



ANNUAL REPORT
October 2003 to September 2004
and
8th SEMI ANNUAL REPORT
April 2004 to September 2004



Ridge to Reef Watershed Project

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

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Prepared for the:

Government of Jamaica
National Environment and Planning Agency

And the

United States Agency for International Development

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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. ARD Incorporated implements R2RW.

This document is intended to meet two contractual requirements of USAID. Firstly, the document is the 4th Annual Report for the period October 2003 to September 2004. Secondly, this document is the 8th Semi-Annual Report (SAR) for R2RW covering the period April 1, 2004 to September 30, 2004. 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 Fourth 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 October 2003 to September 2004.

Acronyms

AGM	Annual General Meeting
ARD	Associates in Rural Development
ASC	Administrative and Support Centre
C&E	Compliance and Enforcement
CANARI	Caribbean Natural Resources Institute
CASE	College of Agriculture, Science and Education
CBO	Community-Based Organization
CDC	Community Development Committee
CEO	Chief Executive Officer
CETF	Compliance and Enforcement Task Force
CLINs	Contract Line Item Numbers
COMAND	Community Action and Development
COP	Chief of Party
CRS	Compliance and Regional Services Branch (NEPA)
CWIP	Coastal Water Quality Improvement Project
CWIP 2	Coastal Water Quality Improvement Project – Phase 2
EAST	Environmental Action for Sustainable Tourism
EFJ	Environmental Foundation of Jamaica
EJASP	Eastern Jamaica Agricultural Services Project
ENACT	Environmental Action Program
FAWP	Fourth Annual Work Plan
FD	Forestry Department
GDSS	Garbage Disposal and Sanitation Services
GOJ	Government of Jamaica
GR	Great River
GRW	Great River Watershed
GRWMC	Great River Watershed Management Committee
ICF	Island Constabulary Force
IR	Intermediate Result
ISC	Inter-Agency Steering Committee
ISCF	Island Special Constabulary Force
JAS	Jamaica Agricultural Society
JCDT	Jamaica Conservation and Development Trust
JCF	Jamaica Constabulary Force
JET	Jamaica Environmental Trust
JIS	Jamaica Information Service
JSIF	Jamaica Social Investment Fund
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
LWMC	Local Watershed Management Committee
MBMP	Montego Bay Marine Park Trust
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
NGO	Non-Governmental Organization
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
OPDEM	Office of Disaster Preparedness and Emergency Management
P&MTF	Production and Marketing
PATF	Public Awareness Task Force
PATG	Port Antonio Theatre Group
PAWG	Public Awareness Working Group
PC	Parish Council
PCA	Pesticide Control Authority
PDC	Parish Development Committee
PEP	Portland Environment Protectors
PEPA	Portland Environment Protection Agency
PHD	Public Health Department
PIC	Project Implementation Committee
PIOJ	Planning Institute of Jamaica
PMP	Performance Monitoring Plan
PPPCD	Policy, Programs and Projects Coordination Division (NEPA)
R2RW	Ridge to Reef Watershed Project
RADA	Rural Agricultural Development Authority
RGW	Rio Grande Watershed
RGWMC	Rio Grande Watershed Management Committee
RPPU	Rural Physical Planning Unit
SAR	Semi-annual Report
SBA	Small Business Association
SDC	Social Development Commission
SEP	Schools Environment Program
SJPC	St. James Parish Council
SO2	Strategic Objective Number 2
SOW	Scope of Work
SSU	Sanitation Support Unit
STTA	Short-Term Technical Assistance
SWB	Sustainable Watersheds Branch (NEPA)
TAP	Targeted Appropriate Practice
TF	Task Force
TNC	The Nature Conservancy
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
WPM	Western Parks and Markets
WPA	Watershed Protection Act
WRA	Water Resources Authority
WSTF	Water and Sanitation Task Force
WW2BW	White Water to Blue Water

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1. Introduction

This document summarizes the accomplishments of the fourth year of the five-year Ridge to Reef Watershed Project (R2RW). The project consolidated its intervention impact through implementation of 4 anchor projects. Through these anchor projects and other core activities the full-time staff and long-term consultants and their partners continue to address multiple complex aspects of watershed management through comprehensive integration of activities. Partners included more than 10 Government of Jamaica (GOJ) agencies, many non-governmental organizations (NGOs), a host of community-based organizations (CBOs), two other USAID-funded projects, multiple divisions of the National Environment and Planning Agency (NEPA), and a number of active and concerned citizens and private sector organizations. It is anticipated that this level of integration will continue to the end of R2RW and that significant Project resources will be directed toward nurturing these relationships and strengthening partners.

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 began this year to reduce direct support of 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 prepare these entities to assume solid positions within an integrated, national network capable of sustainable watershed management.

Principal Project Components

The focus areas of the Project did not change during the 4th 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, private sector and civil society organizations to implement effective watershed management programs enhanced.

The first 2 sections of this report highlight achievements made by this project during the reporting period.

Sections 3 – 6 highlight progress on the three Project components, as well as cross-cutting themes addressed by the Project. Achievements during the reporting period are described relative to the full range of activities presented in the R2RW Fourth Annual Work Plan.

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 Fourth Annual Work Plan (FAWP).

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

Appendices 1 – 17 contain supporting documents that provide greater detail of activities and key references for readers.

Summary of Key Work Plan Achievements

R2RW has made numerous significant achievements during the reporting period. 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 exhibit leadership as a governance structure capable of uniting stakeholders around solutions to the difficult issues of watershed management under incrementally reduced support from R2RW
- ✍ R2RW, organizational partners and communities implemented multiple grants- and (otherwise-funded) community-based activities to support environmentally friendly agriculture, livestock, water harvesting, wastewater disposal, solid waste management, and marketing.
- ✍ Reduced fecal environmental pollution by completing two grant-funded, innovative water supply and wastewater disposal systems at large schools.
- ✍ Facilitated planting of 23,262 trees in the watershed through a multi-faceted Plant-A-Tree Campaign
- ✍ Presented awards to winners competing in the 1st Great River Green Village Program
- ✍ Supported popular public awareness through the “River Action with the Action Boyz” community theatre program which has been highly successful and well received in communities
- ✍ Implementation of two Anchor Projects: ‘Improved Production of Pineapples’ and ‘Cleaning and Greening of Cambridge’. The first Anchor Project has two main thrusts; namely, diversification of varieties including the reintroduction of the ‘Smooth Cayenne’ variety and proper cultural field practices. The second Anchor Project addresses aesthetic, environmental and public health issues to improve the town of Cambridge through development of coordination and governance mechanisms.
- ✍ Presented a Solid Waste Management Seminar in association with the Montego Bay Marine Park in May. The workshop developed action plans to address specific problems.

- ✍ 2nd Youth and the Environment Conference held in July. The conference met multiple objectives including the exchanges between watersheds as some participants were invited from the Rio Grande.
- ✍ 2nd Great River Green Village Program launched.
- ✍ Set up Pisgah and Retrieve constructed wetlands to collect data of how constructed wetlands perform under local conditions. Summer holiday hiatus allowed for collection of “steady state” data

Rio Grande Watershed (Component 1B)

- ✍ Three hundred and twenty seven (327) farmers benefited from 17 intensive training sessions as part of workshops and field days on various aspects of sustainable agriculture including: bio-fertilizers, farm planning, land husbandry, soil conservation, proper disposal of chemicals, fruit tree resuscitation and agroforestry as a cropping system.
- ✍ Strengthened the role of the Rio Grande Watershed Management Committee (RGWMC) and four task forces as leaders and coordinators of environmental improvement
- ✍ Commissioned a study with the UWI to develop a sediment budget for the Rio Grande WMU and St. Margaret’s Bay.
- ✍ Initiated the final group of grant-funded projects in water supply, water harvesting, wastewater management, agroforestry, and soil conservation
- ✍ Implementation of the Land Management Anchor Project seeks to tackle the land-based problems associated with farming in the vulnerable Rio Grande WMU. The Anchor Project directs its interventions at both the community and individual level. Technical and material inputs are provided to demonstration plots in key community locations and selected farms throughout the middle and upper watershed.
- ✍ Demonstrated use of drama in communicating environmental messages through 2 workshops and performances conducted by the Port Antonio Theatre Group in 2 watershed communities.
- ✍ Set up CASE constructed wetland system to collect data on performance of these systems under local conditions
- ✍ Planted 3300 Timber and 2500 fruit trees to reestablish vegetative cover and provide long-term income generation.
- ✍ Improved water supply to 2 communities through implementation of water supply grant projects
- ✍ Installed 2 new sanitation solutions at Coopers Hill Basic School and CASE
- ✍ Initiated a Water Quality Monitoring Project partnership with TNC, WRA, NEPA, UWI and WSTF.
- ✍ Established a Quarry Monitoring Committee to improve dialogue amongst stakeholders, operators and regulatory agencies as well as to provide better oversight of mines and quarries in Portland with emphasis on the Rio Grande WMU.

Component 2: Enhanced Compliance and Enforcement

- ✍ Promoted and focused an integrated set of posters, song, and music video to support the “It Haffi Legal” campaign to promote stewardship and community compliance with environmental regulations
- ✍ Led a second publication and distribution of the popular “A Pocket Guide to Environmental and Planning Laws of Jamaica” in cooperation with NEPA and the Canadian-funded ENACT Project
- ✍ Printed and distributed 2000 copies of 2004 NEPA calendar highlighting the compliance and enforcement posters
- ✍ Developed 4 courses on compliance and enforcement aimed at enforcement officers and community leaders with the Management Institute for National Development (MIND)
- ✍ Implemented a continuing series of symposia to sensitize Clerks and Deputy Clerks of the Courts from across Jamaica on the country’s environmental laws
- ✍ Produced a CD of the papers and presentations prepared for the Judicial Symposia and the environmental laws of Jamaica in cooperation with NEPA and the Canadian-funded ENACT Project
- ✍ Undertook a study to encourage better coordination among State agencies involved in the Rio Grande Watershed.
- ✍ Supported Compliance and Enforcement task forces in both targeted watersheds to address local issues such as sand mining in the Rio Grande
- ✍ Prepared a Compendium of Environmental Cases with the assistance of NEPA and law students of The Norman Manley Law School on internship with the project.

Component 3: Enhanced Capacity to Implement Effective Watershed Management Programs

Component 3 activities has evolved into a major transfer of knowledge strategy that has successfully enhanced the skills of key partners in watershed management.

- ✍ Conducted a retreat of the Sustainable Watersheds Branch in November 2003 to refine its Charter and build understanding and support for programs
- ✍ Supported the programs of the National Integrated Watershed Management Council by actively supporting its Working Groups and Secretariat. Sponsored and facilitated the 2nd retreat of the NIWMC May 7-8, 2004
- ✍ Conducted major Public Awareness events such as Wood and Water Day, Green Expo, Denbigh Agricultural Show, World Wetlands Day and World Water Day to highlight major environmental issues and solutions to the public.
- ✍ Five exchange visits between the target watersheds were held for the GRWMC AGM, World Wetlands Day and the Joint Portland Compliance & Enforcement and Public Awareness Task Force Workshop, Youth and the Environment Conference and Boundbrook visited Cambridge

- ✍ The final draft of the Watershed Policy was submitted to NEPA in November 2003 and to the Ministry of Land and Environment in February 2004.
- ✍ Developed and presented multiple training workshops on meeting management, fundraising, proposal writing and facilitation skills wetlands education, and grant management. The range of sessions is tabulated below:

Title of Training	Objectives of Training	Outcomes of Training
Meeting Management	Train WMC and task force Chairpersons, Secretaries and their assistants in meeting management and taking minutes	Three training courses held: 14 trained in RGW, Jan. 04 41 trained in GRW, Jan 04 38 trained in RGW, Sept. 04
Fundraising	Train representatives of community based organizations in fund raising ideas and techniques	Over 200 persons in the GRW, RGW and island wide trained in techniques for fundraising in their own organizations
Proposal Writing	Train representatives of NGOs, CBOs and local government in basic proposal writing	Over 200 persons in the GRW, RGW and island wide trained in the nuts and bolts of proposal writing
Facilitation Skills	Train representatives of State Agencies such as the SDC, and NEPA in methods and techniques of community facilitation	Eight 2-day courses held in Basic and Advanced Facilitation techniques and two Community Action Planning Workshops held with over 150 persons trained including 25 as trainers.

Project Management

- ✍ Expanded the technical team by 5 persons to include more field-based staff directly responsive to communities and focused “Anchor Projects”
- ✍ Continued to actively encourage cross-project coordination through regular team meetings, Project Implementation Committee meetings, CWIP/R2RW administrative meetings, and participating in regular NEPA Senior Management Team meetings
- ✍ Acted upon recommendations identified during a mid-term internal review of R2RW to improve Project performance and impact

Summary of Key Achievements Outside the 4th Annual Work Plan

During the reporting period, R2RW was regularly asked to support initiatives which emerged from identified needs of stakeholders, partners, or key clients. The major accomplishments during the reporting period which were not proposed in the FAWP included the following:

White Water to Blue Water Conference

R2RW supported the attendance of two individuals at the international White Water to Blue Water (WW2BW) Conference. The individuals: Thera Edwards, Manager, Sustainable Watershed Branch and Trevor Ramikie, coordinator, National Program of Action for the Protection of the Marine Environment from Land Based Sources of Pollution. WW2BW is an initiative aimed at

fostering healthy, well-managed and productive marine and coastal ecosystems that support stable and secure economies in coastal countries of the Wider Caribbean Region. It stimulates partnerships to promote integrated watershed and marine-based ecosystems management in support of sustainable development. The outcomes of WW2BW in the Caribbean is intended to serve as the blueprint for future programs on watershed and marine ecosystem-based management in Africa and the South Pacific, Karen Mc Donald Gayle of USAID presented a paper entitled "Public-Private partnership for integrated Watershed Management: 3 Jamaican case studies, which was partially based on the R2RW experience.

Environmental Challenge Program

A direct avenue for R2RW to reach national youth programs was established with the Jamaica 4-H Clubs as part of an "Environmental Challenge Program". The Program builds on the work of the Jamaica 4-H Clubs to increase environmental awareness and promote environmentally responsible projects. The projects include 'Trash to Cash' - making useful items out of material that would otherwise be regarded as waste - organic farming, and a national tree planting drive. The 4-H Environmental Challenge is intended to coordinate all environmental efforts by providing a framework and the resources for club members to educate themselves and their communities and to take an active role in solving local environmental problems.

The objective of this specific activity was to establish an exciting, credible, and sustained environmental program that will provide a framework within which young people will challenge themselves to take an active and educated role in environmental work and connect them with professionals in the field. It will also strengthen the core 4-H curriculum by encouraging and facilitating environmentally friendly projects already within R2RW's repertoire (e.g. organic farming, recycling) and expanding over time to more advanced projects such as hydroponics. The Project will be active in the Parishes where R2RW operates: St. James, Hanover, Westmoreland, St. Elizabeth and Portland. Specific objectives include:

- ✍ Registering at least ten teams per parish;
- ✍ Conducting five Parish Symposia and one National Symposium;
- ✍ Training twenty judges (four per parish);
- ✍ Printing and distributing 200 copies of a handbook;
- ✍ Establishing a relationship between young people and environmental organizations and professionals; and
- ✍ Facilitating coverage of the program on TV, radio, and in the print media.

The Challenge program has been successfully implemented in the 5 project parishes and a report prepared.

Proposal Preparation to Support NEPA SWB

R2RW provided STTA to SWB to support preparation of a proposal to fund a project "An Integrated Approach to Managing the Marine, Coastal and Watershed Resources of East Central Portland". This proposal was submitted to the GEF Secretariat for funding consideration as a demonstration project under the regional project Integrating Watersheds and Coastal Area Management for Small Island Developing States. The regional project and country demonstrations were approved in March 2004. It is anticipated that this project will extend and consolidate the work of R2RW and its partner projects CWIP and EAST in Portland in the

proposed Port Antonio Marine Park and Forest Corridor which includes sections of the Rio Grande and Driver's River WMUs.

Initiative to Reduce Child Poisoning in the GRW and RGW

Both WMCs will benefit from a R2RW grant to the Pesticides Control Authority (PCA) for "Reducing Child Poisoning in Great River and Rio Grande Watersheds". The activity is aimed at reducing poisoning among children aged 1-5 in the GRW and RGW through increased public awareness. The Project will be conducted between March 2004 and May 2005. It will involve increased awareness among parents and caregivers; Sensitizing children to the dangers of pesticides and household chemicals; and measurement of project effects through collecting and analyzing poison data on a quarterly basis.

