li>1. Dissemination of information from courses attended should be made available to staff members internally and externally along with effective summary. Establish library or central location with information catalogued for easy reference.</li> <li>2. Develop watershed web page.</li> <li>3. The development of more watershed videos</li> </ol>	<ol style="list-style-type: none"> <li>1. Each staff member trained</li> <li>2. L. Kirkland/IT Branch</li> <li>3. SWB/Public Education Branch</li> </ol>	
Prioritize and implement activities	To efficiently use resources in a sustainable manner.	<ol style="list-style-type: none"> <li>1. List all activates of the SWB</li> <li>2. Prepare a budget for each of the activities.</li> <li>3. Rank each activity in terms of their importance/budget to achieving the aims of the SWB.</li> </ol>	<ol style="list-style-type: none"> <li>1. Branch/Teamwork</li> <li>2. Branch/Teamwork</li> <li>3. Branch/Teamwork</li> </ol>	The Branch could do a SWAT analysis to accomplish this.
Develop procedures manual	To establish clear operation guidelines for efficient execution of branch activities and functions	<ol style="list-style-type: none"> <li>1. Draft guidelines by each position in the Branch.</li> <li>2. Draft manual prepared.</li> <li>3. Undertake meeting to review the manual</li> <li>4. Finalize manual based on review meeting</li> <li>5. Circulate to members of the branch and HR Branch</li> </ol>	<ol style="list-style-type: none"> <li>1. Individual meetings</li> <li>2. Manager and internal auditors.</li> <li>3. All Branch Staff</li> <li>4. Manager and internal auditors</li> <li>5. Manager</li> </ol>	

## **10. Next Steps and Evaluation**

Participants were then walked through a summary, and evaluation of the days activities. Listed below are the major comments participants had about the Workshop:

- Reenergized
- Highlighted weaknesses
- Identify the need to be more effective
- Identify doable actions for implementation
- Recognized the need for team effort
- Positive information sharing
- Productive
- Issues oriented
- Good setting/relaxing atmosphere
- Fruitful
- Allow for recommitment
- Challenging

Following the Report, follow-up activities will be identified.

**AGENDA - SWB RETREAT**

Starlight Chalet, Silver Hill Gap, Blue Mountains, January 24 – 25, 2003

- 10: 00 – 10: 30 am Preliminaries (Prayers, Introductions, Purpose, Expectations)
- 10: 30 – 11: 00 am Review of 2001 Team Building Exercise
- 11: 00 – 12: 00 noon Visioning - **“What is our vision for the SWB by the year 2005?”**
- 12: 00 – 1: 00 pm **LUNCH**
- 1: 00 – 2: 00 pm Current Reality - **“What are the constraints that need to be addressed by the Branch in order to achieve this vision?”**
- 2: 00 – 5: 00 pm Action Planning - **“What specific actions must be taken over (inclusive of BREAK) the next 6-8 months to assist the SWB to achieve it's vision?”**
- 5: 00 – 6: 00 pm Next Steps



**SUMMARY OF NOVEMBER 2001 TEAM BUILDING EXERCISE  
ACCOMPLISHMENTS/STRENGTHS**

The Table below summarizes the accomplishments/strengths that Team Members bring to the Branch:

Site Inspections	Formation/ establishing of Local Management Committees	Community Strengthening	First Stakeholders Meetings
Secretarial Skills	Monitoring of JPSCo Transmission and Power Lines	Knowledge about Watershed Management	Jamaica's ICA for CEHI
Successful restart of NIWMC	Negotiation of procurement of equipment	Development of a Watershed Policy	Project Profile for Jamaica's CEHI
Working with NGOs on solid waste management	Wealth of Knowledge and Experience		

The common themes arising from this area are:

- Interaction with Community
- Support for Participatory Systems
- Formation of Local Groups
- Knowledge to inform policy
- Monitoring of environmental conditions, and
- Dissemination of information

**Limitations/Expectations**

The Table below highlights the expectations and constraints the Group mentioned:

<b>Expectations</b>	<b>Constraints</b>
Enough money	Basic arrangements not in place
Adequate equipment	Limited data
Training opportunities	Inadequate and incomplete reporting mechanisms
Computer in Mandeville	Lack of money
Practical strides in local watershed management	Timing
Adequate office space	Too much bureaucracy
More internal co-ordination	Slow response
Better office facilities in rural offices	Lack of ID
Clear cut policy	Carry forward of NRCA negative habits
Organized and advance notice of events/meetings	Establishment of NEPA - widening of the mandate

The summary of this area by the Team looks at:

- The need for other Branches and Divisions to meet their obligations.
- The complicated, over-centralized institutional framework that exist.

**Actions**

The Table below summarizes the actions that Team Members believe the Branch need to undertake in order to operate effectively:

<b>Proactive Staffing</b>	<b>Training</b>	<b>Job Description</b>	<b>Generate ideas</b>
Public Education-ongoing	Increased interaction between divisions of the Agency	Establishing of LWMCs in every Sub-Watershed	More integrated approach in structure of NEPA
Initiate Actions	Adequate Information	Farmers Training Day	Team Work
Team Approach	R2RW Project	Delimiting Sub-Watershed Areas	Working with NGOs to bring about SD

The Team summarizes actions for the Branch as follows:

- Develop components of the SWB work program/plan - Training, Public Education etc.

**Roles/Responsibilities**

The participants identified the following roles that would assist the SWB to meet its actions:

- Improve overall efficiency
- Assist staff and other branches to move actions forward
- Be an effective representative of SWB and NEPA
- Promote public awareness of watersheds (policies and issues)
- Be fully committed to duties assigned in SWB
- Upgrade computer skills
- Facilitate watershed management facilities
- Assisting/facilitating good watershed management activities
- Give administrative support and upgrade secretarial skills
- Facilitate participatory processes
- Foster team building
- Develop integrated watershed models
- R2RW to help facilitate skills development, and
- Be a clearing house for all of the above.

**WORKSHEET I  
CURRENT REALITY – CONSTRAINTS**

**FOCUS QUESTION: “What are the constraints that need to be addressed by the Branch in order to achieve this vision?”**

Participants should list either from the visions agreed on and/or from their own experiences constraints/challenges/limitations that need to be addressed, and possible solutions. Some theme areas are mentioned below to encourage dialogue. However, participants should not feel limited to these.

<ul style="list-style-type: none"> <li>▪ Inadequate Equipment</li> <li>▪ Lack of Training</li> <li>▪ Poor internal co-ordination</li> <li>▪ Inadequate management systems</li> <li>▪ No Vision for the Branch</li> <li>▪ Inadequate understanding of the role of the organization</li> <li>▪ Inadequate office facilities</li> <li>▪ Inadequate reporting mechanisms</li> <li>▪ No real interest – just a job</li> </ul>	<ul style="list-style-type: none"> <li>▪ Lack of Team Spirit</li> <li>▪ Lack of Motivation</li> <li>▪ Concerns about Leadership</li> <li>▪ Inadequate Compensation</li> <li>▪ Lack of a Conflict Resolution System</li> <li>▪ Inadequate availability of data/information to support the work</li> <li>▪ Too much bureaucracy</li> <li>▪ Lack of resources</li> <li>▪ Inadequate Skills</li> </ul>
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Participants are asked to use the table below to assist with their answer of selecting their top 3-5 constraints, and recommend possible solutions

Constraints	Possible Solutions
1. ....	1. ....
2. ....	2. ....
3. ....	3. ....
4. ....	4. ....
5. ....	5. ....

**WORKSHEET II  
ACTION PLANNING**

**FOCUS QUESTION:** “What specific actions must be taken over the next 6-8 months to assist the SWB to achieve its vision?”

<b>NAME:</b>	
<b>OBJECTIVE:</b>	
<b>ACTIONS:</b>	<b>ROLE/RESPONSIBILITY:</b>
<b>COMMENTS: (including resources needed, areas of geographical emphasis, internal and/or external partnerships etc.)</b>	

## USAID/Honduras Tour of the Great River Watershed

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### Tour of the Great River Watershed Team from USAID Honduras

September 16, 2003, 9:00 am to 3:00 p.m.

**9:00**            ***Meet at Pier One, Montego Bay***

**9:10 – 11:00**    ***Tour of the Montego Bay Marine Park: Submersible***

Participants will be taken on an underwater tour of the Montego Bay Marine Park in a submarine that will examine the status of the reefs in the Montego Bay Marine Park. Participants will have the opportunity to view the status of reefs off Montego Bay in the vicinity of the airport reefs and reefs off the Bogue peninsula.

Talking points:

- Status of marine life
- Solid waste management issues in Montego Bay
- Challenges in Marine Park Management

**11:00 – 12:00**    ***Meeting with Montego Bay Marine Park Staff to discuss Marine Park Management***

Talking Points:

- Ecosystem conservation issues
- Solid Waste Management in the watershed areas
- Sanitation Issues

**12:00 – 12:30**    ***Lunch***

**12:30 – 1:15**     ***Travel to Bethel Town***

Drive to Bethel Town in the Great River Watershed. Talking Points along the way:

- Overview of the Ridge to Reef Watershed Project
- Overview of the Great River Watershed including the Boundary between the Montego River and the Great River; Reading Heights housing scheme, Bird Sanctuary at Anchovy, railway system throughout the GRW; Montpelier Citrus plantation.
- Highlights of R2RW interventions in the Great River Watershed including Great River Green Village Awards Program, River Action with the Action Boyz, and Constructed Wetlands.

**1:15 – 2:00**     ***Visit to Hermitage Honey Project***

This is an income generation project under a R2RW Watershed Grants Program for a small community based organization seeking to expand honey production in the Bethel Town area by expanding hives and upgrading the extraction capacity.

**2:00 – 3:00**     ***Visit to Cedar Grove District***

Visit to Cedar Grove Farmers Group that is presently implementing a hot pepper production program under a Watershed Grants Program. Participants will also view tree-planting efforts under the Plant A Tree Program to “bring back the cedar into Cedar Grove”.