Caribbean Environmental Forum and Exhibition

R2RW supported the attendance of Thera Edwards, Manager, Sustainable Watershed Branch to present a paper co-authored with Karen McDonald-Gayle Deputy Team Leader of the Office of Environment at USAID at the Caribbean Environmental Forum and Exhibition held in Port of Spain, Trinidad. The paper entitled "Community-based water resources management: Lessons from the Ridge to Reef Watershed Project", reviewed lessons gained from the R2RW experience with participatory approaches to watershed management.

Response to Hurricane Ivan

In response to Hurricane Ivan a community grant facility involving the programming of new funds was launched in September 2004. The grant facility was named the 'Hurricane Ivan Community Upgrading Program and allowed communities islandwide and in the project areas to access small grants of \$50,000 to deal with various aspects of post-storm rehabilitation. See Appendices 1 and 2.

The warning for and subsequent passage of Hurricane Ivan led to a break in the SDC Region 4 (Manchester, St. Elizabeth, and Clarendon) APM training. Subsequently this has allowed for the following observations and adjustments in the training program:

1. Reports from the Regions already trained, and from SDC Headquarters indicated that the training in Advanced Participation Methods (APM):
 - a) Provided the Staff of the SDC with the necessary skills to undertake better quality assessment of hurricane damage;
 - b) Equipped the Officers with the tools to prepare adequate reports;
 - c) Assisted the Community Development Officer, and the Community to build consensus around issues relating to the impact of the Hurricane;
 - d) Assisted in the preparation of Action Plans to deal with rehabilitation issues; and
 - e) Assisted communities in preparing projects that would lead to rehabilitation and relief from the effects of Hurricane Ivan.
2. The training that took place in Region 1 (Kingston, St. Andrew, and St. Thomas) since the passing of the Hurricane was modified to show how the consensus method could be an important instrument in assessing damage from the Hurricane, and the demonstration of the

Action Plan Method used a community that was damaged by the Hurricane to build an Hurricane Rehabilitation Project.

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 Fourth Annual Work Plan. The principle aspects of the vision and progress made during the reporting period in achieving that vision are presented on the following pages fewer than 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 FAWP	Achievements During Project Year 4
Improved Governance	
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 of meetings of WMCs and their Task Forces as demonstrated in minutes of meetings.
	Two WMCs and 8 Task Forces engaged representatives of State Agencies with communities to address priority local issues
	Developed, tested used for training an Operations Manual for establishing and implementing WMCs
	Conducted study to review the relationship of LWMCs to PDCs. Final report pending.
Local authorities are playing active role in watershed management.	Local officials of RADA, the Forestry Department, the NWC, the NSWMA and NEPA involved in design, decision-making, and implementing projects.
	Parish-level local government has become engaged in Project activities such as water supply provision in Portland and the Cleaning and Greening of Cambridge in St. James
	Quarry Monitoring Committee established in Portland.
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.	Three exchange visits between the target watersheds were held for the GRWMC AGM, World Wetlands Day and the Joint Portland Compliance & Enforcement and Public Awareness Task Force Workshop.
	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.
	1 st Green Village Awards Program promoted community stewardship and community pride in 12 communities of the GRW. 2 nd Green Village Program launched to maintain and build on the momentum gained during the first.
Improve the regulatory framework for watershed management to facilitate greater compliance and enforcement and an increase in the number of cases prosecuted.	Printing and distribution of 1000 additional copies of the “Pocket Guide on Environmental Regulations in Jamaica”.
	Facilitated “2 additional Judicial Symposia” to expand awareness-raising with Clerks of the Court and Deputy Clerks of the Court regarding environmental laws, issues, policies, and management in order to improve enforcement of regulations in Jamaica.

Project Vision per FAWP	Achievements During Project Year 4
	Through River Action Program and other public awareness programs motivated citizens to take action on solid waste management issues through 12 community clean-ups
	With MIND developed curricula for four courses in Compliance and Enforcement for field officers and community leaders
	Prepared Compendium of Environmental Cases to collate precedents and proceedings of major cases.
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.
	Final draft of the Watershed Policy submitted to NEPA and the MLE
	Supported workshop to facilitate the drafting and consideration of a new Watershed Protection Act.
Effective Institutional Arrangements for Watershed Management	
More efficient local sustainable Watershed Management Committees (WMCs) to serve as examples or models for other watershed areas.	“Procedures Manual: Establishing and Operating a Local Watershed Management Committee” used to guide operations of LWMCs
	Provided training to WMC members in minute taking, meeting management, fund raising and proposal writing
	Assisted WMCs and NIWMC Secretariat in preparing reports to document progress in local resource management activities
	GRWMC and RGWMC, and their Task Forces, met regularly to discuss and devise solutions to priority issues of stakeholders.
	Supported the development of a website for the NIWMC.
Better usage of the resources in the watershed. Improved natural resources management with an integrated approach.	Eleven grant-funded activities underway or completed in the Great River watershed integrating improved sewage disposal, environmentally friendly income generation, livestock management.
	Eighteen grant-funded activities (including institutional grants) underway or completed in the Rio Grande watershed integrating improved sewage disposal, water source protection, agroforestry, and land husbandry.

Project Vision per FAWP	Achievements During Project Year 4
	Four “Anchor Projects” – to combine project resources to address environmental “hot spots” - developed and launched including hiring field coordinators for each, completing detailed action plans and budgets, and initiating field work.
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
	Documentation of project methodologies and techniques in manuals and reports to provide a written record for reference for replication
	Held monthly brown bags to share knowledge from current programs and research with SWB Staff
Enhanced Public Awareness	
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.	Completed implementation of the Green Village Awards Program with an awards ceremony to announce winners. Cash prizes donated by local private sector
	Fifteen signs placed to highlight Project intervention at all grant sites and demonstration plots.
	Mounted displays at 10 public expositions to educate the public on watershed management issues
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.	Promotion of music video starring “Earth Defender” in support of the “It Haffi Legal Campaign”
	Facilitated “Judicial Symposia” to initiate awareness-raising with clerks and deputy clerks of the court to improve enforcement of environmental regulations.
	Developed and supported multiple performances of River Action with the Action Boyz in 17 communities, which have motivated communities to take action.
	Widely distributed set of 14 compliance and enforcement posters and NEPA 2004 calendar (which highlighted 12 of the posters) to community based organizations and schools in target watersheds

Project Vision per FAWP	Achievements During Project Year 4
	Field-tested, finalized, and distributed 1000 additional copies of the "Pocket Guide on to Environmental and planning Laws of Jamaica".
Increased linkage between watershed management and improved water quality and quantity of water. Teaching tools for communities about the importance of watersheds.	Completed water quality monitoring program in the Great River and reported findings to the watershed community in various fora.
	Designed and commenced a water quality monitoring program for the Rio Grande based upon stakeholder involvement and lessons learned from the GRW
	Presented results of beach erosion in St. Margaret's Bay to citizens groups and the RGWMC
	Contracted UWI to conduct sediment budget study of the Rio Grande WMU and St. Margaret's Bay. First report with preliminary findings submitted.
	Contracted UWI to conduct a study to determine the extent and hazard of land slippage/faulting in Dumphries, part of the Rio Grande Watershed
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 80 occasions.
	Published and disseminated brochure "A Profile of the Great River Watershed", and "A Profile of the Rio Grande Watershed".
	Completed implementation of the "River Action with the Action Boyz" program in seventeen communities of the GRW.
	Followed up on the recommendations from the "Great River Youth and Environment Conference 2003"
	Produced and distributed 90 "Enviro Kits" each containing over 100 brochures, booklets, posters and other environmental information to community leaders and public awareness officers
	Produced 9 general reading technical agriculture publications including topics such as "Waste Management in Agriculture" and 'Garden Management'
Improved Policy, Legislation, Compliance and Enforcement	
New and revised Watershed Protection Act. Environmental issues in watersheds are higher on the national agenda. Challenge the government on cohesiveness in purpose.	Final draft of the Watershed Policy submitted to NEPA and the MLE
	Held workshop to review and recommend revision of the Watershed Protection Act with NEPA Legal Services and the SWB

Project Vision per FAWP	Achievements During Project Year 4
Two watershed management plans for the Great River and the Rio Grande. Watershed appreciably cleaner to stakeholders.	Published Strategic Plan for Sustainable Development of the Great River Watershed drafted, and made presentation on the document to the GRWMC AGM
Communities solving their own problems. Improved well being of watershed residents.	C&E Posters, "It Haffi Legal" jingle and video, and Action Boyz skits helped to motivate communities to take initiative to solve local environmental problems. Twelve community clean-up initiatives were held during the period.
	Green Village Program motivated communities to take pride in surroundings and foster stewardship through community action
Capacity Building	
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).	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 update staff on current issues in watershed management.
	Lisa Kirkland replaced Leo Douglas as PSALM on secondment from NEPA to facilitate transfer of project initiatives, data etc
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.	Project closeout plan outlines process for transfer of project resources to NEPA.
	Lessons learned document prepared to provide basis for replicability after projects ends. The lessons have been redesigned into posters and flyers for general audiences.
	SWB Team Building Workshop and Retreat held to share knowledge of R2RW activities and build ownership of processes and team cohesiveness.
	Initiated special study with CASE to establish demonstration plots which show that recycling and reuse of wastewater in agriculture s financially rewarding and technically sound. Applications include raising ornamental fish, establishing hydroponics, and growing organic herbs and spices.
	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.

Project Vision per FAWP	Achievements During Project Year 4
Team of agencies with the capacity to guide the dynamics of sustainable watershed management.	Implementation of Sanitation Management Anchor Project that included analysis of effluent quality from constructed wetlands
	Provided training to WMC members in minute taking, meeting management, fund raising and proposal writing
Greater coordination of projects within watersheds.	Development of multi-stakeholder groups through WMCs and their task forces, as well as support to the NIWMC and its working groups.
	Began implementation of public education program for the Rio Grande with the Jamaica Conservation and Development Trust (JCDT) to develop and implement a community education program for sustainable watershed management in support of JCDT's management of the Blue and John Crow Mountains National Park and R2RW's programs in the Rio Grande Watershed.
	Worked closely with ENACT to field test, finalize, and distribute "Pocket Guide on to Environmental and Planning Laws of Jamaica", developing and implementing symposia for magistrates (including a proceedings CD with environmental laws), and developing curricula for courses in compliance and enforcement with MIND
	Made regular reports on status of R2RW to the Portland PDC per terms of the MOU with RGWMC and the PDC.
Reformed PIC to enhance coordination of three USAID SO2 environmental initiatives.	

2.2 Project Strategy

This section describes progress toward implementing each of the four strategies that R2RW applies to achieve objectives and goals. 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;
- ✍ Enhancing community involvement;
- ✍ Identifying leverage points; and
- ✍ Applying appropriate practices.

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

Achievements during the reporting period toward implementing each strategy are presented on the following pages:

Elements of Project Strategy	Achievements During Project Year 4
Building Strategic Partners	
Identifying and addressing the constraints strategic partners face in effecting environmental management.	Facilitated two additional “Judicial Symposia” to initiate awareness raising with clerks and deputy clerks of the court regarding environmental laws, issues, policies, and management in order to improve enforcement of regulations in Jamaica.
	More that 100 WMC members and partners strengthened through a range of Project-supported training courses including topics such as managing meetings, taking minutes, fund raising, proposal writing and facilitation skills
Motivating and working with field staff of strategic partners.	Joint design and management of project initiatives with partner organizations enhances the work product and quality of key partners. E.g. Implementing agro-forestry projects with the Forest Department and RADA helps both organizations to carry out their organizational mandates
	Provided training in facilitation skills to key partners including NEPA and SDC through APM 1 and APM 2 courses
	R2RW Technical staff mentored key field staff by working with selected individuals of partner organizations
	Recognized achievements of key staff of strategic partners through certificates of appreciation presented at AGMs.
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 wide issues.
	Established Management Committees for Anchor Projects and relatively larger sub-projects consisting of representatives from partner organizations. E.g. A steering committee consisting of MBMP, NEPA, RADA and the NWC managed the River Action with the Action Boyz Project

Elements of Project Strategy	Achievements During Project Year 4
Enhancing Community Involvement	
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 attendance recorded 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 of farmers from timber trees, fruit trees hot pepper, honey, vegetable and pineapple production projects in an environmentally sensitive way.
	Implemented water supply improvement projects in three communities in response to community demand.
	Supported to 12 community-initiated clean up campaigns through the provision of tools, cleaning gear, garbage bags, and other supplies.
Supporting strategic partners to ensure that sub-project activities are sustainable.	Coordinated with Forestry Department to implement Plant A Tree Program. Conducted a series of capacity building activities with NEPA departments. Support provided to RADA to reimburse excess travel claims of officers on R2RW related business.
	Worked with NGOs such as MBMP and JCDT to implement effective community outreach programs in a sustainable way.
	Designed the Rio Grande water quality monitoring program to build on and coordinate existing activities of key partners (WRA, NEPA)
Linking community involvement processes to all public awareness and environmental education activities.	Increased public awareness of watershed issues and successes via radio, newspapers, and the internet on over 80 occasions featuring community residents.
	Completed implementation of the “River Action with the Action Boyz” program in seventeen communities of the GRW.
	Produced and distributed 120 “Enviro Kits” each containing over 100 brochures, booklets, posters and other environmental information to community leaders and public awareness officers
	Involved resource persons from state agencies to discuss solutions after performances of community skits by Action Boyz.

Elements of Project Strategy	Achievements During Project Year 4
Integrating gender considerations into community involvement approaches.	Completed update of Annual Gender Equity for Sustainable Watershed Management in March 2004
Identifying models of “local watershed stewardship” and “community compliance strategies” that could be adopted during R2RW.	Successfully completed the Green Village Award Program 2003 was with an Awards Ceremony that recognized the top three communities of the Great River Watershed based on environmentally sound stewardship activities. 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.	Provided training in Advanced Participation Methods to staff of NEPA and SDC to build their capacity in community animation and developing community action plans. Forestry Department and RADA also included in courses.
Identifying Leverage Points	
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 in Gender Equity mechanisms conducted with GRWMC, RGWMC and partner agencies.
Adopting social marketing strategies.	Provided training to community groups on the use of drama in communicating messages using the Port Antonio Theatre Group as trainers
Targeting skills-building initiatives, tools for development, and information provision to leverage social, economic or environmental change.	Capacity of 100 WMC members and partners strengthened through a range of Project-supported training courses including topics such as managing meetings, taking minutes, fund raising and proposal writing
	Provided technical assistance to the SWB to successfully develop the Integrated Water and Coastal Area Management project for funding from the Global Environmental Facility
Encouraging joint partnership activities and leveraging the human and financial capital required to undertake them.	NEPA, NWC, FD, RADA, and community members continue to work together through the GRWMC to review, amend, and refine grant applications to R2RW.
	Water quality monitoring program in the Rio Grande designed as a joint partnership of NEPA, NWC, WRA and communities building on existing programs of agencies

Elements of Project Strategy	Achievements During Project Year 4
	Fundraising and proposal writing training done jointly with the Environmental Foundation of Jamaica and the Canada Green Fund
Assessing each activity to ensure that it utilizes leverage points to enhance its impact.	Planning for Environmental Unity through Faith Conference done through a steering committee involving leaders from 7 faith based organizations
Collaborating with other environmental projects and initiatives working towards similar objectives in the same geographic area.	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 in October 2003
	In Portland, worked with existing agencies to implement public awareness programs in a coordinated way: JCDDT in the upper Rio Grande, PPDC in the lower Rio Grande, and PEPA and the 4-H in schools.
	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 successfully secured 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.
	R2RW funds leveraged NRCA Board funds to implement two symposia for 150 clerks and deputy clerks of the court, and deliver courses prepared under contract with MIND
Applying Appropriate Practices	
Introduce farming systems and technologies that will stimulate economic growth and retard resource degradation.	Benefited 327 farmers through 17 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.
	Rio Grande Land Management Project focused interventions in the RGW in six community based agro-forestry projects with supporting technical input from State Agencies and supporting special studies from the UWI
	Initiated special study with CASE to establish demonstration plots which show that recycling and reuse of wastewater in agriculture is financially rewarding and technically sound.
	Completed water quality monitoring program in the Great River in cooperation with UWI and reported findings to the watershed community at Task Force Meetings and Annual General Meetings.