**3:00 – 3:15**     ***Travel by road to Mafoota***

Travel by road to Mafoota via Montpelier and Blue Hole. Talking Points:

- Great River Watershed Management Committee
- Governance issues in watershed management
- Formation of Partnerships

**3:15 – 4:00**     ***Mafoota Car Wash and Laundry Facility***

Visit to Mafoota District where participants will view work underway to construct a Car Wash facility that will utilize constructed wetlands technology to safely dispose of wastewater. This is an income-generating project under the watershed grants program that aims to provide an alternative to the common local practice of washing cars in waterways.

**4:00**     ***Depart for Ocho Rios via Montego Bay***

## Recommendations and Action Plan from Mid-term Assessment

The attached proposed chronology was drafted by and vetted through Chris McGahey, Karen McDonald-Gayle, and Karyll Johnston. It is intended to be used as a guide for action planning both immediately upon Mark Nolan's return to the R2RW office and during the upcoming preparation of the Fourth Annual Work Plan for R2RW.

It is my expectation as the Senior Technical Advisor for ARD and R2RW that each recommendation will be addressed directly, in the Fourth Annual Work Plan, or in a strategic plan of action by the Chief of Party. I will be using the recommendations as a checklist against which performance of the Chief of Party and the project will be measured. It will not, of course, be the only checklist used to monitor performance. But, because the recommendation from the Assessment Report have been reviewed to and concurred with by all key clients, expectations are high and acceptance, rejection, and performance will be monitored closely.

Senior Technical Advisor for R2RW  
Chris McGahey  
28 July 2003

### Proposed Chronology Action on Recommendations from R2RW Mid-term Internal Assessment 25 July 2003

Report Heading	Recommendation	Location in Report	Deadline	Responsible (first name lead, others support)
Component 1	Initiate coordinated process to identify and act on "anchor projects"	Page 24, Component 1, Item 1	August 2003	MNolan R2RW Team
Component 2	Engage full-time staff member for public awareness activities	Page 24, Component 2, Item 1	August 2003	MNolan PPAPRS –initial action to follow-on poster distribution
Organization and Staffing	Increase COP delegation through new organizational structure (training for key staff?)	Page 26, Organization and Staffing, Item 1	August 2003	MNolan
Management and Client Communications	Complete efforts to clarify specific information and communication needs of three key client representatives and satisfactorily meet those needs	Page 28, Management and Client Communication, Item 1	August 2003	MNolan

<b>Report Heading</b>	<b>Recommendation</b>	<b>Location in Report</b>	<b>Deadline</b>	<b>Responsible (first name lead, others support)</b>
Management and Client Communications	Ensure equitable information dissemination to each of three key client representatives	Page 28, Management and Client Communication, Item 2	August 2003	MNolan
Management and Client Communication	Confirm purpose, composition, and operation of PIC are clear, agreed upon and correct	Page 28, Management and Client Communication, Item 3	August 2003	MNolan
Management and Client Communication	Establish regular staff meeting and team briefings	Page 29, Management and Client Communication, Item 6	August 2003	MNolan
Component 1  Contract and Indicators	Develop and apply to Project-funded activities indicators directly relevant to improved watershed management  (Note per USAID: clarify and strengthen reporting against the PMP and work plans)	Page 24, Component 1, Item 2  Page 28, Contract and Indicators, Item 1	October 2003	MNolan External TA
Component 2	Continue work with governmental enforcement personnel (and consider generating indicators of success)	Page 24, Component 2, Item 3	October 2003 reflected in annual work plan	MNolan TSpence
Component 3	Plan strategy for infusing lessons learned and skills developed into Sustainable Watersheds Management Branch	Page 25, Component 3, Item 1	October 2003 reflected in annual work plan	MNolan
Component 3	Continue and expand exchange visits between watersheds (consider annual LWMC conference)	Page 25, Component 3, Item 2	October 2003 reflected in annual work plan	MNolan
Component 3	Continue engagement with NIWMC	Page 25, Component 3, Item 3	October 2003 Reflected in annual work plan	MNolan
Component 3	Capture lessons from previous USAID environmental projects through facilitated discussion	Page 25, Component 3, Item 5	October 2003	MNolan CWIP II COP NEPA USAID



<b>Report Heading</b>	<b>Recommendation</b>	<b>Location in Report</b>	<b>Deadline</b>	<b>Responsible (first name lead, others support)</b>
Organization and Staffing	Improve precision of Scopes of Work for Programme Consultants	Page 26, Organization and Staffing, Item 2	October 2003	MNolan R2RW team
Organization and Staffing	PPAPRS to lead – not directly implement – participatory, gender, public awareness, and public relations activities	Page 26, Organization and Staffing, Item 3	October 2003	PPAPRS MNolan
Organization and Staffing	GNRS will reduce facilitation and training roles and expand leadership of Component 2	Page 26-27, Organization and Staffing, Item 4	October 2003	TSpence MNolan
Organization and Staffing	COP lead design and conduct of team-building session for technical and administrative staff	Page 27, Organization and Staffing, Item 5	October 2003	MNolan External TA
Organization and Staffing	COP ensure that orientation programme is designed and implemented to increase awareness of former ASC staff	Page 27, Organization and Staffing, Item 6	October 2003	MNolan External TA
Organization and Staffing	Ensure sufficient in-office clerical support	Page 27, Organization and Staffing, Item 7	October 2003	MNolan
Organization and Staffing	Structure Construction Supervisor's contract to allow LOE for flexible support to project needs	Page 27, Organization and Staffing, Item 8	October 2003	MNolan
Organization and Staffing	Determine final organization chart for new R2RW structure	Page 27, Organization and Staffing, Item 9	October 2003	MNolan
Management and Client Communication	Demonstrate positive cooperation between R2RW and other projects in USAID environmental portfolio	Page 28-29, Management and Client Communication, Item 4	October 2003 cooperation mechanisms reflected in annual work plan	MNolan R2RW team

<b>Report Heading</b>	<b>Recommendation</b>	<b>Location in Report</b>	<b>Deadline</b>	<b>Responsible (first name lead, others support)</b>
Component 3 (text)	Support NEPA initiatives: (1) preparing National Programme of Action for Marine Pollution from Land-based Sources, (2) utility of Agency following an ecosystem approach to environmental planning, and (3) strengthening the contributions of local area, land use, and spatial planning to overall environmental management.	Page 8, Component 3, paragraph1	October 2003 Reflected in annual work plan	MNolan R2RW team
Component 1	Capture and promote achievements and lessons from field activities	Page 24, Component 1, Item 3	January 2004	MNolan PPAPRS External TA
Component 2	Training curriculum for using compliance and enforcement posters (and pocket guide)	Page 24, Component 2, Item 2	January 2004	PPAPRS External TA
Governance	Review, schedule, and communicate plans for diminishing project support to WMCs	Page 25, Governance, Item 1	January 2004 Reflect in annual work plan	MNolan R2RW team External TA
Governance	WMCs identify functions to take on during diminishing support	Page 25, Governance, Item 2	January 2004	MNolan R2RW team
Governance	Demonstrate more active engagement of private sector interests in watershed planning (also expand engagement of all Parish Councilors in the Great River watershed)	Page 26, Governance, Item 4	January 2004 Reflect in annual work plan	MNolan PPAPRS
Management and Client Communication	Articulate project successes to enable USAID to promote them to their clients and justify investments	Page 29, Management and Client Communication, Item 5	January 2004	PPAPRS External TA

<b>Report Heading</b>	<b>Recommendation</b>	<b>Location in Report</b>	<b>Deadline</b>	<b>Responsible (first name lead, others support)</b>
Component 3	Initiate actions outside of Great River and Rio Grande watersheds	Page 25, Component 3, Item 4	April 2004	MNolan R2RW team
Governance	Document lessons from operation of WMCs and propose institutionalization mechanisms	Page 26, Governance, Item 3	April 2004	MNolan External TA
Component 2	Validate effectiveness of public awareness campaign in improving compliance with laws	Page 25, Component 2, Item 4	July 2004	PPAPRS
Governance	Conduct training of trainers on participatory facilitation	Page 26, Governance, Item 4	July 2004	MNolan TSpence External TA

## Workshop – Local Watershed Management and Governance Mechanisms

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### “Towards Greater Citizen’s Participation in Sustainable Watershed Management”

Ridge to Reef Watershed, May 13-14, 2003, Runaway Bay HEART Hotel,  
Runaway Bay, Jamaica

The Workshop was co-ordinated by the Local Group Co-ordination Working Group (LGCWG) of the National Integrated Watershed Management Committee (NIWMC), the Sustainable Watershed Branch (SWB) of National Environment and Planning Authority (NEPA), the Forestry Department (FD), and the Ridge to Reef (R2RW) Project.

The purpose of the workshop was to:

1. Review the findings and recommendations put forward by Valerie Gordon, and the earlier study on Governance and Watershed Management done by Dr. Ken Ellison;
2. Recommend a process for the sustainable establishment, financing and operating of Local Watershed Management Committees (LWMCs), including functions, procedures, composition, roles, responsibilities, and institutionalization; and
3. Agree on an Action Agenda to realizing (2) above.

The attendees comprised members of the LGCWG of the NIWMC, the SWB of NEPA, FD, Social Development Commission (SDC), the Great River Watershed Management Committee (GRWMC), the Rio Grande Watershed Management Committee (RGWMC), Buff Bay/Pencar Local Forest Management Committee (LFMC) representatives of Water Users Associations (WUAs), and other groups active in, or with an interest in local watershed management

The format of the workshop comprised plenary sessions, working groups and training workshop sessions.

### Day 1 - Workshop Session, May 13

#### 1. *Preliminaries*

Ms. Thera Edwards, **Chairperson LGCWG**, chaired the opening session during which Mr Trevor Spence led the participants through an overview of the purpose of the workshop and confirmation of the Agenda. Mr Spence pointed out to participants that the Principles which should govern the proceedings were:

1. Respect
2. Honour
3. Sharing
4. Commitment
5. Participation
6. Focus
7. Do something

## **2. Greetings**

Greetings were brought by Karyll Johnson on behalf of USAID, and by Thera Edwards on behalf of NEPA as Mr. Franklin McDonald was unavoidably absent.