Elements of Project Strategy	Achievements During Project Year 4
	Began implementation of Sanitation Management Anchor Project that included analysis of effluent quality from constructed wetlands
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).	<p data-bbox="1058 318 1906 435">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.</p> <p data-bbox="1058 441 1759 474">Supported improved goat production in two locations in the GRW.</p>
Provide infrastructure such as water.	Through the R2RW grants program, designed and improved rural water supply projects in three communities of the RGW. Supporting the improvement of water supply projects in the communities increases the opportunities for personal hygiene through provision of a constant water supply. Improved water supply removes domestic activities from rivers and by extension protects local water sources and abstraction points.
Increase productivity through laborsaving equipment, improved tools, and expanded use of quality planting material.	<p data-bbox="1058 669 1906 734">Planting, weeding and care of pineapples demonstrated to farmers of the upper GRW using improved practices and reintroduction of varieties lost to the area</p> <p data-bbox="1058 740 1906 863">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 18,043 forestry tree seedlings and 5,219 fruit tree plantlets</p> <p data-bbox="1058 870 1839 928">Experimented with the use of wheel hoes, and continued multiplication of disease resistant banana varieties.</p>
Develop and disseminate low-cost sanitation solutions that are environmentally sensitive.	<p data-bbox="1058 941 1906 1026">Produced an instructional video documenting the installation of constructed wetland technologies in cooperation with the Montego Bay Marine Park’s video unit.</p> <p data-bbox="1058 1032 1906 1123">Began implementation of Sanitation Management Anchor Project that included detailed cost and physical-chemical analysis of effluent quality from constructed wetlands</p>
Improve the marketing of products from the targeted watershed areas.	<p data-bbox="1058 1140 1906 1230">Establish marketable products – scotch bonnet peppers, honey – through support to three community-based projects expected to generate J\$6.3 million in local income.</p> <p data-bbox="1058 1237 1822 1295">Supported farmers in Cacoen Castle and Mafoota to enhance vegetable production targeted at the hotel markets</p>

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

Introduction

Component 1 is built on work with local organisations – governmental, non-governmental, private sector, and community-based – to identify and implement appropriate management practices for watershed resource users and to enhance the capacity of targeted communities to improve environmental management.

The work under Component 1A revolves around the Great River Watershed Management Committee (GRWMC) and communities in the Great River Watershed. The GRWMC has been strengthened by R2RW, and it is emerging as a valuable forum for coordination, sharing, and decision-making. For the remainder of R2RW, the GRWMC will increasingly be placed at the front of watershed action, R2RW input will diminish, and the WMC will remain as an integral part of local governance – linked with Parish Development Committees (PDCs) – to engage citizens and government in joint planning and action.

In cooperation with the GRWMC, R2RW reached local organisations – to introduce and disseminate Targeted Appropriate Practices (TAPs) that stimulate income growth, protect the environment, and benefit health. Activities under Component 1A not only promote TAPs but also strengthen the link that has been missing in previous Jamaican watershed management programs – the capacity of organisations to transfer and sustain TAPs over time.

Achievements under Component 1A during the reporting period are described in the following sections.

- | | |
|-----|---|
| 3.1 | Development of the Great River Watershed Management Committee |
| 3.2 | Improved Production of Pineapple for Sustainable Livelihoods – Anchor Project # 1 |
| 3.3 | Production and Marketing in the Great River Watershed |
| 3.4 | Cleaning and Greening Cambridge – Anchor Project # 2 |
| 3.5 | Water and Sanitation Activities in the Great River Watershed |
| 3.6 | Public Awareness Activities in the Great River Watershed |
| 3.7 | Gender Considerations Incorporated into Project Activities |

3.1 Development of the Great River Watershed Management Committee

The objective of these activities is to establish the GRWMC as a viable part of local environmental governance after the completion of R2RW. Previous project years have focused on building the capacity of the organization through resources and direct technical assistance. For the remainder of the Project, R2RW's contribution will diminish and the GRWMC will be required to increasingly exercise its new capacity and become a functioning contributor to watershed management. Key to the WMC's function are its four task forces which provide vital direction to actions concerning expanding production and marketing, improving water and sanitation, promoting compliance and enforcement of environmental regulations, and raising public awareness of the watershed.

Work Plan Activity	Activity Description	Achievements During Reporting Period
3.1	Development of the Great River Watershed Management Committee	
3.1.1	Finalize and Implement the GRW Strategic Plan	The Plan was completed and widely distributed among GRWMC members and stakeholders. An action-planning workshop was held with the GRWMC executive in January 2004 to prepare detailed activities based on recommendations proposed in the Plan.
3.1.2	Management Activities of the GRWMC	Production and Marketing Task Force Link established to export market for scotch bonnet peppers produced by R2RW-supported farmers. Farmers' income significantly improved through sale of several hundred pounds of peppers each week.
		Water and Sanitation Task Force Pisgah All-age School wastewater project completed Mafoota community-managed car wash grant to be closed as is - where is. Clean-up days held at Ramble Pond, Cedar Grove, Chester Castle, Cambridge, York and Belmont, Ranch Hill and Dundee.
		Compliance and Enforcement Task Force Several anecdotal reports suggest that enforcement officers including field staff and magistrates are more actively prosecuting environmental violations The Pocket Guide on Environmental Regulations and popular material on compliance and enforcement were used in training programmes for compliance and enforcement field officers and community leaders
		Public Awareness Task Force Action Boyz community theatre presented in several more venues – R2RW support completed
3.1.3	Develop Plan to Phase Out R2RW Support to GRWMC	Workshop to develop Phase Out Plan held

3.1.1 Finalize and Implement the GRW Strategic Plan

The Plan was finalized and widely distributed among stakeholders. A workshop was held with the GRWMC executive in January 2004 to confirm vision and strategic goals, and to prepare a work plan based on the objectives and activities outlined in the Plan. The Plan is for the period January 2004 to December 2008. See Appendix 3

3.1.2 Management Activities of the GRWMC

Regular meetings of the GRWMC, its executive, and the four task forces continued throughout the year with a conscious strategy toward diminishing the direct role of R2RW staff in their planning and management. Key achievements of each task force are tabulated above.

Develop Plan to Phase out R2RW Support to GRWMC

During Project Year 3, three important reports were prepared to lead the way toward phasing out R2RW input to WMCs:

- ✍ Procedures Manual: Establishing and Operating a Local Watershed Management Committee;
- ✍ Review of Local Watershed Management Committees in Jamaica; and
- ✍ Report on Options for Great River Watershed Management Committee.

The first two reports developed generic methods of establishing LWMCs including recommendations on mandate, governance and participation strategies, and linkages with the NIWMC, 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.

During the current reporting period, the GRWMC has taken specific steps toward the end of support from R2RW. Beginning with the January 2004 meeting of the GRWMC, the Chair, in his opening remarks, clearly stated “that this is the beginning of the end of the R2RW project, meaning that after 18 months the R2RW will close and the committee will then be on its own to carry on the work by itself.” Such consistency of focus was important to establish at this point and is expected to guide planning and direction of the GRWMC throughout the life of R2RW.

On Wednesday April 7, 2004 a workshop was held which developed a Phase-out Plan for the next 12 months. There were 27 participants in the workshop, which brought together members of the GRWMC executive, key partner agencies, the SDC and Parish Council and community based organizations. The Phase-out Plan was further refined at a subsequent meeting of the GRWMC executive committee and presented to the stakeholders of the Great River Watershed at the quarterly meeting of the GRWMC on April 29th. See Appendix 3 for details of the implementation plan.

3.2 Improved Production of Pineapple for Sustainable Livelihoods – Anchor Project # 1

Pineapple production in the upper Great River Watershed is widespread and poor cultural practices make it a significant user of agrochemicals resulting in soil degradation. The specific objectives of this Anchor Project are to:

- ✍ Establish pineapple production demonstration plots that show improved pineapple production in an environmentally sustainable system;
- ✍ Establish 100 new acres of improved pineapple in the Great River Watershed on farm plots amongst approximately 200 farmers;
- ✍ Improve income generation through new and developmental strategies of culturing pineapples; and
- ✍ Use training workshops, information booklets, and a video to increase the awareness of pineapple growers.

R2RW funding is used for inputs, signage and technical assistance for demonstration plots, and inputs and training for the production phase. See Appendix 4 for details of activities in this project.

Work Plan Activity	Activity Description	Achievements During Reporting Period
3.2	Improved Production of Pineapple for Sustainable Livelihoods – Anchor Project # 1	
3.2.1	Secure Buy-in From Stakeholders Including RADA on Anchor Project	Buy-in obtained from task forces of the GRWMC, RADA, NEPA, JAS, PCA, PC, CDCs, and SDC
3.2.2	Marketing Analysis and Investigation of Local Processing Potential	Preliminary investigations commenced.
3.2.3	Hire Project Coordinator	Contracted Sadie Dixon as Project Manager
3.2.4	Site Selection and Soil and Water Analysis	Five demonstration sites selected and soil analyses completed
3.2.5	Arrangements for Planting Material Including Opportunities for Tissue Culture with SRC	UWI Biotechnology Centre has achieved success and two deliveries of hardened plantlets are scheduled in April and May 2005. The highest quality suckers are selected from farmers within proximity to the project area.
3.2.6	Public Awareness for Anchor Project	Video filmed and final edits underway. Information booklet written and in use.
3.2.7	Demonstrate Environmentally Friendly Production Practices	Demonstration plots initiated using contour planting, variety comparison, fertilizer placement and weed management. Held 5 field training days benefiting 68 farmers

3.2.1 Secure Buy-in From Stakeholders Including RADA on Anchor Project

As reported in “Budgets and Implementation Plans for the Anchor Projects”, report generated by R2RW, the implementation schedule was completed and placed in a gantt chart for the period January 2004 to June 2005 (See Appendix 4 for progress to date). This report contains specific indicators, which will be used to assess the success of the Project as well as main activities and their associated costs reflected in a detailed budget. The primary responsibility for implementing the Anchor Projects lies with the Project Coordinator, however, she is supported by technical team members from R2RW, the task forces of the GRWMC, RADA extension officers and other support agencies including NEPA, Jamaica Agricultural Society (JAS), Pesticides Control Authority (PCA), Parish Council (PC), Community Development Committees (CDCs), and the Social Development Commission (SDC).

3.2.2 Marketing Analysis and Investigation of Local Processing Potential

Some preliminary investigations have been done to assist with formulation of a Scope of Work for STTA. All local processors were contacted to determine varieties and production volumes required. The domestic and hotel markets are presently adequate for current production levels.

3.2.3 Hire Project Coordinator

After a competitive search, Sadie Dixon was hired as the Project Coordinator for this Anchor Project through secondment from the RADA office in Montego Bay. Ms Dixon is a highly respected agricultural specialist, is very knowledgeable about pineapple growing and is an experienced community animator. She has a solid record through her close cooperation with R2RW as an active member and leader of the GRWMC and its Production and Marketing Task Force.

3.2.4 Site Selection and Soil and Water Analysis

Five demonstration sites have been selected – Chesterfield, Coffee Ground, Maybole, Ginger Hill, and Retrieve. Rural Physical Planning Unit (RPPU) of the Ministry of Agriculture has completed soil tests. The results provided by RPPU will guide site preparation and management.

3.2.5 Arrangements for Planting Material Including Opportunities for Tissue Culture with SRC

Two initial attempts at tissue culture failed because of bacterial contamination. Attempts to import materials were frustrated by the presence of pink mealy bug and licensing restrictions in source countries. Collaboration with the UWI Biotechnology Center has rewarded persistence as recent breakthroughs have promised the delivery of 4000 hardened plantlets in April and May 2005.

3.2.6 Public Awareness for Anchor Project

Production of a video was initiated in May. Groups of farmers and sites for film footage collection were identified, a preliminary script was drafted, and cost estimates were solicited from two video production companies. The CPTC was selected and video production commenced in July. The final edits and postproduction touches are being finalised with delivery of the video scheduled for the end of October/early November. An extension booklet was written and is being used widely even outside the project area. The booklet was presented for peer review at the Caribbean Food Crops Society Meeting in St. Johns, U.S Virgin Islands July 19-23, 2004. A poster has been developed for use at this and other agricultural industry shows. See Appendix 5.

3.2.7 Demonstrate Environmentally Friendly Production Practices

Five demonstration plots were established and the land prepared. Each plot will demonstrate land husbandry best practices and proper cultural practices including fertilizer application, weed control, intercropping and spacing. Five field days were held to show farmers techniques in pineapple production including weed management, fertilizer application and lining out of plots.

3.3 Production and Marketing in the Great River Watershed

The objective of the activities described in this section is to increase the area of agricultural land under sustainable use. Activities started under the third annual work plan promoting sustainable agricultural practices continue with a focus on documenting achievements, disseminating lessons learned, and planning to phase out R2RW support to this area by the end of the Project Year. Continuing activities include:

- ✍ Establishing demonstration plots of disease resistant bananas and plantains;
- ✍ Supporting hot pepper production and marketing for export;
- ✍ Developing and marketing agricultural by-products, particularly honey;
- ✍ Improving goat quality and meat production; and
- ✍ Supporting a broad-based Plant-a-Tree Campaign

Work Plan Activity	Activity Description	Achievements During Reporting Period
3.3	Production and Marketing in the Great River Watershed	
3.3.1	Improved Crop Varieties	Much success with pepper. Improved FHIA varieties of banana and plantains have been introduced and multiplied through the Banana Board Research Department. R2RW has concluded its involvement with FHIA and has handed over the initiative to the Research Department.
3.3.2	Livestock Improvement	Two herds of goats are doing well and numbers have increased.
3.3.3	Plant-a-Tree Campaign	In collaboration with the Forestry Department, and RADA fruit and timber trees are being distributed and planted. (See Table in 3.3.3 below)

3.3.1 Improved Crop Varieties

The on-going projects, which have received intensive support from R2RW for nearly two years are beginning to show the potential to generate income for farmers. The Rushea Scotch Bonnet Pepper project is the most advanced with very poor farmers now generating J\$10,000 (US\$165) of income in a typical week. Linking the Rushea farmers to a reliable and reputable exporter who collects pepper and pays farmers promptly was key to the success observed to date.

Location	Objectives	Partners	Status During Reporting Period
On-going Projects			
Rushea	Expand income for 13 farming families through export marketing of Scotch Bonnet peppers, produced using environmentally friendly irrigation, soil management, and fertilization systems	Rushea Farmers Group	<p>Production for export ranged between 3800 lbs and a high of 9000 lbs. Local sales ranged between 50 lbs and 405 lbs.</p> <p>R2RW requires that part of the income generated be used for local environmental improvements. Significant income has been generated, but local environmental improvements are still in progress. Environmentally friendly practices are being implemented. The project is expanding and farmers are diversifying.</p> <p>Status: completed</p> <p>Completion date: December 2003</p>

Location	Objectives	Partners	Status During Reporting Period
Cedar Grove	Expand income for nine farmer families through export marketing of Scotch Bonnet peppers produced using environmentally friendly irrigation, soil management, and fertilization	Cedar Grove Farmers Group	<p>Production was lower than anticipated, and income generation is not as substantial as Rushea. A greenhouse established through the FAO is being rehabilitated to produce an initial 3000 seedlings for Cedar Grove and after that quota has been achieved extend the supply to other areas.</p> <p>The greenhouse was damaged by Hurricane Ivan but was subsequently repaired. As above, R2RW requires that part of the income generated be used for local environmental improvements.</p> <p>Status: Completed</p> <p>Completion date: December 2003</p>
Hermitage	Improve livelihoods and increase environmental awareness by expanding honey production and sales	Hermitage Honey Producers	<p>Increased environmental protection through tree preservation is a key outcome. Some income generation has begun. No tree planting/preservation has occurred.</p> <p>This will be the first product labeled as "endorsed" by the Great River Watershed Management Committee. Labels have been developed for the product bottles.</p> <p>Hurricane Ivan damaged some apiaries as well as affected the availability of nectar. This impact has subsequently been addressed.</p> <p>Training provided in business management and marketing.</p> <p>Status: 100% completed</p> <p>Completion date: June 2004</p>
New Projects During Reporting Period			
Mafoota	<p>Construct water storage ponds for irrigation to be used by 20 farmers during dry season</p> <p>Erect facilities for producing vegetable and herb plantlets and a holding/distribution center for tree seedlings</p> <p>Enhance livelihoods and demonstrate environmentally friendly agricultural practices including non-use and judicious use of pesticides and inorganic fertilizers, composting, and soil and water conservation</p>	Mafoota Farmers Group	<p>Mafoota Farmers Group has been supplying Sandals Resorts with local and exotic vegetables for over four years. The Group also supplies local markets and Sunset Beach Resort Hotel</p> <p>Project developed through the active participation of local officers of the RADA and NEPA with technical input from R2RW</p> <p>Project discussed and recommended for approval by the Grant Selection Committee of the GRWMC.</p> <p>Irrigation Project was on hold until the car wash project was completed. The termination of this project will now enable the irrigation project to proceed.</p> <p>Start date: March 22, 2004</p> <p>Completion date: December 31, 2004</p>

Location	Objectives	Partners	Status During Reporting Period
Cacoon Castle	<p>Reverse environmental degradation from shifting cultivation and poor agronomic practices</p> <p>Introduce improved, practical and affordable technologies to produce exotic vegetables and herbs, semi-perennials (pineapples) and perennials (fruit trees and timber) for full-year cultivation</p> <p>The main market for the products will be Round Hill Hotel in St. James and local public markets</p>	Cacoon Castle Farmers' Group/Cacoon Castle Jamaica Agricultural Society	<p>Project developed through the active participation of local officers of RADA, Round Hill Hotel, and NEPA with technical input from R2RW</p> <p>Project discussed and recommended for approval by the Grant Selection Committee of the GRWMC</p> <p>Project inputs were secured and training in cultural practices (potting mix blending, pesticide use etc) started. Project affected by Hurricane Ivan.</p> <p>Start date: March 22, 2004</p> <p>Completion date: December 31, 2004</p>

In addition 7 field days were held to demonstrate lining out of pepper plots, soil conservation methods, lining out for planting Cocoa trees, fruit tree pruning and resuscitation. One other training session was also held in business management including the development of marketing plans. Some 120 persons benefited from these training opportunities.

3.3.2 Livestock Improvement

Goat meat is central to typical Jamaican diets, but a significant amount of it is imported and the local supply is generally not of high quality. The two projects tabulated below were intended to address these concerns while also demonstrating improved goat management to reduce their negative environmental impacts.

Location	Objectives	Partners	Status During Reporting Period
Knockalva	<p>Establish a "Mother Farm" to serve as focal point for increasing goat production</p> <p>Establish goat rearing groups</p> <p>Demonstrate improved systems for goat shelter, feeding and security to local farmers</p> <p>Establish a program to support local buck stations to improve local stock</p>	Knockalva Agricultural School	<p>19 animals are in place including an increase of 7 animals. The animals are in good condition. Over 100 students have benefited from practical goat husbandry training through the project. Buck service has been made available to the community.</p> <p>Status: Completed</p>
Montpelier	<p>Establish a "Mother Farm" to serve as focal point for increasing goat production</p> <p>Establish goat rearing groups</p> <p>Demonstrate improved systems for goat shelter, feeding and security to local farmers</p> <p>Establish a revolving doe scheme</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>RADA and MINAG</p>	<p>The herd has increased to 20 animals and is in very good condition. Additionally 17 local stock have been added to benefit from the buck service.</p> <p>Status: Completed</p>

3.3.3 Plant-A-Tree Campaign

13,500 trees have been planted since this Campaign began. During the reporting period, the contract for previous Campaign Coordinator, Mr. Nerval Brown ended. Sadie Dixon has assumed his duties with support from Neville Williams.

Location	Objectives	Partners	Status During Reporting Period
New Projects During Reporting Period			
Catadupa	<p>Resuscitate 20 acres of existing cocoa</p> <p>Establish 15 acres of new cocoa</p> <p>Improve cocoa production by approximately 20 tons of dried beans per annum, after four years</p> <p>Support existing cottage industry producing chocolate bars for local and export markets.</p> <p>Use minimal tillage, excellent root structure, and heavy leaf litter of cocoa for land stability and erosion control</p>	<p>Catadupa Farmers Group</p> <p>RADA</p> <p>Cocoa Industry Board</p>	<p>Innovative, income generating contribution to tree planting campaign initiated</p> <p>Project developed through the active participation of R2RW, the Cocoa Industry Board, and RADA</p> <p>Project discussed and recommended for approval by the Grant Selection Committee of the GRWMC.</p> <p>2 acres resuscitated and 1 new acre established. Training day on lining and planting held in September.</p> <p>Start date: March 2004</p> <p>Completion date: December 2004</p>

Great River Plant A Tree Campaign		
Category	Types	Total Planted to Date
Timber	Mahogany, Cedar, Lignum Vitae, Mahoe, Caribbean Pine, Spanish Elm	18043
Fruit	Ackee, Naseberry, Nutmeg, Guava, Otaheiti Apple, Jackfruit	3219
Coconut	Maypan	2000
Pineapple	Ripley, Sugar Loaf, Honey, Cheese, Cowboy	10050

3.4 Cleaning and Greening of Cambridge – Anchor Project # 2

The objectives of this Anchor Project are the long-term environmental improvement of the town of Cambridge in the upper GRW through re-developing the local Community Development Committee (CDC), increasing public awareness of environmental regulations, and supporting targeted actions to improve the environmental quality of the area. The CDC will be supported to serve as a local governance structure to facilitate community involvement in the management of the town's natural resources.

As with the other three Anchor Projects, this one will focus project resources on multiple aspects of broad-based social development in Cambridge ranging from governance to addressing solid and liquid waste management issues.

Work Plan Activity	Activity Description	Achievements During Reporting Period
3.4	Cleaning and Greening of Cambridge – Anchor Project # 2	
3.4.1	Develop Governance Mechanism for Solid Waste Management	<p>Successfully engaged Parish Council and other local stakeholders around a range of high priority solid waste issues.</p> <p>St. James Parish Council prepared a resolution to support the anchor project's initiatives.</p> <p>Developing baseline community profile through participatory action-planning</p> <p>Established project office with tables, chairs, and flip chart stands.</p> <p>Initiated local capacity building through training and participatory processes</p> <p>CDC received successful evaluation from the Department of Cooperative and Friendly Societies</p> <p>Completed focused action planning to address extension of Infant School (through JSIF) and greening of the school grounds.</p> <p>Environmental survey conducted by Michael Pryce under STTA arrangement.</p> <p>Steering Committee formed and meeting quarterly.</p>
3.4.2	Improve Land Management and Sanitation Practices	<p>Developed plan to remove solid waste from central Cambridge in collaboration with the St. James Parish Council and the National Solid Waste Management Authority.</p> <p>Started "Greening of Cambridge" through beautification of office premises and environs in collaboration with Land Management Team.</p> <p>6 skips and 143 drums delivered and deployed to locations pre-selected by local consensus.</p> <p>Drain and gully cleaning progressing under contract arrangement.</p>
3.4.3	Public Awareness for Anchor Project	<p>12-month campaign designed and a coordinator hired. The campaign was informed by a baseline survey conducted in August. Buttons, posters and a mascot have been used to engage the public.</p> <p>Public Awareness Steering Committee formed to lead the campaign</p>

3.4.1 Develop Governance Mechanism for Solid Waste Management

As reported in "Budgets and Implementation Plans for the Anchor Projects", report generated by R2RW, the implementation schedule was completed and placed in a gantt chart (See Appendix 7) for the period January 2004 to June 2005. This report contains specific indicators, which will be used to assess the success of the Project as well as main activities and their associated costs reflected in a detailed budget..

After a competitive search, Janet (aka Patti) Bedasse was hired as the Project Coordinator for this Anchor Project. Ms. Bedasse comes to R2RW after a highly regarded career as a teacher, banker, and community development specialist. The Project established an office with considerable community involvement, and Ms. Bedasse in partnership with the SDC initiated her input to the Project through intensive participatory action planning and community profiling. She was able to rapidly mobilize and focus the existing community leadership toward very specific community-wide activities.

The primary responsibility for implementing the Anchor Projects lies with the Project Coordinator, however, she is supported by technical team members from R2RW, the Task Forces of the GRWMC, strong community involvement through an existing and well-organized PTA, RADA extension officers and other support agencies including NEPA, Jamaica Agricultural Society (JAS), Pesticides Control Authority (PCA), Parish Council (PC), Community Development Committees (CDC), and the Social Development Commission (SDC). In addition, the Cambridge CDC has progressed to the point of being successfully evaluated for registration as a legal entity by the Department of Cooperative and Friendly Societies of the GOJ. A Steering Committee consisting of the SDC, R2RW, St. James Parish Council meets quarterly to oversee the project.

3.4.2 Improve Land Management and Sanitation Practices

Significant steps were taken with the Cambridge community and GRWMC activists to identify priority issues and a short-term action plan focused on solid waste management and advocating for an informal abattoir to relocate to a more appropriate location. In the last six months on the ground action commenced in earnest with drains and gullies being cleaned and garbage receptacles being deployed throughout the project area.

3.4.3 Public Awareness for Anchor Project

A proposal for a 12-month public awareness campaign has been developed for presentation, acceptance, and implementation in Cambridge. At the same time, a questionnaire was tested under R2RW leadership to examine gender equity in a local women's group. Michael Pryce was contracted to conduct a baseline environmental survey to guide the anchor project and also to measure progress. A mascot the 'Dr Bird', posters and badges have been produced to raise awareness and attract public attention.

3.5 Water and Sanitation Initiatives in the Great River Watershed

Stakeholders in the GRW continually rank sanitation – both solid and human waste disposal - as their highest priority. Multiple related activities have been completed or are underway in the watershed to address these issues including supporting a Water and Sanitation Task Force as part of the GRWMC, completing demonstration constructed wetlands at schools in Pisgah and Retrieve, water quality sampling to determine levels of priority pollutants.

Solid waste management is also a high priority of stakeholders in the GRW. Key partners such as the National Solid Waste Management Authority (NSWMA), and the Montego Bay Marine Park (MBMP) are engaged in organizing community clean-ups and organizing a solid waste management seminar for Montego Bay. Communities throughout the watershed, in part inspired by the Green Village Awards Program, have been taking increasing interest in organizing community clean-ups, and Cambridge is expected to take significant actions in the early weeks of the next reporting period.

Work Plan Activity	Activity Description	Achievements During Reporting Period
3.5	Water and Sanitation Initiatives in the Great River Watershed	
3.5.1	Water and Wastewater Intervention	Reduced fecal pollution of the environment by completing construction of artificial wetlands at two large schools and a community center in the upper watershed
3.5.2	Solid Waste Management Interventions	Solid Waste Management Seminar held at the Holiday Inn, Montego Bay in April 2004. Seminar planned, developed and delivered through extensive participation Ten community clean-up days accomplished in conjunction with public awareness activities Major community clean-up in Cambridge as part of "Cleaning and Greening of Cambridge" Anchor Project
3.5.3	Water Quality Monitoring on the Great River	Results show elevated levels of nitrates, phosphates and fecal coliform concentration. Recommendations generated for land based activities to reduce river contamination.

3.5.1 Water & Wastewater Intervention

The purpose of these interventions is to improve watershed conditions – reduce fecal pollution, control soap disposal, and manage motor oil disposal - by improving multiple aspects of wastewater management with a focus on introduction and mainstreaming of innovative technologies.

Location	Objectives	Partners	Status During Reporting Period
Content	Improve wastewater management through water harvesting, improved sanitary facilities, and a constructed wetland Expand tree planting at the local community center	Content Progressive Youth Club	Status: Completed
Mafoota	Decrease surface water pollution by moving harmful practices out of rivers and into controlled settings at a community car wash, laundry facility, and toilet using a constructed wetland and an oil separator	Mafoota Citizens' Association Mafoota Youth Club	Project was on hold pending resolution of ownership, participation and management issues. The community engaged in a participatory process to resolve conflicts before moving forward. Steering Committee requested assistance from the WSTF to develop a business plan. Roof of building lost during Hurricane Ivan and none of the blown off material recovered. Activity on this grant will cease. Status: 90% completed Completion date: 1st quarter 2004

Location	Objectives	Partners	Status During Reporting Period
Pisgah	Improve wastewater management at a large school through water harvesting; using rainwater to operate flush toilets that replace pit latrines; demonstrate the use of constructed wetland to treat wastewater	Pisgah All Age School	Status: Completed
Retrieve	Improve wastewater management at a large school through water harvesting; using rainwater to operate flush toilets that replace pit latrines; demonstrate the use of constructed wetland to treat wastewater	Retrieve All Age School	Status: Completed

3.5.2 Solid Waste Management Interventions

The management and disposal of solid waste is an issue throughout Jamaica and particularly resonant in rural communities – where services are minimal at best. Beginning in March 2004, a Solid Waste Task Force with membership from R2RW, Montego Bay Marine Park Trust (MBMP), Western Parks and Markets (WPM), the National Solid Waste Management Authority (NSWMA), St. James Parish Council (SJPC), Garbage Disposal & Sanitation Systems Ltd. (GDSS), Community Organizations for Management and Sustainable Development (COMAND), and the Office of Disaster Preparedness & Emergency Management (ODPEM) began planning a two-day seminar that was held in April.

A Jamaican consultant, Ianthe Smith, was engaged under subcontract to MBMP and R2RW to lead preparations and prepare documentation of the Seminar under a detailed Scope of Work. MBMP, the GRWMC, EFJ, and R2RW worked in partnership to cover necessary costs and logistics of the event.

The objective of the seminar was to find practical solutions to solid waste problems being experienced, particularly in Western Jamaica, and to use a participatory approach to come up with recommendations to solve these problems through partnerships.

The seminar was structured so that firstly Jamaica's solid waste management policy was presented. After which there were a number of presentations on the existing situation in and around Montego Bay. The gaps between the policy and the existing situation were highlighted, and then the participants were organized into working groups to recommend solutions to close the gaps. This was done along the lines of specific themes. The seminar concluded with presentations in a plenary session on the recommendations from each group and a brief discussion at the end.

A CD of seminar presentations prepared by the MBMP, a gap analysis, canvas bags featuring "Have a Nice Bay" with the MBMP logo for each participant, a video of the Seminar, and a Seminar report were major outputs. The action plan will be circulated to the 100 expected participants and 50 other interested agencies. A summary report is presented in Appendix 8.

3.5.3 Water Quality Monitoring on the Great River

Dr. Anthony Greenaway submitted the final report for this activity. Findings include elevated levels of both nutrients and fecal coliform in the river.

3.6 Other Public Awareness Activities

The objective of this set of activities is to increase local level environmental stewardship while establishing mechanisms to carry the initiatives forward through time.

Work Plan Activity	Activity Description	Achievements During Reporting Period
3.6	Other Public Awareness Activities	
3.6.1	Build Consensus from WMCs, Anchor Project Coordinators & Partners on PA Strategy	GRWMC and RGWMC consulted re expansion of successful strategies in GRW and initiation of new approaches – drama workshops; 4H club activities and PDC strengthening in RGW.
3.6.2	Enhance Environmental Awareness Through Community Drama (Action Boyz)	Phase 2 of the R2RW partnership with the Montego Bay Marine Park completed with 10 performances of the two community dramas developed by the Action Boyz
3.6.3	Promote GRW Green Village Stewardship Program	Green Village awards ceremony was held at Blue Hole Nature Park in December 2003. The Competition has played a positive role in motivating communities to get involved. Green Village 2 launched in May 2004
3.6.4	Participate in Fairs, Expos and Community Environmental Fora	Project participated actively in Pisgah Environmental Fair, National Youth in Agriculture Expo, and World Water Day events, Youth & the Environment, Faith & the Environment, Nyammins and Jammins, Denbigh and Green Expo
3.6.5	Design Baseline and Mid-point Indicators for New and Existing Public Awareness Strategies	R2RW staff investigated approaches and indicators for an education strategy for engaging non-literate persons.
3.6.6	Plan and Implement 2 nd Youth & the Environment Forum	Youth and the Environment held successfully in July.
3.6.7	Plan and Implement Seminar on Religion and the Environment	Forum held on May 20 th .
3.6.8	Finalize Content, Produce and Provide Environmental “Kits” to Youth and Community Organizations	Kit content finalized and 120 kits distributed to a variety of persons.