## **3. Background to Project and Study – Mr. Mark Nolan, Chief of Party, R2RW**

Mr. Nolan provided a background to the R2RW project and the study “Review of Local Watershed Management Committee and Governance Mechanisms” prepared by Valerie Gordon. He highlighted that the undertaking of the study arose from the need to understand better some of the strategies which have been employed in establishing local resource management groups, linkages with existing governance structures and the National Integrated Watershed Management Council, and to receive recommendations on group establishment, appropriate governance strategies and institutional linkages for improving participation in an integrated, effective, locally driven watershed management system. He also pointed out that the study followed on from previous work done by Ken Ellison, also under contract to R2RW, on Governance and Watershed Management.

## **4. PowerPoint Presentation on the Study “Review of Local Watershed Management Committee and Governance Mechanisms” – Valerie Gordon, Consultant**

Mrs. Gordon provided an overview of the study highlighting the local management groups which were studied, their modes of formation and operation, lessons learned in their development, and recommendations for the formation of LWMCs. Reference was made to the full document provided to the participants as part of the conference material, and to the PowerPoint presentation which is appended.

## **5. Discussions**

These focused on:

- The various forms of registration used by the existing local groups which generally ranged from a constitution (LFMC) to registration under the Benevolent Societies/friendly societies Act as was being considered for the WUAs.
- The role of the LFMC in relation to the LWMC. In areas where there is a LFMC, these entities will function as the watershed management group
- Where there were pre-existing groups which had the relevant requirements as outlined on p23 of the Manual, these could be designated LWMCs
- The mode of response to reported environmental issues included: reporting to the NEPA hotline or to the relevant organization with a mandate to deal with the issues under question; for long term problems it was best to identify a group solution. All required a follow up report.
- The incentives to support the LWMC. Another task force is to be set up under the NIWMC to work on incentives-this was especially relevant to the private sector. A study was done on incentives and it is being acted upon.
- The process of registration for WUAs. Various types of legal registration were under consideration as these entities had to be empowered to collect funds.

## **6. Thematic Group Work: Strategies and Action Proposals**

THE participants were organized into four working groups to deliberate on the following themes:

GROUP 1	Functions of LWMCs
GROUP 2	Constraints facing LWMCs
GROUP 3	Levels of Operation of LWMCs
GROUP 4	Funding of Local Management Groups

The Presentations based on the group deliberations were reported to the plenary session which followed.

## **7. Case Study Presentations**

### Retrieve

The LWMC has put up signs, organized field days, organized an annual environmental show. The Committee is also involved in Public Awareness through 13 schools and has held a competition. It has also received a grant for water harvesting and sanitation project which has been implemented.

### Pencar

The LFMC developed a project proposal for a nursery and received funding for it. Work has started and the LFMC is working to develop things for the community. Lessons learned include the fact that community people have good understanding of things. People must be addressed on a direct level. Regarding the flood relief provided to the parish after the bad rains– houses were being given to stalwarts instead of genuine victims. Communities don't know where to go to resolve issues.

### Colbeck (farmers group)

Farmers have come together and bought a 350 acre property. A road has been built, and the group has paid a surveyor who undertook work on the project. The group is presently trying to clean the property.

### GRWMC

Community groups or LWMCs are as successful as they make the effort to be. When a local group says that they want to manage a resource – that they have the interest and skills to do so. If things aren't happening – maybe it that the skills don't really exist. Central government can't really handle many more things. People have to take things into their own hands

### Upper Rio Grande Valley

Groups were previously sensitized prior to the R2RW project. Communities are being represented on the various committees and are looking forward to a brighter future.

## **Day 2 - Workshop and Training Session, May 14**

### **1. Summary of Previous Day's Event - Mark Nolan**

Day 2 commenced with an overview of the previous day proceedings. This was presented by Mr. Nolan who highlighted the points raised in the four working groups, the constraints and actions which needed to be taken. He summarized the discussion points in a presentation.

### **2. Presentation of Manual "Establishing a Local Watershed Management Committee (LWMC)" - Valerie Gordon**

A brief overview on the Manual was presented to the participant who were provided with a copy of the manual.

### **3. Essential Stages in Establishing a LWMC - Facilitator – Leo Douglas**

The four main stages involved in establishing and operating a LWMC were presented by a panel which made reference to the respective sections of the Manual.

Preparatory	Valerie Gordon
Group Formation and Action Planning	Trevor Spence
Learning by Doing	Mark Nolan
Policy Review and Adaptation	Thera Edwards

### **4. Operating a LWMC – Facilitator – Trevor Spence**

The rudiments of operating a LWMC was presented by a panel which highlighted six main areas of focus. The areas were presented against the background of the Manual.

Role and Functions of Local Management  
Committees, Task Forces, Sub-Committees, Working Groups – Thera Edwards  
Registration and Recognition – Valerie Gordon  
Roles, and Elections of Officers – Trevor Spence  
Meetings (Regular, Special, General etc.) – Leo Douglas  
Record Keeping – Leo Douglas  
Conflict management – Mark Nolan

## **Discussion**

The discussions and comments highlighted:

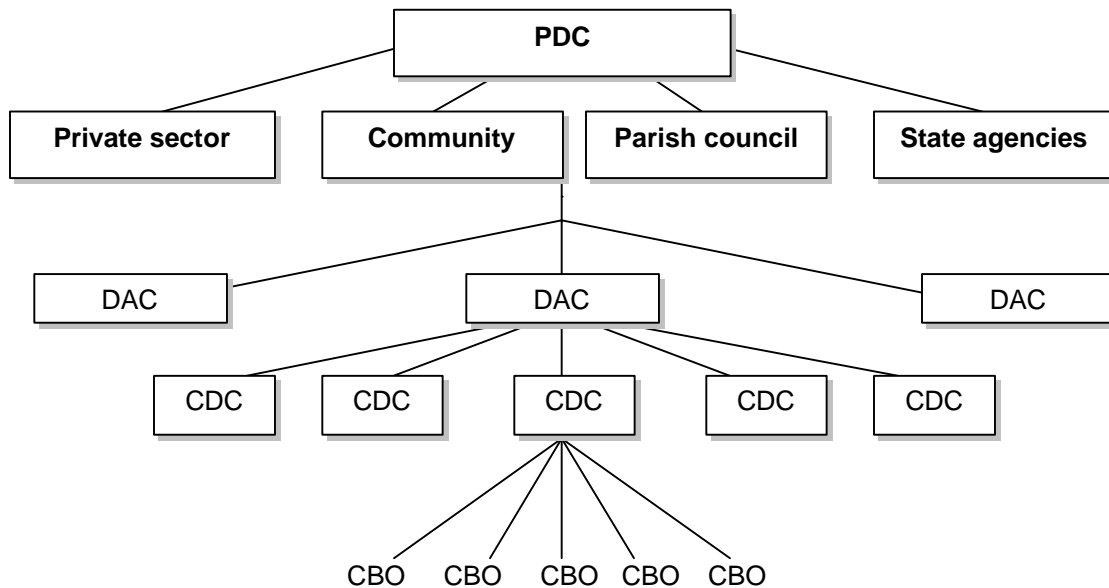
- The importance of using a constitution to guide elections and terms of office
- The accountability issue in elections and the management of funds
- The issue of succession leaderships and mentoring of new younger individuals
- The need select/elect officers with the relevant skills e.g. accounting for treasurer (suggest use treasurers committee and minutes should record finances)
- SDC has information to guide formation of groups etc. including constitution preparation
- The need for committees/groups need to train new leaders
- The need to put in constitution, the number of meeting that need to be attended/missed to remain as member.

- The need to bring sub-ordinates to workshops/meeting for them to gain experience.

**5. Relationship between LWMCs and Other Stakeholders –Trevor Spence**

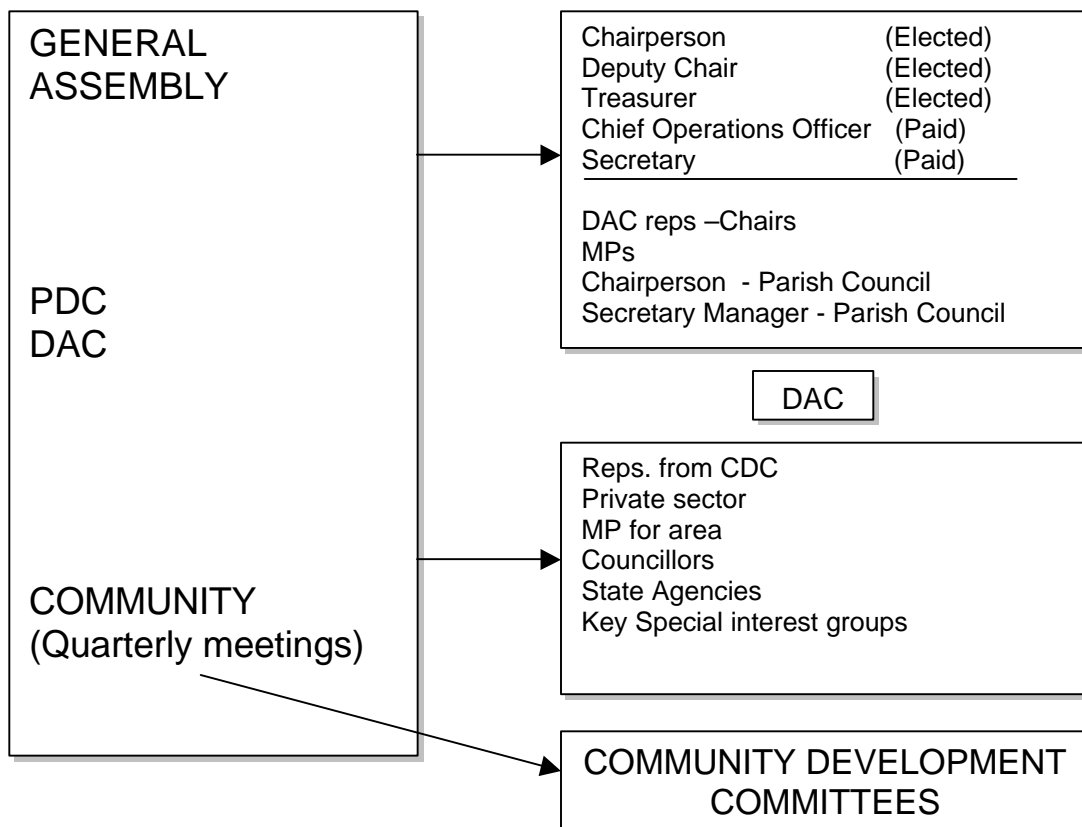
Mr. Spence invited **Mr. Cradwick “Ralph” Falloon** to make a presentation on the various relationships between local management groups and other stakeholders such as Parish Development Committees(PDCs), Development Area Committees (DACs) and Community Development Committees (CDCs).