3.6.1 Build Consensus from WMCs, Anchor Project Managers and Partners on Public Awareness Strategy

In the GRW, the established strategies of the Green Village Award Program and Action Boyz in community drama for education were continued for a second phase. In addition, public awareness work in communities deepened through composting demonstrations on clean up days and the involvement of 15 community representatives at the Solid Waste Management workshop.

3.6.2 Enhance Environmental Awareness through Community Drama (Action Boyz)

The Action Boyz drama troupe, a partnership between R2RW and the Montego Bay Marine Park, has become established as a successful and desired promoter of environmental awareness. During the reporting period, R2RW's support to them came to an end as the ten community

performances agreed to in the second phase of this partnership have been completed – 9 in the GRW and 1 in the RGW. Two complete show pieces entitled “Wah Yuh Dash Wey Nuh Wash Wey” (What You Throw Away Doesn’t Wash Away) and “Saal Ting an Wata Inna Trobble” (Food and Water are in Trouble (from pesticide/herbicide spraying)) have been developed by the group. Each performance consists of both entertainment and education supported by a PowerPoint presentation and a participatory discussion on watersheds. During the reporting period, performances were held in the GRW at Bickersteth Primary School, Chester Castle Basic School, Lethe All Age School, Dundee All Age School, Great River District Shed, Roehampton Primary School, Content Community Centre, Faith Christian Fellowship Church in Houghton Grove, and Seaford Town All Age School. In addition, for the first time, performances were held in the RGW in February 2004 in conjunction with World Wetlands Day. Typically, 100 to 200 people attended each performance, and one performance was videotaped for use in other venues.

In order to evaluate the success of the project, KAP questions were prepared to measure the effectiveness of the project. With the completion of R2RW support, it is anticipated that follow up studies will be conducted in Lethe and Chester Castle where baseline were established.

Following an Action Boyz performance in the RGW, the Port Antonio Theatre Group submitted a proposal for support to R2RW that was approved during the reporting period (see section 4.5.3).

3.6.3 Promote GRW Green Village Stewardship Program

12 communities made applications to the Green Village competition. Field visits were conducted, and an awards ceremony was held at Blue Hole Nature Park in December 2003. The USAID/Jamaica Mission Director attended the awards ceremony. The Green Village Program has stimulated significant interest, and anecdotally, competition has played a positive role in motivating communities to get involved and win. The second phase of the Program was launched in May 2004 with applications being received from 12 communities. The competition criteria have been further refined in the second phase.

3.6.4 Participate in Fairs, Expos and Community Environmental Fora

Pisgah Environmental Fair, World Water Day 2004 Monday March 22nd, 2004

World Water Day was celebrated at the Pisgah All Age School, Pisgah St. Elizabeth. The theme for World Water Day 2004 was “*Water and Disasters - Water, Sanitation and Hygiene.*” The guest speaker, Senator, the Honorable Deika Morrison unveiled a sign, which marked the start of the Great River Watershed at Pisgah.

World Wetlands Day Activities, Monday February 2 – Wednesday February 4, 2004 RGWMC

On February 2nd R2RW in association with the CWIP2 and Portland Environmental Protection Agency (PEPA) celebrated World Wetlands Day under the theme “***From the Mountains to the Sea - Wetlands at Work for Us***”.

Other Activities

The Project was represented in several other activities including the:

- ✍ Seminar on Watershed Management, CASE – November 25, 2004
- ✍ Nyamins and Jammins 2003
- ✍ Round Hill Hotel Environmental Fair – December 3, 2004
- ✍ Institute of Jamaica’s Earth Day Fair 2004
- ✍ CASE Career Fair April 2, 2004

- ✍ National Youth in Agriculture Expo – March 18, 2004
- ✍ Pisgah Community Environmental Church Service – March 21, 2004
- ✍ 4-H National Achievement Day, 2004
- ✍ Green Expo June 4-6, 2004
- ✍ Denbigh July 30 – August 1, 2004

3.6.5 *Design Baseline and Mid-point Indicators for New and Existing Public Awareness Strategies*

R2RW staff held discussions with Claudia Chambers in February 2004 regarding developing indicators and an approach for an education strategy for working with non-literate persons. The update to the Knowledge, Attitudes and Practices survey will be conducted in March 2005.

3.6.6 *Plan and Implement 2nd Youth & the Environment Forum*

Planning for the 2nd Forum was initiated during the reporting period. The Jamaica 4H Club lead the process of contacting potential participants through their 4H Club network. The SDC and schools were also used to expand participation in the conference. The Youth and the Environment Conference was extremely successful and exposed approximately 90 participants from western Jamaica and the Rio Grande watershed to nature attractions and topical issues in the environment such as land based sources of pollution and poverty, health and the environment. See Appendix 9 for a summary report.

3.6.7 *Plan and Implement Seminar on Religion and the Environment*

Planning for this seminar began with accessing short-term technical assistance. A Scope of Work was developed and a consultant hired to coordinate the Western Jamaica Faith and the Environment Seminar, which was held on Thursday May 20, 2004. This activity emerged out of the GRWMC's Youth and Environment Conference held in July 2003 where it was articulated that religious organizations are an important social medium through which people of all ages and social classes come together at the local level. As such, religious groups were highlighted as major stakeholders in Jamaica's watersheds and an important partner in promoting environmental stewardship. An environmental forum was suggested as a way to increase public awareness and mobilize the religious organizations of the GRW.

Proposals for leadership of the seminar were solicited from five possible vendors. Two completed responsive proposals, and Ms. Carol Lawes was chosen on the basis of her experience and her detailed proposal that revealed her informed appreciation of both the philosophical and cultural sensitivity of the proposed activity.

The Seminar should contribute to sustainable watershed management through expanding dialogue among key community leaders on actions that residents can take to become more proactive stewards of their local environments.

The seminar had 175 participants from 4 religions. Multi-faith working groups developed action plans. A report was prepared and circulated to all participants.

3.6.8 *Finalize Content, Produce and Provide Environmental "Kits" to Youth and Community Organizations*

"Enviro Kits" for use by field officers to educate the general public were finalized, reproduced, and prepared for distribution. The kits contain information on the natural resources of watersheds, the State Agencies that promote watershed management, the environmental laws and regulations of Jamaica, the "It Haffi Legal" posters, 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 “Enviro Kits” are a joint product of NEPA, USAID, R2RW, Forestry Department, and BirdLife Jamaica, CWIP2, Jamaica Environment Trust (JET), National Water Commission (NWC), Jamaica Conservation Development Trust (JCDDT), Friends of the Sea, Water Resources Authority (WRA), and the National Solid Waste Management Authority (NSWMA). 120 kits are currently being produced, and the full contents of the kits are tabulated in Appendix 5. Distribution to youth and community organizations, project partners and church groups has seen the handing over of 120 kits to date. See Appendix 10 for details of distribution.

3.7 Gender Considerations

The objectives of this set of activities are to re-energize R2RW to pay adequate attention to achieving both gender equality and gender equity in all aspects of program implementation.

Work Plan Activity	Activity Description	Achievements During Reporting Period
3.7	Gender Considerations	
3.7.1	Evaluating Gender in the R2RW and Assessing Gender Considerations	This was done through multiple methods and culminated in the analysis done for the annual gender report.
3.7.2	Targeting and Tailoring Activities to Meet Gender Sensitive Needs	Draft questionnaire used with a women’s group to test gender equity. More work needed based on findings to refine questionnaire
3.7.3	Provide Annual Gender Report of Project Activities	Draft Annual Gender Report completed and circulated for review

3.7.1 *Evaluating Gender in the R2RW and Assessing Gender Considerations*

A questionnaire was designed and tested with stakeholders from Cambridge and Chester Castle (GRW). Participant observations were also carried out in both watersheds, of the level and type of participation in task force meetings and the type of leadership emerging from these structures. Some gender segmentation in sector – related leaderships but there is parity between men and women in overall numbers.

3.7.2 *Targeting and Tailoring Activities to Meet Gender Sensitive Needs*

In Cambridge, a questionnaire developed by R2RW staff was used with a women’s group to test gender equity. Staff concluded that more work is needed on the questionnaire before widespread application. This work will occur in the remaining months of Project Year 4.

3.7.3 *Provide Annual Gender Report of Project Activities*

A draft of the R2RW Annual Gender Report was completed and circulated for comment within R2RW staff. A second draft, incorporating collected comments, will be more widely circulated outside of R2RW.

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. 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 the Rio Grande Watershed Management Committee (RGWMC) that serves as the focal point for coordination and decision-making regarding Project-supported activities in the watershed. Similar to what occurred in the GRW, the RGWMC established four Task Forces to address compliance and enforcement, public awareness, water and sanitation, and land conservation.

Achievements under Component 1B during the reporting period are described in the six sections shown in the following box:

4.1	Development of the Rio Grande Watershed Management Committee
4.2	Improved Land Management in the RGW – Anchor Project # 3
4.3	Production and Marketing in the Rio Grande Watershed
4.4	Water and Sanitation Activities in the Rio Grande Watershed
4.5	Other Public Awareness Activities in the Rio Grande Watershed
4.6	Gender Considerations Incorporated into Project Activities

4.1 Development of the Rio Grande Watershed Management Committee

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 support the priority actions of the RGWMC while simultaneously diminishing R2RW's involvement in its management, operations, and decision-making.

Work Plan Activity	Activity Description	Achievements During Reporting Period
4.1	Development of the Rio Grande Watershed Management Committee	
4.1.1	Develop RGW Strategic Plan	Not started
4.1.2	Management Activities of the RGWMC	Land and Conservation Task Force Grants continue to be implemented at Coopers Hill, Rock Hall and Industry, and three new projects are being started in Moore Town, Chatsworth and Durham Gap as part of the local Anchor Project

Work Plan Activity	Activity Description	Achievements During Reporting Period
		<p>Water and Sanitation Task Force</p> <p>Final approval is imminent for a water supply project in Windsor.</p> <p>Work plan and budget developed for water quality monitoring</p> <p>Provides technical assistance and support to water supply and sanitation improvement projects.</p> <hr/> <p>Compliance and Enforcement Task Force</p> <p>Work done with Public Awareness Task Force to help people identify projects</p> <hr/> <p>Public Awareness Task Force</p> <p>Work done with PDC, 4-H Clubs, PEPA, and Port Antonio Theatre Group</p> <p>RGWMC played lead role in celebrating World Wetland Day</p> <p>Port Antonio Theatre Group commenced community training on the use of drama as a tool in education</p>
4.1.3	Develop Plan to Phase Out R2RW Support to RGWMC	<p>Developing and initiating R2RW's "exit strategy" has been successfully integrated into meetings and discussions of the RGWMC and its task forces.</p> <p>Developed detailed phase-out plan at workshop</p> <p>Training provided for the secretaries of each task force on meeting management and taking of minutes</p> <p>Participated in 2 training courses in Proposal Writing and Fundraising</p>

4.1.1 Develop RGW Strategic Plan

Not yet started.

4.1.2 Management Activities of the RGWMC

The RGWMC has made significant advances during the reporting period. The WMC is meeting regularly, and each of its four task forces have been developing and implementing their action plans under the umbrella of R2RW's incrementally diminishing support.

Land and Conservation Task Force

Grants continue to be implemented at Coopers Hill, Rock Hall and Industry, and three new projects are being started in Moore Town, Chatsworth and Durham Gap. Many timber and fruit trees have been planted.

Water and Sanitation Task Force

Grant-funded work is on-going on water supply systems in Cornwall Barracks and Comfort Castle. At Millbank, most of the physical work has been completed on household constructed wetlands, but grass has not yet been planted in the wetlands. Further meetings with participants were held to discuss issues preventing completion, and a work day was held in March. In Comfort Castle, materials were delivered, and a by-pass was constructed, but cooperation with NWC has decreased so the work has slowed.

New projects were also initiated. A sanitation project will provide a constructed wetland for the Coopers Hill Primary School. And final approval is imminent for a water supply project in Windsor.

Finally, a water quality-monitoring program is underway to evaluate water quality in the RGW and note problem areas. A work plan and budget have been developed. Chemical and bacteriological parameters are being monitored along with biological assessments. Dr. Hyslop from the UWI is assisting. Partner organizations include the Water Resources Authority (WRA), the NWC, CWIP, the Nature Conservancy (TNC), Public Health Department, and CASE. Sampling is done throughout the RGW with nine sampling points from Millbank to Burlington including Port Antonio.

Compliance and Enforcement Task Force

Work is being done with the Public Awareness Task Force to help people identify projects. Project proposals are being prepared. Liaison is also taking place with the ISCF to become familiar with each of the protected areas. Work is also taking place with the Ministry of Land and Environment to review agencies involved in compliance and enforcement in the Rio Grande Watershed. A Quarry Monitoring Committee for the Rio Grande has been established.

The Task Force would like to continue after the end of R2RW, and plans are underway for facilitation through NEPA.

Public Awareness Task Force

The Task Force has been very active in the upper RGW under the new Chair, Linette Wilks, including work in Windsor, Ginger House, and Millbank. The Chair serves important roles both as a community leader and as an organizational link to JCDDT's management of the Blue and John Crow Mountains National Park in the upper reaches of the RGW. In Ginger House, a park was started where children can interact with nature, and a work day was held in March. New plants were identified for the area, and a sketch and site plan will be prepared. A community clean-up was held in Millbank. A work day was held in Bellevue in March.

The PATF has also been working with the Portland PDC, the Jamaica 4-H Clubs, PEPA, and the Port Antonio Theatre Group to raise awareness widely in the lower RGW. Also, Enviro Kits were distributed to key agencies and individuals. The Action Boyz performed in the RGW in February 2004 in the communities of Windsor and St. Margaret's Bay.

In addition, the RGWMC played a lead role in celebrating World Wetlands Day in the watershed in February 2004. Media coverage was excellent, and the event was highlighted by performances by the Action Boyz.

4.1.3 Develop Plan to Phase out R2RW Support to RGWMC

On Thursday April 1, 2004 a one-day workshop was held with the RGWMC executive, key partner agencies, the SDC and Parish Council and community based organizations to develop a one year R2RW Phase-out Plan. 34 participants attended the meeting. The key action items are tabulated in Appendix 11. The RGWMC has met to review and discuss the findings as well as to develop preliminary strategies to implement the plan.

4.2 Improved Land Management Practices in the Rio Grande Watershed – Anchor Project # 3

The objectives of this set of activities are to:

- ✍ Support sustainable land management practices that will mitigate soil erosion and flooding and consequential damage to property and infrastructure;
- ✍ Improve ground cover and land permeability to improve water quality and quantity, protection of soil, maintenance and improvement of biodiversity, disaster mitigation, and creation of sustainable livelihood opportunities; and
- ✍ Increase the understanding of natural resource issues and conflicts in the RGW with a view to mitigation of potential hazards.

Work Plan Activity	Activity Description	Achievements During Reporting Period
4.2	Improved Land Management Practices in the Rio Grande Watershed – Anchor Project # 3	
4.2.1	Secure Buy-in From Stakeholders on Anchor Project	Anchor Project supported by R2RW, the Task Forces of the RGWMC, RADA extension officers, NEPA, JAS, PCA, PDC, CDCs, and the SDC
4.2.2	Hire Project Coordinator for Anchor Project #3	Everton Parks hired as Project Coordinator
4.2.3	Approve/Implement Three Community Agroforestry Projects	New projects initiated for Chatsworth Farmers Group, Durham Gap JAS Branch, Moore Town JAS Branch
4.2.4	Implement RGW Tree Planting Initiative	A tree planting initiative has been initiated in collaboration with Forestry Department and RADA.
4.2.5	Introduce and Promote Environmentally Friendly Cropping Practices	Minimum tillage, alley cropping and contour farming promoted.
4.2.6	Establish Other Land Stabilization Structures	Introduce “Individual Farm Plans” to assist with positive environmental and economic impacts

Work Plan Activity	Activity Description	Achievements During Reporting Period
4.2.7	Conduct Special Studies	Interim Report on the progress of the Sediment Budget Study of the Rio Grande Valley and St. Margaret's Bay has been submitted Report submitted from external consultancy on Identifying the Wood-boring Insects Infesting the Honduras Mahogany and the Blue Mahoe Plantations in Jamaica and Recommendations of Remedial Actions to Mitigate the Infestation Commenced study on the extent and hazard of land slippage/faulting in Dumphries.
4.2.8	Public Awareness to Support Anchor Project #3	Implementation linkages to the Portland PDC program for comprehensive public awareness in the lower RGW

4.2.1 Secure Buy-in From Stakeholders on Anchor Project

As reported in "Budgets and Implementation Plans for the Anchor Projects", report generated by R2RW, the implementation schedule was completed and placed in a gantt chart for the period January 2004 to June 2005 (See Appendix 12 for project activity details and progress). This report contains specific indicators, which will be used to assess the success of the Project as well as main activities and their associated costs reflected in a detailed budget. The primary responsibility for implementing the Anchor Projects lies with the Project Coordinator, however, he is supported by technical team members from R2RW, the Task Forces of the RGWMC, RADA extension officers and other support agencies including NEPA, Jamaica Agricultural Society (JAS), Pesticides Control Authority (PCA), Parish Development Committee (PDC), Community Development Committees (CDCS), and the Social Development Commission (SDC).