Mr Falloon explained the linkages between the various groups with the assistance of the diagrams below.

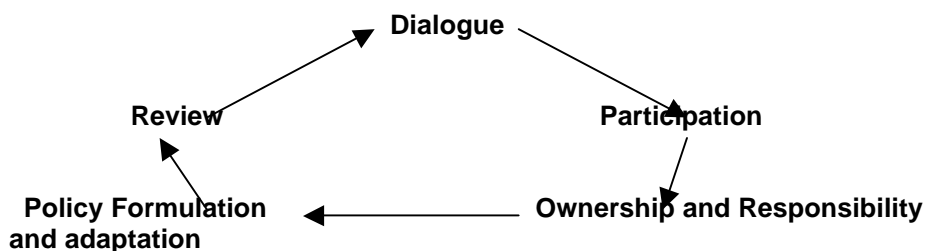




**PDC Executive (monthly meetings)**



Mr. Falloon made the point that the process of local participation was cyclical and not linear. The elements of the process are in the diagram below.



**6. Summary, Next Steps**

Participants were asked to:

- Make General Observations & Comments
- Identify the most important information gained from the workshop
- Identify what follow up action they would take following the workshop.

It was the general consensus that the workshop has been a success and had served to further the participants understanding of the various local management activities underway and/or planned, the role of the various resource agencies and the R2RW project. It was felt that the

workshop also served to provide useful tools for the efficient formatting and management of these groups.

The workshop adjourned at 3:30pm.

## R2RW Media Activities

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Between the Months of January and February the Ridge to Reef Watershed Project received coverage in the media in the following ways.

Date and Time: Friday January 31, 2003,  
7:20 a.m. – 7:30 p.m.  
Program Power 106: Independent Talk  
Interviewee: Leo Douglas

Date: Saturday February 1, 2003  
Paper: Western Mirror  
Title: World Wetlands Day observed in  
Montego Bay

Date and Time: Thursday February 6, 2003,  
6:30p.m. – 6:40 p.m.  
Program: RJR Radio Beyond the headlines  
Interviewee: Leo Douglas

Date: Thursday February 6, 2003  
Paper: The Daily Gleaner  
Photo + Caption of Mark Nolan (R2RW  
COP) with Dr. Paul Robertson (Min of  
Development)

Date: Friday February 7, 2003  
Paper: The Daily Gleaner  
Topic: Projects to Improve Montego Bay  
Wetlands

Dated: Saturday February 8, 2003  
Paper: Jamaica Observer  
Title: Report recommends incentives for  
watershed management.

Date & Time: Sunday February 9, 2003,  
12:30p.m. – 1:15 p.m.  
Program: Hot 102 Financially Speaking  
Interviewee: Trevor Spence and Thera  
Edwards

Dated: Wednesday February 12, 2003  
Paper: Jamaica Observer  
Photo + Caption of Mark Nolan (R2RW  
COP) with Carol Guntley-Brady and Franklin  
McDonald (NEPA CEO)

Date: Saturday February 15, 2003  
Paper: The Daily Gleaner

Title: Day Out Bird Watching In Montego  
Bay

Date: Saturday February 22, 2003  
Paper: The Daily Gleaner  
Title: Golden Reflections (World Wetlands  
Day)

Date & Time: Sunday March 23, 2003, 12:30  
– 1:15 p.m.  
Program: KLAS FM 89 Financially Speaking  
Interviewee: Col. Wallace Sterling, Leo  
Douglas & Karen McDonald-Gayle

Date and Time: Thursday, March 27, 2003  
Paper: The Star  
Program: Cabinet Approves AGD  
report/International year of Fresh  
Water/Moore Water system to be Upgraded

Dated: Thursday March 27, 2003  
Paper: The Daily Gleaner  
Title: Government Approves AGD report,  
International Year of Fresh Water Moore  
Town Water to be upgraded

Date: Monday March 31, 2003  
Paper: Jamaica Observer  
Topic: The Forestry Department  
Celebrating 65 years

Date and Time: Monday March 31, 2003,  
6:20 a.m. – 6:30 p.m.  
Program: Power 106, Independent Talk,  
Ronie Thwaites  
Interviewee: Mark Nolan

Date and Time: Tuesday, April 1, 2003  
Paper: The Daily Gleaner  
Topic: Rivers run low but residents fight the  
heat

Dated: Friday April 4, 2003  
Topic: Launch Of Moore Town Water  
Improvement Project  
Paper: The Weekend Observer

Photo + Caption of Mark Nolan (R2RW COP) with Minister Donald Rodd, Col. Wallace Sterling (Maroon Chief), Minister Simpson Miller

Date and Time: Sunday April 12, 2003  
Program: JIS Radio Rio Grande Village Craft Expo (Moore Town) and R2RW in the RGW  
Interviewee: Leo Douglas

Date and Time: Tuesday April 22, 2003, 5 p.m. – 5:30 p.m.  
Program: Power 106Leng and Co. Show  
Interviewee: Leo Douglas

Date: Tuesday April 22, 2003  
Program: Hot 102 FM with Marline Stephenson  
Interviewee: Mark Nolan  
Re: Green Village Program Launch

Date: April 22, 2003  
Paper: Jamaica Observer  
Title: Birds Of Feather  
Re: Earth Day visit to Rocklands Bird Sanctuary (with Ambassador Sue Cobb)

Date: Thursday April 24, 2003  
Paper: The Daily Observer  
Title: Green Village programme launched  
Reporter: Stacy-Ann Gabbidon

Date: April 24, 2003  
Paper: The Daily Gleaner: The Cornwall Front Page  
Re: Green Boom Out West/Watersheds to benefit from US \$6m enviro programmes

Date: April 25, 2003  
On-Line Paper: News/www.Jamaica-gleaner.com  
Re: US Ambassador to Jamaica, Sue M. Cobb and Mark Nolan Chief of Party to R2RW...

Date: April 28, 2003  
Paper: The Gleaner  
Re: Watershed Project Praised

Date: April 28, 2003  
On-Line Paper: Go-Local Jamaica (The Gleaner On Line)  
Re: "Save the Birds, Save the Forests, Save the Trees"

Date: May 11, 2003  
Paper: The Daily Observer  
Re: Celebrating Earth Day

Date: May 30, 2003  
Program: Cliff Hughs  
Interviewee; Hugh Graham  
Re: Emancipation Launch of "It Haffi Legal" Public Awareness Campaign

Date: June 4, 2003  
Program: Love Radio  
Interviewee: Leo Douglas  
Re: Emancipation Launch of "It Haffi Legal" Public Awareness Campaign

Date: Thursday, June 5, 2003  
Paper: The Observer: National Environmental Awareness Week Supplement  
Re: Water, Sanitation and the R2RW Project

Date: June 11, 2003  
Program: Independent Talk with Ronie Thwaites  
Interviewee: Leo Douglas  
Re: Wetlands Conservation Training Workshops and R2RW

Date: June 12, 2003  
Program: Drive Time Live with Helene Coley and Elaine Wint  
Interviewee: Leo Douglas  
Re: Wetlands Conservation Training Workshops and R2RW

Date: June 13, 2003  
Program: Hot 102 with Barrington Flemming  
Interviewee: Leo Douglas  
Re: Wetlands Conservation Training Workshops and R2RW

Date: July 1 – 15, 2003  
Program: Hot 102 and Power 106  
Activity: Approximately 45 GRWMC Youth and Environment Conference pre-conference media promos giving the date, venue, objectives and major sponsors across these two media houses.

Date: July 14, 2003  
Program: "My place" with host Tony Young on KLAS FM 89  
Interviewee: Leo Douglas

Re: A one-hour pre GRWMC Youth and the Environment Conference interview

Date: July 15, 2003

Program: Power 106 Laing and Company with Tony Laing & Durvan Malcolm

Activity: Live outside broadcasts between 2:30 to 5:00pm

Re: R2RW, GRWMC and the GRWMC Youth and the Environment Conference

Interviewees: Acting Chief of Party Leo Douglas, Thera Edwards (Manager, Sustainable Watersheds Branch/NEPA), Onyige Chigozilli (Public Education Branch./NEPA) Karen McDonald Gayle (Office of the Environment /USAID) , Barrington Taylor (Conservation Officer/NEPA), Lebert Dennis (Catadupa Community and GRWMC Compliance and Enforcement Task Force), Anthonio Buddington (President of the MBCC Ecology Club and R2RW Youth Conference Summer Intern) among others.

Date: July 15, 2003

Program: Hot 102 with Marline Stephenson

Activity: Live outside broadcasts 2:30 to 5:00pm

Re: R2RW, GRWMC and the GRWMC Youth and the Environment Conference

Interviewees: Acting Chief of Party Leo Douglas, Thera Edwards (Manager, Sustainable Watersheds Branch/NEPA), Onyige Chigozilli (Public Education Branch./NEPA) Karen McDonald Gayle (Office of the Environment /USAID) , Barrington Taylor (Conservation Officer/NEPA), Lebert Dennis (Catadupa Community and GRWMC Compliance and Enforcement Task Force), Anthonio Buddington (President of the MBCC Ecology Club and R2RW Youth Conference Summer Intern) among others.

Date: Tuesday July 15, 2003

Program: TVJa. Prime Time News

Activity: GRWMC Youth and Environment Conference opening ceremony

Date: Wednesday July 16, 2003

Program: CVM TV morning-time news

Activity: GRWMC Youth and Environment Conference opening ceremony

Date: July 17, 2003

Paper: Daily Gleaner,

Re: Caption of Participants viewing Exhibits at GRWMC Youth and Environment Conference.