4.2.2 Hire Project Coordinator for Anchor Project # 3

After a competitive search, Everton Parkes was hired as the Project Coordinator for this Anchor Project. Mr. Parkes is a long-time Portland resident and comes to R2RW with a strong background and achievements in community-based agriculture and land husbandry. The Project works out of the local NEPA office and has succeeded in rapidly initiating new projects that build on earlier R2RW efforts in the area.

4.2.3 Approve/Implement Three Community Agroforestry Projects

The three on-going agroforestry projects at Industry, Rock Hall, and Coopers Hill will continue through a new planting season and three new agroforestry projects started in Moore Town, Chatsworth and Durham Gap. The projects include development of detailed farm plans, lining out assistance and training field days. Soil conservation measures in the projects including vegetative barriers; gully plugging, and integrated planting of crops. Crops include timber, fruit trees, and pineapple that are also employed as barriers. Plantains are being used as a nurse crop. Farmers donate all unskilled labour for each project.

The launch of the Anchor Project has benefited from the collective participation of Hugh Graham, Joseph Suah and Everton Parkes of R2RW who worked with each community on the finalization of proposal budgets and implementation plans. Each activity in the Anchor Project was discussed and recommended for approval by the Grant Selection Committee of the RGWMC.

4.2.4 Implement RGW Tree Planting Initiative

16,475 plants (1,353 fruit trees, 4,230 timber trees, 774 plantain suckers as shade crop and 10,118 pineapple suckers as vegetative contour barriers) were distributed in the Lower and Upper Rio Grande.

4.2.5 Introduce and Promote Environmentally Friendly Cropping Practices – Cropping Systems, Coffee, Root Crops

Practices promoted include minimum tillage on slopes, alley cropping and planting on the contour using pineapple barriers where appropriate. Training was also provided in fertilizer application, proper disposal of chemicals, care and establishment of fruit trees, fruit tree resuscitation and pruning. Communities benefiting from training days include Rock Hall, Industry, Moore Town, Chatsworth, Dumphries, Durham, Bowden Pen and Stony Hill. Coffee farmers were supplied with Honduras Mahogany for use as shade trees on coffee farms.

4.2.6 Establish Other Land Stabilization Structures

An innovative idea “Individual Farm Plans” was introduced to this Anchor Project under the initiative of the new Coordinator. These Plans are a formalized way of working with farmers to plan the integration of timber and cash crop planting with land stabilization structures and approaches in advance of farm development before planting takes place. Land stabilization structures include head trenches; check dams, gully plugs and vegetative barriers utilizing pineapple.

4.2.7 Conduct Special Studies

Wood Borer Study

The purpose of this study was to identify the wood boring insects infesting the Honduras Mahogany (*Swietenia macrophylla*) and the Blue Mahoe (*Hibiscus elatus*) plantations in Jamaica and to recommend remedial actions to mitigate the infestation. Dr. Luko Hilje, Senior Entomologist at the Plant Protection Unit, Tropical Agricultural Research and Higher Education Center (CATIE), Turrialba, Costa Rica conducted the study. The results indicated that damage to both Honduras Mahogany and Blue Mahoe plantations is very high (perhaps as high 75%), depending on their *age* and *location*, and is widespread all over Jamaica; borers are not the cause of the observed damage to Honduras Mahogany and Blue Mahoe; and damage seems to be due to *one* or *more* interacting biotic (tree age) and abiotic (physical) factors, perhaps exacerbated by fungal pathogens which may cause tissue disintegration (rotting).

Sediment Budget Study

An Interim Report on the progress of the Sediment Budget Studies of the Rio Grande Valley and St. Margaret’s Bay has been submitted to R2RW (See Appendix 13 for a summary). Accomplishments to-date include:

- ✍ River cross-sections – including surveying, sediment analysis, and Inman counts at 10 locations;
- ✍ Suspended sediment analysis for two reference locations;
- ✍ Erosion studies for all accessible roads in the RGW; and

- Partial completion of a landslide inventory – Comfort Castle, Moore Town, and Ginger House has been mapped.

Dumphries Landslide Study

A special study to analyze, determine and assess the factors contributing to land slippage/faulting in Dumphries, Portland and to make recommendations for amelioration of hazards related to the said land slippage/faulting commenced in late August.

Charles Town Ethnomedicine Study

A study to ascertain the feasibility from the perspective of the farmers and local entrepreneurs, of harvesting/cultivating, processing and packaging of herbs and herbal products with medicinal and health benefits, for the national and international market commenced during the period. The study is being undertaken by the Inter-American Institute for Cooperation in Agriculture in the Charles Town district of Portland.

4.2.8 Public Awareness to Support Anchor Project # 3

Significant progress was made working in cooperation with the Portland PDC to develop a comprehensive public awareness program for the lower RGW. An additional significant partner on environmental public awareness in the RGW is JCDT under their R2RW grant-funded project in the upper reaches of the RGW. This project and its current status are tabulated below.

Location	Objectives	Partners	Status in Reporting Period
Upper Rio Grande Valley including Blue and John Crow Mountains National Park	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	Forestry Department, The Nature Conservancy, SDC, Park Rangers, Police, NEPA	Conservation and watershed management education, using a variety of techniques, initiated in all 10 communities Completion date: 2 nd quarter 2005

4.3 Production and Marketing Activities in the Rio Grande Watershed

The objective of the following interventions is to increase the area of agricultural land brought under sustainable use through support to market-driven solutions to household challenges.

Work Plan Activity	Activity Description	Achievements During Reporting Period
4.3	Production and Marketing Activities in the Rio Grande Watershed	
4.3.1	Improved Crop Varieties	Three projects on-going Four new projects started as part of land and conservation Anchor Project 16,475 plants (timber, fruit, plantain and pineapple) planted. Improved varieties of plantain and banana were multiplied by the Banana Board Research Department and field demonstration plots to be set up.

Work Plan Activity	Activity Description	Achievements During Reporting Period
4.3.2	Livestock Improvement	Joseph Suah prepared a paper on the establishment of goat stud stations. The design suggested was successfully used by EJASP, and will be adopted by the anchor project.
4.3.3	Enterprise Development	New project started with Grand Valley Tours to link small businesses in the Rio Grande valley with markets

4.3 1 Improved Crop Varieties

In order to engage farmers in land stewardship and linking them to viable markets, R2RW is working with them to establish demonstration plots of disease-resistant bananas and plantain, develop organic farming, and establish expanded agro-forestry.

Location	Objectives	Partners	Status in Reporting Period
On-going Projects			
Rock Hall	Through agroforestry and land husbandry, private lands will be reforested, soil erosion minimized, and economic livelihood will be enhanced.	Rock Hall Community-based Organization RADA, FD, JAS	Project on-going. Timber and fruit trees planted, erosion barriers being constructed 27 farmers are participating Completion date: 1 st quarter 2005
Coopers Hill	Through agroforestry, land husbandry private lands will be reforested, soil erosion will be minimized and economic livelihood of residents will be enhanced	Coopers Hill CDC RADA, FD, JAS	Project on-going. Timber and fruit trees planted, erosion barriers being constructed Fourteen people received timber trees and 2150 pineapple suckers were planted Completion date: 1 st quarter 2005
Industry	Through agroforestry and land husbandry private lands will be reforested, soil erosion will be minimized and economic livelihood of residents will be enhanced	Industry Community-based Organization RADA, FD, JAS	Project on-going. Timber and fruit trees planted, erosion barriers being constructed 26 farmers are participating Completion date: 1 st quarter 2005
New Projects During Reporting Period			
Moore Town	Promotion of sustainable land management practices and creation of sustainable livelihoods. Establishing fruit and timber trees with plantains to provide economic return to farmers while trees grow. Pineapple and sugarcane as vegetative barriers on contours. Other physical barriers include check dams and gully plugs. The farmers group will be assisted with a tool pool. Training will be through promotional field days and individual farm visits.	Moore Town Jamaica Agricultural Society RADA, FD, JAS	One component of Anchor Project #3 Start date: March 2004 Completion date: December 2004

Location	Objectives	Partners	Status in Reporting Period
Durham Gap	<p>Establish and promote agro-forestry systems among farmers of Durham Gap and Dumphries to improve watershed health</p> <p>Expand improved land husbandry practices, and improved ground cover</p> <p>Establish fruit and timber trees with plantains to provide economic return to farmers while trees grow</p> <p>Pineapple and sugarcane used as vegetative barriers on contour. Other physical barriers include check dams and gully plugs</p> <p>Group to be assisted with tools and training through promotional field days and individual farm visits.</p>	<p>Durham Gap Jamaica Agricultural Society</p> <p>RADA, FD, JAS</p>	<p>One component of Anchor Project #3</p> <p>Project has benefited from the active participation of R2RW and Durham community finalizing budget and implementation plan</p> <p>Project discussed and recommended for approval by the Grant Selection Committee of the RGWMC</p> <p>Start date: March 2004</p> <p>Completion date: December 2004</p>
Chatsworth	<p>Establish and promote agro-forestry systems to improve watershed health</p> <p>Improved land husbandry practices, improved ground cover and training</p> <p>Establish fruit and timber trees with plantains for economic return to farmers while trees grow</p> <p>Use pineapple and sugarcane as vegetative barriers on contour. Other physical barriers include check dams and gully plugs</p> <p>Training through promotional field days and individual farm visits</p>	<p>Chatsworth Farmers Group</p> <p>RADA, FD, JAS</p>	<p>Component of Anchor Project #3</p> <p>Project benefited from the active participation of R2RW and the community to finalize budget and implementation plan</p> <p>Project discussed and recommended for approval by the Grant Selection Committee of the RGWMC</p> <p>Start date: March 2004</p> <p>Completion date: December 2004</p>

4.3.2 Livestock Improvement

Joseph Suah prepared a paper entitled “Towards a Stud Goat System” (See Appendix 14 for this paper and other selected brochures). Under the anchor project, three goat stud stations are to be established in the RGW using the design outlined in this paper, which follows a model successfully implemented by the EU’s Eastern Jamaica Agricultural Support Project (EJASP).

4.3.3 Enterprise Development

R2RW began working with Grand Valley Tours through grant funds to support and link several small, local enterprises with local, regional, and export markets.

Location	Objectives	Partners	Status in Reporting Period
New Projects During Reporting Period			
Rio Grande Valley	<p>Linking small businesses in the Rio Grande valley with markets</p> <p>Increase business skills and confidence in craft producers and hoteliers</p> <p>Increase income for craft producers, hoteliers and trail guides</p> <p>Increase ecotourism activity in and exposure of the Rio Grande Valley</p> <p>Training for craft producers, producing a catalogue of Valley products, distributing the catalogue</p> <p>Benefit 60 craft producers in the Valley presently producing crafts and transporting and marketing them in Ocho Rios</p> <p>Support watershed protection by strengthening the linkage between craft producers with the business community to generate income and promote sustainable utilization of natural resources</p>	<p>Grand Valley Tours</p> <p>60 craft producers</p> <p>Guest house operators</p> <p>Trail guides</p>	<p>Project discussed and recommended for approval by the Grant Selection Committee of the RGWMC</p> <p>The grant supports items 4.3.3 "Enterprise Development: Agro-processing, Eco-Tourism", and 7.1 "Grant fund management" of the R2RW Fourth Annual Work Plan.</p> <p>Start date: March 2004</p> <p>Completion date: December 2004</p>

4.4 Water and Sanitation Activities in the Rio Grande Watershed

The objectives of this set of activities were to improve watershed quality and livelihoods by improving access to drinking water and managing disposal of human waste in the watershed.

Work Plan Activity	Activity Description	Achievements During Reporting Period
4.4	Water and Sanitation Activities in the Rio Grande Watershed	
4.4.1	Implement Water Harvesting and Sanitation Project	Bellevue grant request denied due to lack of adequate current water supply
4.4.2	Implement Water Supply Projects	<p>Windsor – see table below</p> <p>Comfort Castle – see table below</p> <p>Cornwall Barracks – see table below</p> <p>Coopers Hill – see table below</p>
4.4.3	Solid Waste Interventions	Preliminary discussions were held with NSWMA and CWIP2 re solid waste Management Plan for the Parish and a collaborative plan will be developed.

Work Plan Activity	Activity Description	Achievements During Reporting Period
4.4.4	Water Quality Monitoring	Sampling started May 27 and continues in last week of every month. Replicate sample sent to SRC to validate results of regular lab. First report due October.

4.4.1 Implement Water Harvesting and Sanitation Project in Belleview

The Belleview District Development Committee submitted a proposal to the RGWMC for a project to install and use a constructed wetland. The RGWMC met to review the proposal, and did not recommend it for approval as an adequate water supply was not available to support the wetland.

4.4.2 Implement Water and Sanitation Supply Projects

Location	Objectives	Partners	Status in Reporting Period
On-going projects			
Millbank	Improve watershed conditions by improving wastewater management and establishing a demonstration of the use of water harvesting and constructed wetlands at 12 individual homes	Millbank Past Students' Association	Work is completed at 9 of the 12 planned households. It was decided that the remaining 3 systems will be installed in other communities by the W & S task force, due to the delay of installation in Millbank. This approach will improve the overall demonstration effect of the technology. Project completed.
Moore Town/ Seaman's Valley	Improve livelihoods by increasing the volume of potable water coming to the community from a spring source	Moore Town Maroon Council	Project completed.
Comfort Castle/Ginger House/ Millbank	Improve livelihoods by increasing the volume of potable water available at schools, individual houses, and the general community	Comfort Castle CDC	Project begun and approvals obtained. Entombment complete and pipe connection to the road established. Completion date: November, 2004
Cornwall Barracks	Improve livelihoods by increasing the volume of potable water available to the general community	Cornwall Barracks CDC	Project begun and approvals obtained Entombment 50% complete, materials are being transported to entombment site, and pipe has been procured. Completion date: third quarter 2004
New Projects During Reporting Period			
Windsor	Improve livelihoods by increasing the volume of potable water available to the general community. Water source is the spring previously upgraded under R2RW grant to the Moore Town Maroon Council described above.	Windsor Community Development Committee	NWC has generated a preliminary estimate to upgrade the distribution system. The W & S task force is working with the community to develop local ownership and seek alternate sources of funding for pipe. The project was not funded due to a budgetary shortfall during the period.

Location	Objectives	Partners	Status in Reporting Period
Coopers Hill	Build a flush toilet system using water harvesting and a constructed wetland disposal system Establish focal point for public awareness activities in RGW	Coopers Hill Primary School Parent Teachers Association	Project was approved and construction is in progress. Start date: March 2004 Completion date: September 2004

4.4.3 Solid Waste Interventions

Preliminary discussions have been had with NSWMA and CWIP2, with respect to the Solid Waste Management Plan for the Parish. R2RW will work in collaboration with CWIP2, NSWMA, and the Parish Council to help develop the Solid Waste Management Plan; our area of focus will be the middle and upper valley. Preliminary plans have been drafted for a solid waste sorting center in Fellowship.

4.4.4 Water Quality Monitoring

In preparation for the development of a water quality monitoring program focused on the RGW, meetings were held with The Nature Conservancy (TNC) that has a large presence in Jamaica and a management role for the Blue and John Crow Mountain National Park in the upper reaches of the RGW. Following discussions, a joint proposal was drafted based on the achievements of CWIP and CWIP 2 in community-based water quality monitoring, the Blue Flag program, and using data to enable better community decision-making. Monitoring commenced on May 27, 2004 and continues during the last week of every month. NEPA, WRA, citizens of Moore Town and R2RW personnel conduct sampling. The SRC has received replicate samples in September for confirmatory analyses as a part of the quality assurance of this programme. The first report is scheduled for completion in October.