Date: Saturday, July 19, 2003

Paper: The Daily Observer/Western Bureau

Re: Great River Youth Get Environment Conscious

Date: Saturday, July 19, 2003

Paper: The Daily Observer/Western Bureau

Re: Schools to look at organic farming  
Reporter: Erica James-King

Date: Wednesday July 23, 2003

Program: Local Cable – Mobay City Station (channel 10)

Activity: GRWMC Youth and Environment Conference

Date: July 23, 2003

Paper: The Daily Gleaner

Re: Participation, Public awareness and Public Awareness and Public Relations Specialist

Date: July 25, 2003

Paper: The Gleaner

Re: Ja Rivers at risk of pollution  
Reporter: Martin Henry

Date: July 2003

Paper: The Agriculturalist

Re: It Nuh Legal Posters

Date: July 2003

Media: The Agriculturalist

Re: Ridge to Reef Project Protecting Portland's Watersheds

Date: August 8, 2003

Program: Hot 102

Interviewee: Leo Douglas

Re: R2RW activities

Date: August 13, 2003

Program: Hot 102 interview with Barrington Flemming

Interviewee: Leo Douglas

Re: GRWMC Youth and Environment Conference

Date: Thursday, September 16, 2003  
Paper: The Gleaner  
Re: Photo and caption of Noel Monteith  
Minister of State in the Ministry of Education

presenting Thera Edwards with framed  
certificate at GRWMC Youth and  
Environment Conference.

## 2003 Grant-Funded Activities in the Rio Grande and Great River Watershed

Organization	Title	Purpose	Amount
<b>Grant Applications for the Great River Watershed submitted to the Ridge to Reef Watershed Project - Approved Grants</b>			
1. Retrieve All Age School	Retrieve All Age School Water Harvesting and Sanitation Project	To reduce dependency on NWC and decrease effluents entering Great River & increase public awareness of wetland technology	852,785.68
2. Pisgah All Age School Parent Teachers Association	Sanitation and Water Harvesting Project at the Pisgah All Age School	To improve sanitary facilities and improve water collection and storage	885,314.32
3. Mafoota Citizen's Assoc.	Mafoota Car Wash & Laundry Project	To Construct a community car wash & laundry facility adjacent to the existing community center to provide an alternative to existing practices that are polluting the water source	786,225
4. Content Progressive Youth Club	Content Progressive Water Harvesting and Sanitation Project	Harvest water from the roof and build bath rooms and changing rooms on the community centre using constructed wetlands technology	703,276
5. Hermitage Honey Ltd.	Hermitage Honey Project	To increase the number of bee colonies dramatically from 25 to 176 and improve livelihoods through beekeeping and honey production.	716,250
6. Rushea Farmers Group	Rushea Hot Pepper Production Project	To increase scotch Bonnet pepper production for the export market and provide sustainable livelihood for 22 farmers on 13 acres	888,000
7. Cedar Grove Farmers Group	Cedar Grove Hot Pepper Production Project	To increase scotch bonnet pepper production for export market through environmentally friendly irrigation	615,000
<b>Grant Applications for the Rio Grande Watershed submitted to the Ridge to Reef Watershed Project - Approved Grants</b>			
1. Mill Bank Past Students Association	Mill Bank Past Students Association Community Sanitation Project	To improve sewage disposal and provide toilet facilities using constructed wetlands technology with 15 households in Millbank	714,000
2. Moore Town Maroon Council	Moore Town Water Supply Improvement Project	To increase the volume and reliability of water supplied to the community, by running a new, independent distribution line from spring to Moore Town	805,145
3. Rock Hall Community Based Organization	Rock Hall Reforestation & Crop Production Project	Through Agroforestry and land husbandry, private lands will be reforested, soil erosion minimized, and economic livelihood will be enhanced.	801,202

Organization	Title	Purpose	Amount
4. Coopers Hill Community Development Organization	Coopers Hill Soil Conservation and Agro Forest Project	To Improve production and productivity of the farmers and conserve soil resources and protect the watershed in the Rio Grande	808,945
5. Industry CBO	Industry Soil Conservation & Agro Forest Project	Through agroforestry, land husbandry private lands will be reforested, soil erosion will be minimized and economic livelihood of residents will be enhanced	811,367
6. Comfort Castle CDC	Comfort Castle upgrading water supply Project	To upgrade the existing entombment & installation of new distribution line from spring source to main road	900,000
7. Cornwall Barracks Community Development Association	Cornwall Barracks CDC Water Supply Project	To construct new entombment and install new distribution line from spring to existing water main	900,000
8. CASE	Integrated Waste Management for Utilization on Crop & Livestock Demonstration Farm Plant	To expand demonstration plots of sustainable agricultural practices on the CASE Tutorial Farm. The project will establish a hydroponics, spice and ornamental fish production unit to work utilizing the treated effluent from the existing waste treatment for the livestock. Simulation of household sanitation solution installed in Millbank to acquire local performance data, and design criteria	788,700
9. JCDT	Community Education Program for Sustainable Watershed Management in the Rio Grande Watershed	To develop and implement a Community Education Program for Sustainable Watershed Management in ten communities of the Rio Grande Watershed adjacent to the Blue and John Crow Mountains National Park (see executive summary on following page	1,657,150

## **JCDT Proposal for a Community Education Program: A Public Awareness Program in the Rio Grande Watershed**

### ***Executive Summary***

The Project proposed in this document is titled Community Education Program: A Public Awareness Program in the Rio Grande Watershed. The goal of the project is to develop and implement a Community Education Program for Sustainable Watershed Management in ten communities of the Rio Grande Watershed adjacent to the Blue and John Crow Mountains National Park. The Jamaica Conservation and Development Trust (JCDT) manages the National Park under delegation from the National Environment and Planning Agency (NEPA) and in collaboration with both NEPA and the Forestry Department. The upper Rio Grande Valley is an important buffer zone for the Park and is one of the administrative zones of the Park with a Ranger Station at Millbank. Education is a component of Park management, and the JCDT sees this project as a partnership with the Ridge to Reef Watershed Project (R2RW) that will enhance, and increase the sustainability of the work of both the National Park and R2RW.

The Project has been developed in close collaboration with the R2RW project team and JCDT staff have attended several of the meetings and workshops organized by R2RW. In addition, the



JCDT is an active member of the Integrated Watershed Management Council and its Public Education Sub-Committee. The Project seeks to build on the R2RW activities by increasing “on-the-ground” or “field” activities in ten communities within the Rio Grande watershed.

The objectives of the Project are to:

- Engender Stewardship of natural resources by communities in the ten targeted districts
- Enhance understanding, compliance and enforcement of Environmental Laws in the area
- Promote practices for sustainable livelihoods
- Improve Millbank Park Ranger Station to enhance sustainability
- Document Lessons Learned to share with others

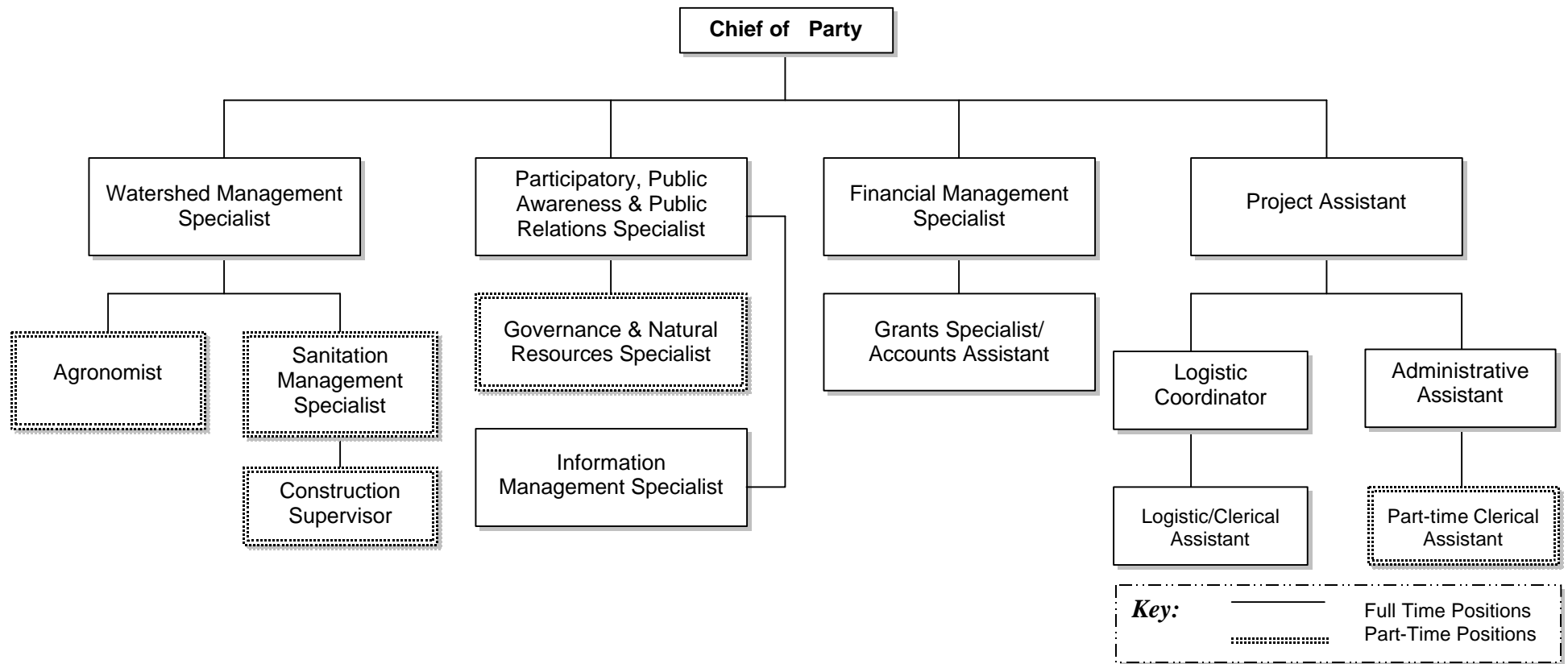
The activities to be implemented in order to achieve these objectives are described in detail in section 3.3 – Program Description and section 9.0 – Work Plan, and include:

- Community meetings and Training
- Facilitation of community organized events that promote sustainable watershed management practices e.g. tree planting
- Involvement of this corps of community resource persons/stewards in the Park’s watershed management activities e.g. water quality monitoring
- Identification of “trainee Rangers” who will be employed part-time in activities such as nursery establishment, reforestation and under-studying Park Rangers.
- Park Rangers patrol Forest Reserve/Park and disseminate public education materials
- Increased opportunities for community members to generate income through sale of craft through Holywell Gift Shop and marketing of eco-tourism in the area

Deliverables are listed in section 8.0 and include training of at least ten community resource persons and two “trainee” Rangers, dissemination of public education materials within the ten targeted communities, community persons benefiting from sustainable livelihood activities.