4.5 Other Public Awareness Activities in the Rio Grande Watershed

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 Reporting Period
4.5	Other Public Awareness Activities in the Rio Grande Watershed	
4.5.1	Share Lessons Learned in GRW with Participants in RGW	GRWMC and RGWMC to jointly participate in project with Pesticide Control Authority (PCA) on "Reducing Child Poisoning in Great River and Rio Grande Watersheds"
4.5.2	Work with CWIP 2 and EAST Projects to Promote Portland as a Green Destination	This work is underway and the PATF is working with partner agencies to prepare communities to participate in Green Destination Management Group.
4.5.3	Participate in Fairs, Expos and Community Environmental Fora	Project participated actively in World Water Day events and the CASE Career Fair and Portland Agricultural Expo New work with PEPA and Port Antonio Theatre Group

Work Plan Activity	Activity Description	Achievements During Reporting Period
4.5.4	Plan and Implement Community Education Program for the Lower Rio Grande Valley	Project launched in partnership with the Portland PDC to develop and implement a Community Education and Public Awareness Program in the lower valley R2RW covering only 65% of total program costs, remaining from resources mobilized by the PDC 12 Community animators trained
4.5.5	Provide Environmental “Kits” to Youth and Community Organizations	Kits have been prepared and widely distributed Linkages established to Jamaica 4-H Clubs for an “Environmental Challenge Program” including ‘Trash to Cash’, organic farming, and a national tree planting drive.

4.5.1 Share Lessons Learned in GRW with Participants in RGW

In addition, an activity unanticipated in the FAWP was identified, developed, and initiated to share actions between the GRW and the RGW. Both WMCs will benefit from a R2RW grant to the Pesticides Control Authority (PCA) for “Reducing Child Poisoning in Great River and Rio Grande Watersheds”. The activity is aimed at reducing poisoning among children aged 1-5 in the GRW and RGW through increased public awareness. The Project will be conducted between March 2004 and May 2005. It will involve the following:

- ✍ Increased awareness among parents and caregivers. This will be done by preparing and printing a comic book and posters for 12 health centers and making presentations at pre and post natal clinics;
- ✍ Sensitizing children to the dangers of pesticides and household chemicals. This will be done through distribution of leaflets, bookmarks and posters of pesticides and household chemicals for use in schools, health centers, farm households and 4-H clubs;
- ✍ Measurement of project effects. This will be done through collecting and analyzing poison data in the area quarterly.

4.5.2 Work with CWIP2 and EAST Projects to Promote Portland as a Green Destination

R2RW participated in meetings leading toward an award programme for communities in support of the designation of Portland as a Green Destination under the EAST project. Discussions have led to the adaptation of the Green Village program to the Rio Grande as a community competition on the “greenest” destination. This has subsequently been adapted and designed as the ‘Clean and Green Campaign’.

4.5.3 Participate in Fairs, Expos and Community Environmental Fora

World Wetlands Day

Commemoration of Wetlands Day events was held at the Port Antonio Marina RGW on February 2, 2004. The event was well attended by partners, schools and communities. In addition to formal presentation on Wetlands, the two drama resource groups (Action Boyz and Port Antonio Theatre Group) performed in the communities of Windsor and St. Margaret's Bay.

CASE Career Fair

R2RW will mount a display at CASE Career Fair on April 2, 2004. Emphasis is on improving awareness of Jamaica's environmental laws and sustainable agricultural practices. Candidates for internship in the Summer 2004 will be interviewed at the fair.

Schools Environment Program (SEP) and Portland Environment Protectors (PEP) club Program

The Portland Environmental Protection Association (PEPA) has been a local leader in community environmental programs for many years. During the reporting period, R2RW agreed to support their Rio Grande Valley School's Environmental Education Program. This Program enrolls and supervises the schools from the Lower Rio Grande Watershed in the highly successful Schools Environment Program (SEP) and Portland Environment Protectors (PEP) club program. In this way, the Program increases the level of environmental awareness among staff and students in the watershed and encourages students to implement projects to mitigate or eliminate environmental degradation in their schools and communities. Fourteen (14) schools in the lower Rio Grande Valley are specifically targeted in the proposal.

The specific objectives of the effort with PEPA are to:

- ✍ Increase the level of environmental awareness among staff and students in the RGW by expanding the number of schools in the SEP and PEP club programs;
- ✍ Promote the integration of effective and sustainable environmental practices into all aspects of school life in the RGW;
- ✍ Increase the level of environmental awareness among students and engender stewardship of watershed and other environmental resources;
- ✍ Increase the appreciation of Portland's biodiversity, endemic species, and other natural resources;
- ✍ Increase knowledge of the consequences of individual and community actions on the environment; and
- ✍ Strengthen PEPA's capacity to adequately supervise schools, report to donors, raise funds, write proposals, and undertake organizational management.

Community drama with Port Antonio Theatre Group (PATG) is an additional entry point to community awareness-building emerged in response to performances of the Action Boyz in Portland. As community drama is clearly emerging as an important means of communication, R2RW agreed to support the increased involvement of the Port Antonio Theatre Group (PATG) in public awareness. See Appendix 15 for a summary of the proposal submitted to R2RW.

4.5.4 Plan and Implement Community Education Program for the Lower Rio Grande Valley

This project funded under a grant is aimed at addressing environmental degradation within the lower Rio Grande Watershed that has resulted from deleterious practices (slash and burn agriculture and deforestation), water pollution (dumping of solid waste in rivers and streams and contamination from agricultural chemical residue run-off). The project promotes environmental sustainability by developing and implementing a Community Education and Public Awareness Program geared at the promotion and adoption of practices and activities that will engender community stewardship of the environment. The project has five programmatic themes:

- ✍ Environmental stewardship;
- ✍ Institutional capacity-building of key partners and communities;
- ✍ Community-based environmental competition;
- ✍ Funding for community-based environmental activities; and
- ✍ Building strong neighborhoods through dialogue utilizing the “Study Circle Concept”.

Twelve community animators were trained and have subsequently utilized this training in 20 communities in the lower Rio Grande WMU.

4.5.5 Provide Environmental “Kits” to Youth and Community Organizations

Two sets of kits have been produced and distributed. A direct R2RW link to national youth programs was established through the Jamaica 4-H Clubs to start an “Environmental Challenge Program”. More detailed information is presented in section 3.6.8.

4.6 Gender Considerations Incorporated Into Project Activities

R2RW is working to increase both gender equality and equity in all Project Activities. The activities described in the following section are intended to advance the Project and its partners in this direction.

Work Plan Activity	Activity Description	Achievements During Reporting Period
4.6	Gender Considerations Incorporated Into Project Activities	
4.6.1	Evaluating Gender in the R2RW and Assessing Gender Considerations	Methodology included participant observations of social as well as gender equity factors in watershed management. A questionnaire was tested in Moore Town and Windsor.
4.6.2	Targeting and Tailoring Activities to Meet Gender Sensitive Needs	Analysis done for the annual report indicates that more needs to be done in RGW to target spouses of male farmers.
4.6.3	Provide Annual Gender Report of Project Activities	Draft gender report in circulation for comments

4.6.1 Evaluating Gender in the R2RW and Assessing Gender Considerations

Gender considerations form a part of the social equity assessment conducted through participant observation. Task force meetings, training, workshop and leadership in Watershed Management were the main areas focused on.

4.6.2 Targeting and Tailoring Activities to Meet Gender Sensitive Needs

In the RGW, more need to be done to involve spouses of male farmers in land conservation field days and agro forestry activities.

4.6.3 Provide Annual Gender Report of Project Activities

As described earlier, the 2nd Annual Gender report was prepared and submitted to USAID for approval.

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

Introduction

Considerable progress continues to be made by R2RW 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:

- ✍ Multiple environmental laws and authorities;
- ✍ Fragmented services, with numerous persons involved in enforcement;
- ✍ Unavailability of existing laws to professionals and the population;
- ✍ General impression that compliance and enforcement is ineffective;
- ✍ Most enforcement actions are under the Litter Act (now the NSWMA) Act and the Mines and Quarries Act;
- ✍ Significant regulatory authority rests with Parish Councils – but some 39 centralized state line agencies tend to disregard them; and
- ✍ Disproportionate blame is placed on communities for breaches of environmental regulations.

Based on this understanding obtained through extensive study and discussions, R2RW focused activities in the three broad areas shown below:

5.1	Compliance and Enforcement – Nationally
5.2	Compliance and Enforcement - Great River Watershed
5.3	Compliance and Enforcement - Portland, with Emphasis on the Rio Grande Watershed

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 Reporting Period
5.1	Compliance and Enforcement – Nationally	
5.1.1	Sensitization of Magistrates, Other Court Personnel & Senior Agency Personnel	A CD of the proceeding of previous Magistrates Symposia including the relevant laws, and presentations at the symposia was produced and distributed. Two more symposia held for Clerks and Deputy Clerks of the Court.

Work Plan Activity	Activity Description	Achievements During Reporting Period
5.1.2	Training of Enforcement Officers	R2RW worked in partnership with MIND and ENACT to develop four training courses on compliance and enforcement of environmental and planning legislation. The target group is 1,570 GOJ enforcement officers(100 Enforcement Managers, 1189 Enforcement Officers, 281 Game wardens, and other community leaders) For each course, MIND prepared a handbook of resource materials, guidelines for facilitators, and a participant workbook. R2RW partnered the Legal Services Division of NEPA to undertake training in all four courses through MIND. Select courses will also be implemented in the watersheds R2RW is working in.
5.1.3	Identify Baseline on Environmental Cases Convicted in Court	Norman Manley Law School Summer Interns prepared a draft 'Compendium of Environmental Cases'
5.1.4	Develop & Distribute Pocket Guide to Environmental Laws in Jamaica	Distribution of the "Pocket Guide on Environmental Regulations in Jamaica" developed during Project Year 4 continued. 1,000 copies were distributed and a second printing of 1,000 copies was completed and these were also distributed. Based on feedback, R2RW has compiled needed revisions for incorporation into a 2 nd edition.

5.1.1 Sensitization of Magistrates, Other Court Personnel & Senior Agencies Personnel

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. During the reporting period, two symposia were held for Clerks of Courts, Deputy Clerks of Courts, and Compliance and Enforcement Managers. These were a continuation of the popular and successful symposia held during Project Year 3.

5.1.2 Training of Enforcement Officers

Building the capacity of official enforcement officers requires an intense, focused, and long-term approach. R2RW has agreed to work in partnership with MIND and ENACT to meet this challenge by developing four training courses on compliance and enforcement of environmental and planning legislation. These courses build on the recognition across GOJ agencies of the need for a formal training program in compliance and enforcement on and the work of a NEPA-led multi-agency participatory process to develop the training courses. The potential target groups for these training courses are the 1,570 enforcement officers presently in the Government service: 100 Enforcement Managers, 1189 Enforcement Officers, and 281 Game wardens. In addition, there is another audience estimated at 200 community leaders who would be interested in and would benefit from a tailored course for community leaders.

An earlier Situation Analysis revealed that some material for training in enforcement exists, but it is not adequate. In addition, currently available courses in environment and sustainable development are not tailored specifically to this target audience. An opportunity for

institutionalization exists at MIND and other tertiary institutions where trained and experienced trainers and facilitators are available. The following courses were developed:

- ✍ EC01 - Introduction to Resource Systems, Environmental Legislation and Planning Legislation;
- ✍ EC02 – Techniques and Procedures for Enforcement and Compliance of Environmental and Planning Legislation;
- ✍ EC03 – Personal Competencies for Enforcement and Compliance; and
- ✍ EC04 - Enforcement and Compliance of Environmental and Planning Legislation for Community Leaders.

For each course, MIND has delivered a handbook of resource materials, guidelines for facilitators, and a participant's workbook. The development of these courses was jointly financed by R2RW and ENACT. ENACT was responsible for the delivery of an initial EC01 Course, and R2RW for EC02, ECO3, ECO4, and the continuation of EC01.

5.1.3 Identify Baseline on Environmental Cases Convicted in Court

The NEPA Legal Branch agreed with R2RW to develop a “Compendium of Environmental Cases”, and the first meeting of the planners was held. NEPA Legal used Interns to prepare the compendium. Cases for inclusion were suggested by several agencies. The compendium sets out environmental, wildlife and natural resource cases from Jamaica and the Caribbean in a format with the charge, relevant legislation, summary details of the case, decision and where relevant a commentary are presented. See Appendix 16 for a sample case from the compilation.

5.1.4 Develop & Distribute Pocket Guide to Environmental Laws in Jamaica

1000 copies of the Pocket Guide to Environmental and Planning Laws of Jamaica were distributed during Project Year 3. In response to high demand, an additional 1000 copies were prepared and distributed in a second printing.

Based on feedback to date, R2RW will be supporting the preparation and distribution of a second edition of the Pocket-Guide. Revisions were compiled and incorporated by legal students working as summer interns.

5.2 Compliance and Enforcement - Great River Watershed

Year 4 activities continue to focus on the Compliance and Enforcement Task Force of the GRWMC. R2RW works with the Compliance and Regional Services (CRS) Division of NEPA and the Task Force to reach consensus on the continuity of the partnership after R2RW is finished. In the watershed, the Task Force has identified solid waste as a key problem, which they can address. They began to identify priority communities and “hotspots” and have directed GOJ and R2RW resources toward their cleaning. Cambridge was considered the major hotspot, and the work plan reflects this consideration. The cleaning and greening of Cambridge was developed as an Anchor Project, and significant achievements have already been made.

Work Plan Activity	Activity Description	Achievements During Reporting Period
5.2	Compliance and Enforcement - Great River Watershed	
5.2.1	Partnership and Coordination	Chair selected and planning initiated. The sub-Committee reviewed the recommendations from the Leon Hopkins study. Parish meetings are currently being organized through the C&E Division of NEPA.
5.2.2	Watershed-level Environmental Training and Sensitization Program	This activity is awaiting the courses from MIND
5.2.3	Cleaning and Greening of Communities and 'Hotspots'	Community clean-ups were conducted at Ramble Pond, Cedar Grove, Belmont, Chester Castle, Seven Rivers, Cambridge, York, Dundee and Ranch Hill.
5.2.4	Fostering Community Enforcement	New interest from community members to support enforcement at the community level

5.2.1 Partnership and Coordination

Charles McKenzie of NEPA's Compliance and Regional Services Division was selected to chair this activity, and development of detailed tasks is underway. Charles supports Andrea Steele of the same division. He has been coordinating a review of the Leon Hopkins's Report that presents an inventory of agencies involved in C&E activities in the Great River Watershed. This Sub-Committee has completed its review of the study

5.2.2 Watershed-level Environmental Training and Sensitization Program

No action was taken pending development of training courses by MIND.

5.2.3 Cleaning and Greening of Communities and "Hotspots"

Community clean-ups were conducted at Ramble Pond, Cedar Grove, Belmont, Chester Castle, Seven Rivers, Cambridge, York, Dundee and Ranch Hill. The Community Clean-ups also provided training in composting and constructed garbage receptacles. These clean-ups were done in partnership with NSWMA, and average over 35 participants per activity.

Of note is the involvement of community members in clean-ups outside their own community.

5.2.4 Fostering Community Enforcement

The project started with an "Enforcement Strategy" but had to review this, as the KAP undertaken by the project identified the need for a "more awareness" strategy. The public awareness campaign is showing success, and pressures are coming from the community for state agencies to be more involved in enforcement, and for recognition of the role community leader can lead in enforcement activities.

5.3 Compliance and Enforcement - Portland with Emphasis on the Rio Grande Watershed

This section is focused on Portland, "with emphasis on the Rio Grande Watershed" rather than just on the RGW. R2RW is working closely with the Portland PDC, a strong interagency group

developed with support from ENACT, to encourage greater compliance and enforcement of environmental laws at the watershed and community levels.

Work Plan Activity	Activity Description	Achievements During Reporting Period
5.3	Compliance and Enforcement - Portland with Emphasis on the Rio Grande Watershed	
5.3.1	Partnership & Coordination	A workshop to share information on roles and responsibilities of agencies involved in public awareness and compliance/enforcement in Portland took place and identified a number of issues, community members were “bumping up against
5.3.2	Watershed-level environmental training and sensitization program	No progress during reporting period. This activity will commence in October using EC04 developed by MIND.
5.3.3	Quarry Monitoring Committee	Assessment of agencies involved in quarry monitoring completed. The Mines and Quarry Division of the MLE has established a Quarry Monitoring Committee for the Rio Grande. Meetings commenced in June.
5.3.4	Disaster mitigation	Targeted community activities supported this planned action. Technical guidelines document prepared.