JCDT’s Executive Director, Mrs. Susan Otuokon will provide project oversight and the project will be coordinated by a contractor – Mrs. Linette Wilks. Mrs. Wilks and Park Rangers employed by the JCDT will implement the project activities. Monthly reports will be prepared and sent to R2RW and a consultant will be contracted to evaluate the project and document the lessons learned for sharing with others.

### Staffing Organogram for R2RW



September 2003

**TAWP Progress**

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Progress - Third Annual Work Plan  
October 1, 2002 to September 30, 2003

ID	Task Name													Oct
		Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	
1	<b>3 Sustainable Environmental Practices in the Great River Watershed</b>													87
2	<b>3.1 Development of the Great River Watershed Management Committee</b>													89
3	3.1.1 Development of role, mandate and programs of the GRWMC													98%
4	3.1.1.1 Host seminar of the GRWMC to develop consensus and buy-in to Programs													100%
5	3.1.1.2 Develop MOUs: GRWMC - State Agencies to implement GRWMC Programs													100%
6	3.1.1.3 Develop GR Watershed Operations Plan and Strategy													96%
11	3.1.1.4 Participate and share lessons in WMC networking opportunities													100%
12	3.1.1.4.1 Plan WMC Networking Conferences													100%
15	3.1.1.4.2 Hold Two WMC Networking Conferences													100%
18	3.1.1.5 GRWMC Task Forces													100%
39	3.1.2 Management Activities of the GRWMC													96%
40	3.1.2.1 Regular Meetings of the GRWMC													100%
41	3.1.2.1.1 Quarterly meeting of GRWMC													100%
46	3.1.2.1.2 GRWMC Executive Committee													100%
51	3.1.2.2 Administer funds for travel reimbursement and communications													100%
64	3.1.2.3 Develop local secretariat skills and services													100%
65	3.1.2.3.1 Assess training Needs of WMC													100%
66	3.1.2.3.2 Provide training courses													100%
67	3.1.2.4 Increase participation of community reps in GRWMC & Task Forces													100%
72	3.1.2.5 Prioritize issues for "Special Studies"													75%
73	3.1.3 Registration of the GRWMC													52%
74	3.1.3.1 Examine the options for GRWMC incorporation and registration													100%

Project: Third AWP Date: Tue 11/11/03	Critical		Task Progress		Summary	
	Critical Progress		Milestone		*Rolled Up Task	
	Task		Summary Progress		*Rolled Up Task Progress	

Progress - Third Annual Work Plan  
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ID	Task Name	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct
75	3.1.3.2 Submit application for WMC certification from the NIWMC									40%				
76	3.1.3.3 Initiate legal registration									25%				
77	3.1.4 GRWMC Managed Program Initiatives													92
78	3.1.4.1 Implement the Community Stewardship Certification Program													10
79	3.1.4.1.1 GRWMC approval of criteria for program design													100%
80	3.1.4.1.2 Launch Program													100%
81	3.1.4.1.3 Program Implementation and promotion													100
82	3.1.4.1.4 Issue program update for Earth Day													100%
83	3.1.4.1.5 Issue prizes at National Wood and Water Day													100%
84	3.1.4.1.6 Erect Signs													100
85	3.1.4.3 Capacity building Training Activities													79%
86	3.1.4.3.1 Stewardship Training													100%
87	3.1.4.3.2 Project Management													0%
88	3.1.4.3.3 Project finance													0%
89	3.1.4.3.4 Develop lobbying and advocacy curriculum													50%
90	<b>3.2 Production and Marketing in the Great River Watershed</b>													88
91	3.2.1 Production and Marketing Task Force Initiatives													10
92	3.2.1.1 Expand Task Force to include more community reprs.													100
93	3.2.1.2 Delegate implementation responsibility to members of the task force.													100%
94	3.2.1.3 Development of Extension Materials on agricultural technologies.													10
99	3.2.1.4 Provide STTA to communities on agricultural development initiatives													100%
100	3.2.2 Nursery Development													67

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101	3.2.2.1 Determine seedling requirements for the GRW													100%
102	3.2.2.2 Finalize nursery development plan													75%
103	3.2.2.3 Procure materials and supplies													50%
104	3.2.2.4 Nursery operation and maintenance													50%
105	3.2.3 Improved Crop Varieties													10
106	3.2.3.1 Continue to multiply and distribute disease resistant banana suckers													100
107	3.2.3.2 Planting of new tree crop varieties													100%
110	3.2.3.3 Implementation and monitoring of hot pepper development projects													100
111	3.2.3.4 Support initiatives to promote organic farming potential													100
112	3.2.4 Livestock Improvement													98
113	3.2.4.1 Continue to implement and monitor Goat Management Project													100%
114	3.2.4.2 MOUs with mother farms on revolving scheme													50%
115	3.2.5 Market Development													46
116	3.2.5.1 Development of Montpellier Market													0
117	3.2.5.1.1 Develop and sign MOU with JAS and TPDCo													0%
118	3.2.5.1.2 Contract with STTA for concept design and plans													0%
119	3.2.5.1.3 Implementation of market development plan													0%
120	3.2.5.2 Develop strategy for marketing Great River Products													59%
121	3.2.5.2.1 Finalize strategy for marketing Great River products													100%
122	3.2.5.2.2 Develop logo for Great River Watershed													100%
123	3.2.5.2.3 Develop criteria for use of logo/stamp of approval													90%
124	3.2.5.2.4 Identify products for inclusion in marketing promotions													50%

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ID	Task Name													Oct			
		Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep				
125	3.2.5.2.5 Implement promotional campaign for GR																25%
126	3.2.6 Plant A Tree Campaign																10
127	3.2.6.1 Establish a Steering Committee for Plant A Tree Campaign																100%
128	3.2.6.2 Hire Consultant to implement program																100
129	3.2.6.2 Targeting of deforestation hot spots																100%
130	3.2.6.3 MOU with Forest Department to secure seedlings																100%
131	3.2.6.4 Planting and maintenance of seedlings																100%
132	<b>3.3 Water and Sanitation Activities in the Great River Watershed</b>																82
133	3.3.1 Water and Sanitation Task Force Initiatives																86%
134	3.3.1.1 Expand Task Force to include technical members and community reprs.																100%
135	3.3.1.2 Delegate implementation responsibility to members of the task force																100%
136	3.3.1.3 Establish distribution system for raw materials at affordable prices.																50%
137	3.3.2 Water & Wastewater intervention																87%
138	3.3.2.1 Complete 2nd Water Harvesting & Wastewater Treatment System at Pisgah																100%
139	3.3.2.2 Design and install village sanitation solution in Cambridge																40%
140	3.3.2.3 Design and implement other W&S interventions																100%
141	Installation of water harvesting and wastewater system at Content Community Center																100%
142	Installation of car wash/laundry at Mafoota (with wastewater disposal system)																100%
143	3.3.3 Solid Waste Management Interventions																32%
144	3.3.3.1 Solid waste project at Stone Henge – garbage collection and recycling																25%
145	3.3.3.2 Support the Marine Park in hosting a solid waste seminar																90%
146	3.3.3.3 Provide support to community solid waste management initiatives																100%

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October 1, 2002 to September 30, 2003

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		Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	
147	3.3.4 Water Quality Monitoring on the Great River													100
148	3.3.4.1 Continue to monitor results of water quality monitoring program													100%
149	3.3.4.2 Improve quality of data result reporting and dissemination													100%
150	3.3.4.3 Use water quality information to refine and promote W&S initiatives													100%
151	<b>3.4 Public Awareness in the Great River Watershed</b>													85
152	3.4.1 Support the Public Awareness Task Force													92
153	3.4.1.1 Design a logo for the GRWMC													100%
154	3.4.1.2 Develop a mascot for the GRW													0%
155	3.4.1.3 Promote use of the GRW video													100
156	3.4.1.4 Participate in fairs, expos and community environmental fora													100%
161	3.4.1.5 Organize workshop on information communication technologies (ICT)													50%
162	3.4.1.6 Organize exchange visits: upper and lower watershed residents													100%
163	3.4.2 W&S public awareness programs for the GRW													100
164	3.4.2.1 Develop consensus on a public awareness strategy for the GRW													100%
165	3.4.2.2 Develop instructional print materials (booklets and posters)													100%
166	3.4.2.3 Develop video of technologies being implemented through R2RW in W&S													100%
167	3.4.2.4 Promote community awareness being implemented through R2RW in W&S													100
168	3.4.2.5 Support and implement activities that emerging from the KAP workshop													100%
169	3.4.2.6 Sign MOU with relevant agencies on strategy (NWC, PHD, SSU, MBMP, etc.)													100%
170	3.4.2.7 Promote and launch program													100%
171	3.4.2.8 Monitor implementation of program													100%
172	3.4.3 Solid Waste Management Public Awareness programs for the GRW													99

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ID	Task Name	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct
173	3.4.3.1 Support NSWMA "Nice & Clean" campaign in the GRW								100%					
174	3.4.3.2 Develop program, and sign MOU among partners												88%	
175	3.4.3.3 Hire TA to design materials, billboards, jingle, etc											100%		
176	3.4.3.4 Launch program												100%	
177	3.4.3.5 Monitor implementation													100%
178	3.4.4 Production and Marketing Public Awareness programs for the GRW													50%
179	3.4.4.1 Identify technologies and messages to be promoted								50%					
180	3.4.4.2 Develop materials									50%				
181	3.4.4.3 Implement Programs													50%
182	3.4.5 Plant A Tree Program													11%
183	3.4.5.1 Hire TA for media production								20%					
184	3.4.5.2 Prepare and distribute press release									0%				
185	3.4.5.3 Launch Program Activities												0%	
186	3.4.5.4 Finalize proposal to EFJ to expand program													0%
187	<b>3.5 Gender Considerations</b>													93%
188	3.5.1 Work with GRWMC executive to consider gender equity in grant application review								60%					
189	3.5.2 Training to partners and communities to encourage gender equity principles													100%
190	3.5.3 Hold Task force meetings at venues and at times that enhance gender equity													70%
191	3.5.4 Monitor gender equity principles during grant life													100%
192	3.5.5 Provide annual gender report of project activities													100%
193	<b>Component 1A Benchmarks</b>													9/3
194	GRWMC and task forces functional & addressing priority issues in GRW													9/3

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Progress - Third Annual Work Plan  
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ID	Task Name													Sep	Oct	
		Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug				
195	Three projects implemented by the Prodn & Marketing Task Force														★	9/3
196	Three projects implemented by the Water & Sanitation Task Force														★	9/3
197	Community Stewardship certification program launched														★	9/3
198	Plant A Tree Program and public awareness campaign implemented														★	9/3
199	Three initiatives to enhance public awareness of priority issues implemented														★	9/3

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October 1, 2002 to September 30, 2003

ID	Task Name	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	
200	<b>4 Sustainable Environmental Practices in the Rio Grande Watershed</b>														73
201	<b>4.1 The Rio Grande Watershed Management Committee</b>														51
202	4.1.1 Development of the Rio Grande Watershed Management Committee														93
203	4.1.1.1 Development of role, mandate and programs of the RGWMC														
204	4.1.1.2 Establish Task Forces for the RGWMC														
205	4.1.1.2.1 Public Awareness Task Force														
227	4.1.1.3 Host seminar of the RGWMC to develop consensus and buy-in to Programs														
228	4.1.1.4 MOUs - RGWMC, State Agencies and Communities														
233	4.1.1.5 Monitor MOU with the Portland PDC														
238	4.1.1.6 Develop RG Watershed Management Plan and Strategy														0
239	4.1.1.6.1 Define contents of Plan														
240	4.1.1.6.2 TA to develop Plan														
241	4.1.1.6.3 Present plan at facilitated seminar														
242	4.1.1.6.4 Incorporate feedback and Publish Plan														
243	4.1.1.7 Establish and implement watershed health monitoring protocols														
244	4.1.1.7.1 Review documentation on watershed health protocols														
245	4.1.1.4.2 Prepare protocols for monitoring programs														
246	4.1.2 Management Activities of the RGWMC														99%
247	4.1.2.1 Administer funds for travel reimbursement and communications														100%
260	4.1.2.3 Develop local secretariat skills and services														
265	4.1.2.3 Prioritize issues for "Special Studies"														
266	4.1.3 Registration of the RGWMC														25%

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October 1, 2002 to September 30, 2003

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267	4.1.3.1 Submit application for WMC certification to the NIWMC														
268	4.1.3.2 Examine the options for RGWMC incorporation and registration														
269	4.1.3.3 Complete legal registration														
270	4.1.4 RGWMC managed Program Initiatives														
271	4.1.4.1 Implement the Community Stewardship Initiative														
272	4.1.4.2 Stewardship training initiatives														
273	4.1.4.2.1 Project financing														
274	4.1.4.2.2 Environmental Stewardship														
275	4.1.4.2.3 Project Management														
276	4.1.4.2.4 Development planning														
277	<b>4.2 Land and Conservation Activities</b>														
278	4.2.1 Establish RGWMC Land and Conservation Task Force														
279	4.2.1.1 Initial meeting of Land and Conservation Task Force														
280	4.2.1.2 Prioritize agricultural interventions														
281	4.2.1.3 Design intervention activities with appropriate partners														
282	4.2.2 Improved Crop Varieties														
283	4.2.2.1 Continue to multiply and distribute disease resistant banana suckers														
284	4.2.2.2 Planting of new tree crop varieties														
285	4.2.2.3 Investigate options for nursery development														
286	4.2.2.4 Support initiatives to develop organic farming potential														
287	4.2.3 Livestock Improvement														
288	4.2.3.1 Investigate feasibility of Goat Management Project														

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289	4.2.3.2 Follow up livestock development opportunities									100%				
290	4.2.4 Enterprise Development													14%
291	4.2.4.1 Assessment of agro-processing opportunities									25%				
292	4.2.4.2 Foster and promote eco-tourism initiatives													0%
293	<b>4.3 Water and Sanitation Activities</b>													
294	4.3.1 Water and Sanitation Task Force									100%				
298	4.3.2 Water & Wastewater interventions													87
299	4.3.2.1 Implement Water Harvesting and sanitation project in Belleview													15%
300	4.3.2.2 Sanitation project in Millbank									100%				
301	4.3.2.3 Design, develop and implement other water supply projects													10
302	Moore Town Water Supply project									100%				
303	Windsor													100
304	Comfort Castle													100
305	Cornwall Barracks													100
306	4.3.3 Solid Waste interventions													45%
309	4.3.4 Water Quality Monitoring													76%
317	<b>4.4 Public Awareness Activities in the RGW</b>													62
318	4.4.1 Public Awareness Working Group													62
319	4.4.1.1 Participate in local fairs and Exhibits									100%				
320	4.4.1.2 Training in community facilitation													50%
321	4.4.1.3 Training in writing effective news releases									100%				
322	4.4.1.4 Training in video production													50%

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323	4.4.1.5 Training in the application of media in lobbying and advocacy									0%				
324	4.4.1.6 Design activities emerging from the KAP workshop									50%				
325	4.4.1.7 Distribute water and sanitation materials to support community activities													100
326	<b>4.5 Gender Considerations in the Rio Grande Watershed</b>													63
327	4.5.1 Conduct "gender & the environment" training with RGWMC									100%				
328	4.5.2 Incorporate gender checklist into review of grant applications									50%				
329	4.5.3 Hold Task Force Meetings at venues and at times that enhance gender equity									70%				
330	4.5.4 Support additional training to enhance awareness of gender principles									0%				
331	4.5.5 Provide annual gender report of Project activities and accomplishments									100%				
332	<b>Component 1B Benchmarks</b>													★ 9/3
333	Watershed monitoring protocols (incl water quality) established and implemented													★ 9/3
334	Two workshops held to develop secretarial skills of key members of RGWMC & TFs													★ 9/3
335	RGW Management Plan & Strategy developed													★ 9/3
336	Three projects related to land & conservation implemented													★ 9/3
337	Three Water harvesting and sanitation projects completed													★ 9/3
338	Three public awareness training sessions completed													★ 9/3
339	One gender & the environment workshop held													★ 9/3

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340	<b>5 Enhancing Compliance and Enforcement</b>													87
341	<b>5.1 Compliance and Enforcement - Nationally</b>													85
342	5.1.1 Support National Initiatives to Improve C&E													91
343	5.1.1.1 Sensitization program for judges and other court personnel													100%
344	5.1.1.1.1 Meeting with Chief Justice													100%
345	5.1.1.1.2 Implement Sensitization Initiatives													100%
346	5.1.1.2 Complete Training of Trainers Activity with NEPA													100%
347	5.1.1.3 Complete the preparation and distribution of the pocketsize field-guide													100
348	5.1.1.4 Refining and implement training programs in C&E													50%
349	5.1.2 Enhanced Policy and Legislation for Watershed Management													91
350	5.1.2.1 Finalize review of Watershed Policy, and Watershed Program													90%
351	5.1.2.2 Undertake Workshop to complete process													100%
352	5.1.2.3 Support NEPA in resubmission of Green Paper													75%
353	5.1.2.4 Complete review of LWMCs, and implement recommendations													100%
354	5.1.2.5 Commence activities to review Watershed Protection Act													100
355	5.1.3 Private sector incentives in Watershed Management													59
356	5.1.3.1 Finalize Review of private sector incentives for WM													100%
357	5.1.3.1.1 Private sector incentives study Presentation - National													100%
358	5.1.3.1.2 Private sector incentives study Presentation - Montego Bay													100%
359	5.1.3.1.3 Private sector incentives study Presentation - Port Antonio													100%
360	5.1.3.1.4 Final Report (with feedback)													100%
361	5.1.3.1.5 Undertake National Workshop to disseminate findings													100%

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362	5.1.3.2 Support the implementation of incentives for Watershed Management									50%				
363	5.1.4 Enhanced Public Awareness of Compliance and Enforcement													82
368	<b>5.2 Compliance and Enforcement in the Great River Watershed (GRW)</b>													91
369	5.2.1 Support Governance Mechanisms for enhanced C&E in the GRW													10
370	5.2.1.1 Technical, training and secretarial support to the C&E Task Force													100%
375	5.2.1.2 Support NEPA and SDC to enhance governance mechanisms in C&E													100
376	5.2.1.3 Review the declaration of the GRW area as a Development area													100
377	5.2.2 Capacity development for organizations involved in C&E in the GRW													97
378	5.2.2.1 Establish database and coordination plan for C&E in the GRW													100%
379	5.2.2.2 Provide support to prioritized critical list of equipment													100%
380	5.2.2.3 Training programs for C&E Officers in the GRW													50%
381	5.2.2.4 Training programs for Community Groups in C&E Issues													50
385	5.2.3 Implement priority activities of the C&E Task Force of the GRW													91
386	5.2.3.1 Develop and implement strategy to improve C&E in solid waste mgmt.													100
387	5.2.3.2 Develop and implement strategy to mitigate deforestation													100
388	5.2.3.3 Implement Communities compliance and enforcement activities													100
389	5.2.3.4 Implement priority incentives for Private Sector investment in WM													50%
390	5.2.3.5 Work with CBOs to develop and implement projects using R2RW grants													100
391	5.2.3.6 Identify and design special studies on C&E Issues in the GRW													100%
394	5.2.4 Develop and Implement lobbying and advocacy in the GRW													79
395	5.2.4.1 Disseminate popular materials for C&E													80%
396	5.2.4.2 Encourage community level stewardship programs e.g. Junior Rangers													100

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397	5.2.4.3 Develop and implement lobbying and advocacy activities									50%				
398	<b>5.3 C&amp;E in Portland, with emphasis on the Rio Grande Watershed (RGW)</b>													83
399	5.3.1 Support Governance Mechanisms for enhanced C&E in Portland & RGW													100%
406	5.3.2 Capacity development for organizations and Groups involve in C&E in Portland													71
407	5.3.2.1 Establish database and coordination plan for C&E in Portland													100%
408	5.3.2.2 Provide support to prioritized critical list of equipment													50%
409	5.3.2.3 Implement training programs for C&E Officers in Portland													30%
410	5.3.2.4 Implement training of Community Groups in C&E Issues													0
414	5.3.3 Implement priority activities of the Portland C&E Task Force													81
415	5.3.3.1 Develop and implement process for monitoring of NR Extraction													100
416	5.3.3.2 Develop and implement strategy to mitigate deforestation													100
417	5.3.3.3 Develop and implement strategies to decrease soil erosion													100
418	5.3.3.4 Develop and implement strategies to eliminate poisoning of rivers													100
419	5.3.3.5 Develop and implement strategy to improve C&E in solid waste mgmt.													10%
420	5.3.3.6 Implement priority incentives to support Private Sector investment in WM													50%
421	5.3.3.7 Identify and design special studies on C&E issues													100
422	5.3.4 Develop and implement lobbying and advocacy in the RGW													10
423	5.3.4.1 Disseminate popular materials for C&E													100
424	5.3.4.2 Encourage community level stewardship programs e.g. Junior Rangers													100
425	5.3.4.3 Develop and implement lobbying and advocacy activities													100
426	<b>Component 2 Benchmarks</b>													★ 9/3
427	Activities to sensitize judges & court personnel developed and being implemented													★ 9/3

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ID	Task Name													Sep	Oct	
		Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug				
428	Training of Trainers activity completed, and watershed level training undertaken														★	9/3
429	Pocketsize field guide finalized, distributed and in active usage														★	9/3
430	Green paper on watershed policy reviewed and re-submitted														★	9/3
431	Popular materials on envir. policies and regulations designed & disseminated														★	9/3
432	C & E activities implemented by WMCs and Task Forces in GRW and RGW														★	9/3

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433	<b>6 Institutional Strengthening and Capacity Building for Watershed Management</b>													87
434	<b>6.1 Capacity Building of the Sustainable Watersheds Branch of NEPA</b>													63
435	6.1.1 Strengthening the SWB/NEPA													48%
436	6.1.1.1 Facilitate Team Building and Strategic Planning exercise with SWB	100%												
437	6.1.1.2 Develop environmental monitoring protocols to monitor watershed health	75%												
438	6.1.1.3 Public Ed.Field Kits developed, produced and field tested													44%
439	6.1.1.3.1 Finalize design of new materials													70%
440	6.1.1.3.2 Produce materials with Carrying Kits													25%
441	6.1.1.3.3 Launch and distribute Kits													0%
442	6.1.1.4 Staff Retreat Days	100%												100%
443	Staff Retreat Day 1	100%												
444	Staff Retreat Day 2													100%
445	6.1.2 Tools for Sustainable Watershed Management													45%
446	6.1.2.1 Finalize specifications for remaining equipment needs													50%
447	6.1.2.2 Procure Equipment													0%
448	6.1.2.3 Train staff in equipment use	0%												
449	6.1.2.4 Upgrading of the SWB Watershed Database													0%
450	6.1.2.4.1 Improved physical data	0%												
451	6.1.2.4.2 Audience Assessment Survey data	0%												
452	6.1.2.4.3 Watershed Project database	0%												
453	6.1.3 Training of SWB Staff and Other Key WM Staff													58%
454	6.1.3.1 Site Assessments and Investigations	0%												

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455	6.1.3.2 Project development for WGOs									0%				
456	6.1.3.3 Establish watershed health monitoring protocols													
457	6.1.3.3.1 Review documentation on watershed health protocols													
458	6.1.3.3.2 Prepare protocols for monitoring programs													
459	6.1.3.4 Monitoring Watershed Health through Rapid Appraisals													
460	6.1.3.5 Water quality monitoring programs													
461	6.1.3.6 Public Education Outreach techniques													
462	6.1.4 Networking and Professional Development													100
463	6.1.4.1 Attend Seminars on Watershed Management													100
464	6.1.4.1.1 Attend International Seminar on Watershed Management													100
465	6.1.4.1.2 Attend Caribbean Water and Wastewater Conference													100
466	6.1.4.1.3 Attend Seminar on Watershed Management 3													100
467	6.1.4.1.4 Attend Seminar on Watershed Management 4													100
468	6.1.4.2 Monthly Lunch Hour Series with Presentation by WM Professionals													100
481	6.1.4.3 R2RW Mid Point Review													100
482	<b>6.2 Enhancing Coordination</b>													
483	6.2.1 National Integrated Watershed Management Council ( NIWMC)													88
484	6.2.1.1 Support SWB responsibilities to the NIWMC													100
485	6.2.1.2 Develop certification process for LWMCs													100
486	6.2.1.3 Develop consensus on priority interventions													75
487	6.2.1.4 Develop reporting mechanisms for NIWMC Reporting to Cabinet													30
492	6.2.1.5 Incorporate GOJ watershed priorities into GOJ corporate plans													50

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493	6.2.1.6 Continue to refine Watershed Projects Database													100%
494	6.2.2 Development of Watershed Management Committees													100%
495	6.2.2.1 Rationalize approach to establishment of WMCs													100%
496	6.2.2.2 Publish manual on how to establish WMCs													100%
497	6.2.2.3 Hold seminar on WMCs for SWB, FD and other organizations													100%
498	6.2.2.4 Hold First Jamaican WMC networking conference													100%
499	6.2.3 Mainstreaming Technologies													58
500	6.2.3.1 Incorporate constructed wetland technology into Building Code													0%
501	6.2.3.2 Encourage Min of Ed. to use constructed wetland technology													100%
502	6.2.3.3 Provision of STTA by W&S Task Force Member Agencies to communities													100
503	6.2.3.4 Professional development seminar with EHU and Building Inspectors													0%
504	6.2.3.5 Explore other promising technologies													60%
505	6.2.4 Special studies													100
506	6.2.4.1 Wide dissemination of special studies brochure													100%
507	6.2.4.2 Hold media event to announce availability of funds													100%
508	6.2.4.3 Commission special studies													100
509	<b>6.3 Strengthening National Public Awareness Activities</b>													96%
510	6.3.1 General Public Awareness Activities													94%
511	6.3.1.1 Produce R2RW Newsletter													93%
516	6.3.1.2 Promote and keep current R2RW Website													100%
520	6.3.1.3 Issue Press Releases on Current Project Activities													100
533	6.3.2 Enhance NEPA Public Awareness Programs													100%

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ID	Task Name													Oct				
		Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep					
534	6.3.2.1 Support NEPA follow-up activities from the KAP workshop																	
536	6.3.2.2 Support Public Education Committee of the NIWMC																	100%
539	6.3.3 Expositions																	100%
540	6.3.3.1 National Wood and Water Day																	100%
541	6.3.3.1 Earth Day																	100%
542	6.3.3.3 Environment Week																	100%
543	6.3.3.4 Denbigh																	100%
544	<b>6.4 Gender Activities at the National Level</b>																	57%
545	6.4.1 Conduct "gender & the environment" training with NEPA staff																	100%
546	6.4.2 Incorporate gender checklist reporting into NEPA reporting mechanisms																	50%
547	6.4.3 Revise Grant Fund application to include gender factors																	50%
548	6.4.4 Provide annual gender report of project activities and accomplishments																	100%
549	6.4.5 Support additional training to enhance gender mainstreaming within NEPA																	0%
550	6.4.6 With NEPA, host "Gender and Environment" symposium																	0%
551	<b>Component 3 Benchmarks</b>																	★ 9/3
552	Community stewardship program implemented																	★ 9/3
553	PubEd kit developed, produced & tested																	★ 9/3
554	Three training courses held																	★ 9/3
555	Two special studies commissioned																	★ 9/3
556	Four newsletters published																	★ 9/3

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557	<b>7 R2RW Program Management</b>													10
558	<b>7.1 Grant Management</b>													10
559	7.1.1 Screening grant applications for gender considerations													100%
572	7.1.2 Approval of Grant Applications by WMCs													100%
585	7.1.3 Incorporate MOUs in Grant Agreements													100%
598	7.1.4 Implement 10 grants													100
599	7.1.5 Close supervision of funds, compliance, and completion													100%
612	7.1.6 Regular program monitoring by WGOs WMCs and R2RW													100
625	7.1.7 Provide STTA to grant clusters													100
638	<b>7.2 Staffing</b>													100
639	7.2.1 Fill the WMS position													100%
640	7.2.2 More Aggressive use of STTA													100
653	7.2.3 Rationalize ASC Staffing Requirements													100%
654	<b>7.3 Project Management</b>													10
655	7.3.1 Update Contact Database													100%
668	7.3.2 Use text messaging to announce meetings over cell phones													100%
680	7.3.3 NEPA Coordination Meetings													100%
685	7.3.5 R2RW Team Meetings													100
698	7.3.5 Project Implementation Committee Meeting													100%
711	7.3.6 Interagency Steering Committee													100%
713	7.3.7 Monitor CWIP Close Out													100%
723	7.3.8 Conduct mid-term Assessment of R2RW													100%

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724	7.3.9 ASC Senior Management Team													10
777	<b>Project Management Benchmarks</b>													★ 9/3
778	STTA contracted to assist with grant cluster													★ 9/3
779	10 grants implemented													★ 9/3
780	Admin staffing requirements rationalized after CWIP closeout													★ 9/3
781	Eight Project Implementation Committee meetings held													★ 9/3

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