5.3.1 Partnership & Coordination

A workshop to share information on roles and responsibilities of agencies involved in public awareness and compliance/enforcement in Portland took place. Community members identified several issues that they were “bouncing-up” against that were outside of their capacity to find solutions for. An Action Plan was developed to assist the stakeholders to advance this agenda.

5.3.2 Watershed-level Environmental Training and Sensitization Program

No progress was made pending development of training courses by MIND.

5.3.3 Quarry Monitoring Committee

As assessment of agencies involved in quarry monitoring was completed with the draft product to be circulated. The Mines and Quarry Division of the MLE has named a Quarry Monitoring Committee for the Rio Grande. The committee began meeting in June

5.3.4 Disaster Mitigation

Community clean up and drain clearing workdays helped to mitigate against recurrent flooding due to debris blocked channels during heavy rains. The effects of these activities were most pronounced during Hurricane Ivan. The technical document prepared provided useful information for communities and individual householders to minimize destructive effects of high and rain during storm events.

Other Activities

The Community Logistics Coordinator's role in the Community Clean-ups was extended to the RGW. Clean-ups were undertaken in Ginger House, Bellevue, Windsor, Stony Hill, Snow Hill, Millbank, Moore Town, Belevue, Naylor Hill and Windsor. Support for this activity has come from NSWMA, and the SDC. Composting has taken place in Ginger House and Windsor. Over 50 persons participate in each clean up workday.

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

Introduction

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) certain responsibilities - coordination, oversight, and regulatory - must remain with GOJ agencies. The Sustainable Watersheds Branch (SWB) of NEPA, in particular, is expected to lead policy, information management, and monitoring of watersheds. However, many aspects of watershed management are best led by local government, NGOs, CBOs, or private sector entities. 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 the reporting period are described in the following sections.

- 6.1 Strengthening of the Watershed Management Capacity of NEPA
- 6.2 Training for Skills Development
- 6.3 Local Watershed Management Committee (LWMC) Development
- 6.4 Policy and Legislation
- 6.5 NIWMC Activities
- 6.6 Improve Sanitation Management Practices – Anchor Project # 4
- 6.7 Transfer Approaches, Methodologies and Lessons to Key Partners and Stakeholders
- 6.8 Public Awareness

6.1 Strengthening of the Watershed Management Capacity 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 Reporting Period
6.1	Strengthening of the Watershed Management Capacity of NEPA	
6.1.1	Team Building in the Sustainable Watersheds Branch	Retreat held in November 2003 Development of Branch Charter
6.1.2	Finalize Equipment Specifications and Procurement	Completed with purchase of GPS units in August.
6.1.3	Update Sustainable Watersheds Branch Watershed Database	Not completed

Regular meetings were held between R2RW and the SWB to ensure information exchange, partnership, and capacity building.

6.1.1 Team Building in the Sustainable Watersheds Branch

R2RW proposed to facilitate two team-building retreats with SWB during Project Year 4. In November 2003, R2RW and the SWB conducted one of these proposed staff retreats. The objectives of the two-day retreat were to assist the SWB in:

1. Reviewing the achievements and current status of the SWB;
2. Examining how SWB staff accept and understand their corporate role in NEPA; and
3. Confirming the staff's long-term vision, understanding, and commitment to the SWB, NEPA, and watershed management in a Branch Charter.

In September 2004 the SWB was merged with the Coastal Zone Management Branch to form the Integrated Watersheds and Coastal Zone Branch.

6.1.2 Finalize Equipment Specifications and Procurement

This activity was completed with the purchase of Global Positioning System equipment in August.

6.1.3 Update Sustainable Watersheds Branch Watershed Database

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. The Coordinator of the Database, Lisa Kirkland, was one-year Study Leave between September 2003 and August 2004 hence this item was put on hold. Mrs. Kirkland is now seconded to R2RW so activity is expected to resume.

6.2 Training for Skills Development

The objectives of this set of activities are to provide to SWB and other government officials with a set of skills required to facilitate watershed improvement in cooperation with partners.

Work Plan Activity	Activity Description	Achievements During Reporting Period
6.2	Training for Skills Development	
6.2.1	Implement Course in Meeting Management	Three training courses held. 14 individuals were trained on January 13 in Port Antonio, Portland, 41 were trained in Montego Bay, St. James on January 29, 2004 and 38 in the Rio Grande on September 29, 2004.
6.2.2	Implement Course in Proposal Writing Skills	Workshops held in the GRW and RGW. This course was also offered to the 5 SDC regions at the time of APM training
6.2.3	Implement Course in Rapid Appraisal Techniques for Watershed Status	Not yet planned
6.2.4	Implement Course in Facilitation Skills	Eight 2-day courses held in Basic and Advanced Facilitation techniques and two Community Action Planning Workshops held.

Work Plan Activity	Activity Description	Achievements During Reporting Period
6.2.5	Implement Course in Fundraising	Workshops held in both watersheds. Great River WMU April and Rio Grande WMU in May. This course was also offered to the 5 SDC regions at the time of APM training

6.2.1 Implement Course in Meeting Management

Two one-day training workshops were held on **Meeting Management, Developing Agendas and Minutes Taking**. Fourteen participants attended the workshop Tuesday January 13, 2004 at the NEPA Portland office, Port Antonio Portland and the workshop on Thursday January 29, 2004 was attended by 41 participants. Thirty eight persons representing wider partners were trained in the Rio Grande in September 2004. The trainer was Ms. Claire Spence, the Deputy Director of the Office of General Development (USAID) and a Management Consultant with over 15 years of experience in management and development training.

The workshop targeted the officers of the RGWMC, its Task Forces and key R2RW partner agencies. The workshop sought to communicate important methods and skills necessary to conduct successful meetings and record the proceedings in a standard professional manner. The workshop therefore aimed to both promote the efficiency of RGWMC activities and enhance the capacity of its collaborating stakeholder organizations operating in the watershed.

6.2.2 Implement Course in Proposal Writing Skills

A One-day workshop on Proposal Writing was held in Montego Bay and Port Antonio with participants drawn from NEPA, other government agencies, community based organizations, and NGOs. The workshop was also offered to officers of the 5 SDC regions at the time of APM training. The trainers for the workshop were Mark Nolan (R2RW) and Marline Lewis (EFJ). The course covered proposals as an extension of organization objectives, and a session on the "Nuts and Bolts of Proposal Components". Participants were also taken through a practice session where proposals were outlined and evaluated. The course received an enthusiastic response from participants.

6.2.3 Implement Course in Rapid Appraisal Techniques for Watershed Status

This activity did not happen.

6.2.4 Implement Course in Facilitation Skills

R2RW and CWIP2 jointly sponsored a series of workshops as follows

1. A residential Seminar on Basic Group Facilitation Techniques (Level – 1) in Advanced Participation Methods (APM) for 35 participants at the at the Golden Seas Beach Resort, Oracabessa, St. Mary, from March 23-24, 2004;
2. A residential Advanced Skill Building Seminar in Group Facilitation Methods and Techniques (Level – 2) in Advanced Participation Methods (APM) for 25 participants at the at the Golden Seas Beach Resort, Oracabessa, St. Mary, from Thursday, March 25 to Friday, March 26, 2004;

3. A Community Action Planning Workshop (APM 3 demonstration) for Boundbrook in Portland for approximately 30 participants on March 31, 2004;
4. A Community Action Planning Workshop (APM 3 demonstration) for Cambridge, St. James for approximately 25 persons on April 3, 2004;
5. A residential Seminar on Basic Group Facilitation Techniques (Level – 1) in Advanced Participation Methods (APM) for 38 participants at the Golden Seas Beach Resort, Oracabessa, St. Mary, from May 25-26, 2004. Participants were drawn mainly from the five SDC Regions, NEPA, JSIF, Portland Parish Council, NSWMA, as well as CWIP2 and R2RW Staff.
6. A residential Advanced Skill Building Seminar in Group Facilitation Methods and Techniques (Level – 2) in Advanced Participation Methods (APM) for 35 participants at the at the Golden Seas Beach Resort, Oracabessa, St. Mary, from May 27 – 28, 2004;
7. A residential Training of Trainers in Basic Group Facilitation Techniques (Level – 1) in Advanced Participation Methods (APM) for 25 participants at the at the Golden Seas Beach Resort, Oracabessa, St. Mary, from May 31 – June 3, 2004;
8. A demonstration of APM techniques to over 30 USAID Staff, and other USAID project implementers on June 4, 2004.

The courses were initially conducted under the leadership of Dr. Gary Forbes of ARD with support from Trevor Spence. Since then the trainers have been drawn from the pool certified under the Trainer of Trainers initiative. Manuals were developed for Basic and Advanced Facilitation Methods courses as well as for the One-Day Community Action Planning Workshops. Participants included staff from NEPA, Social Development Commission (SDC), Forestry Department, RADA, and both the R2RW and CWIP2 Projects.

Since then Trevor Spence has led the following activities:

1. Training in APM, Fundraising, Project Writing, and Registration of Groups for Community Development and Management Staff of SDC Region 3 (Western Region), covering St. James, Hanover, Westmoreland, and Trelawney held at the Holiday Inn, Montego Bay, for 38 participants from July 6-9, 2004. Participants from MIND also attended;
2. Training in APM, Fundraising, Project Writing, and Registration of Groups for Community Development and Management Staff of SDC Region 2, covering Portland, St. Ann, and St. Mary, held at Breezes, Runaway Bay, for over 40 participants from July 27-30, 2004. Participants from MIND also attended;
3. Community-based Action Planning Workshops held for Moore Town, Fellowship, Prospect, Charles Town, and Snow Hill in August and September. Each had 20-45 participants.

Subsequently the SDC has agreed to sponsor their other three regions, with CWIP2 and R2RW Project providing the time of Trevor Spence, Mark Nolan, and Patti Bedasse, materials, certificates, some transportation and logistic support. The following training has taken place to date, under this agreement:

1. Training in APM, Fundraising, Project Writing, and Registration of Groups for Community Development and Management Staff of SDC Region 4, covering Manchester, St. Elizabeth, and Clarendon commenced at the Gulf View Hotel, Mandeville, for over 36 participants on

September 7. The warning for Hurricane Ivan interrupted this training on September 8. The completion of this training is now set for November 17 – 19.

6.2.5 Implement Course in Fundraising

One-day workshop on Fundraising Skills was held in Montego Bay and Port Antonio by participants from NEPA, other government agencies, community based organizations, and NGOs. The workshop was also offered to officers of the 5 SDC regions at the time of APM training. The trainers for the workshop were Effie McDonald (Canada Green Fund), Trevor Spence (R2RW) and Yolanda Hill and Karyll Johnston (USAID). Case studies of successful local fundraising efforts were made by Jill Williams of the Montego Bay Marine Park on the annual Marine Park Ball, and by Calvin Brown of the Jamaica 4-H on the annual “Nyamins and Jammins” fundraising event. Information on local and international donors was presented along with criteria and application forms for common donors.

6.3 Local Watershed Management Committee (LWMC) Development

The objectives of this set of activities were to contribute to the national dialogue regarding the role, functions, and legal status of WMCs in Jamaica.

Work Plan Activity	Activity Description	Achievements During Reporting Period
6.3	Local Watershed Management Committee (LWMC) Development	
6.3.1	Continue Skill-building Training Courses	Leadership Training Course – November 5, 2003
6.3.2	Study to Develop Linkage Between LWMCs and PDCs	Review of processes of local planning and governance undertaken within Jamaica, particularly how these processes interface with the establishment of Local Watershed Management and/or Local Forestry Management Committees. Task design coordinated with CWIP2, SDC, and NEPA. Report being finalized.
6.3.3	Continued Networking of LWMCs	Networking of the GRWMC and RGWMC done through sharing of information and cross visits to program events.
6.3.4	Exchange Visits Between and Within Watersheds	GRWMC AGM – October 22, 2003 World Wetlands Day – February 2, 2004 Joint Portland Compliance & Enforcement and Public Awareness Task Force Workshop – April 6, 2004 Youth and the Environment Conference – July 13-15, 2004 Cambridge CDC visited Boundbrook - August 6, 2004.
6.3.5	Ensure the WPA Revision Clarifies Role of LWMCs	Workshop held and report completed. Support now given through a STTA for development of a NEPA Act.
6.3.6	Articulate Incentives for LWMCs	Commenced contract with Denis Pantin to undertake CANARI Incentives Study

6.3.1 Continue Skill-Building Training Courses

Officers and members of both the RGWMC and the GRWMC participated in the four training initiatives described in Section 6.2 above. Five management level staff members of NEPA were sponsored to attend a one-day Leadership Training Course on November 5, 2003 at the Jamaica Conference Centre.

6.3.2 Study to Develop Linkage between LWMCs and PDC

In November 2003, a three-person consultant team was mobilized by R2RW to review the different processes of local planning and local governance being undertaken within Jamaica. Specifically, this team was asked to describe how these processes interface with the establishment of Local Watershed Management and/or Local Forestry Management Committees. The design of this task was coordinated with CWIP 2, and it benefited from input from the SDC and NEPA. This review will highlight the different approaches undertaken at the local level, and recommend how LWMCs should interface with other on-going local governance mechanisms and processes. Specifically, the task will help develop the link between LWMCs and other mechanisms for local government reform including local sustainable development planning and Parish Development Committees. The parish of Portland will be used as a case-study example as the working relationship between the Portland PDC and the RGWMC is particularly close and cooperative. The report is being finalized.

6.3.3 Continued Networking of LWMCs

The networking of participants from the GRWMC and RGWMC was done through sharing of information and cross visits to program events such as the Green Village Awards Ceremony in the GRW and a joint Compliance and Public Awareness Task Force workshop in the RGW.

A major networking conference of participants from LWMCs from across Jamaica is planned for the next reporting period.

6.3.4 Exchange Visits Between and Within Watersheds

Five (5) exchange visits were held during the reporting period as follows:

GRWMC AGM – October 22, 2003

Ten members of the RGWMC executive were invited as observers to the annual general meeting of the GRWMC. After the meeting the representatives from the RGW were given a tour of selected field projects in the area led by the chairman of the GRWMC, Don Streete.

World Wetlands Day – February 2, 2004

Seven members of the Action Boyz group participated in World Wetlands Day activities in Port Antonio on February 2nd. The group also spent the two additional days visiting and performing in the Windsor and St. Margaret's Bay in the watershed. Some 16 communities were exposed to the performances of the Action Boyz during their three day visit.

Joint Portland Compliance & Enforcement and Public Awareness Task Force Workshop – April 6, 2004

This workshop was held to support issues related to state agency support of community efforts to improve compliance and public awareness activities surrounding sustainable watershed management issues. Two members of the GRWMC were invited to participate in this activity.

Youth and the Environment Conference

Sixteen young persons from the Rio Grande attended this 3 day residential conference which featured presentations, an exhibition and field excursions.

Community Exchanges

Cambridge CDC visited Boundbrook on August 6, 2004 to view drain clearing activities and to exchange community development ideas.

6.3.5 Ensure the WPA Revision Clarifies Role of LWMCs

A workshop was held in October 2003 with 27 representatives of government agencies, private sector, civil society and international donors and a report completed regarding required revisions to the Watershed Protection Act (WPA). The workshop report, "**Preliminary Review of the Watershed Protection Act**" supported by the Legal Services Division of NEPA and the R2RW Project represents the start of a process to update the Watershed Protection Act, and development of a comprehensive Act for watersheds in Jamaica. More specifically, the Workshop started the process of reviewing the current context/status of the Watershed Protection Act; building consensus on stakeholders' vision for the legal framework governing watershed protection and management; and agreeing on the Strategic Directions and the Action Agenda to realize this vision. The workshop process utilized Advanced Participation Methods developed by Associates in Rural Development, Inc. Trevor Spence of the R2RW Team, facilitated the one-day process. The report provided a chronology of activities that resulted in the identification of strategic directions with illustrative examples of corresponding action that will assist the Legal Division of NEPA to continue the process of revising the Watershed Protection Act. Subsequently NEPA has decided to promulgate a NEPA Act that will take in essential elements of the WPA. R2RW has aided this initiative by providing support in the form a STTA to assist in preparation.

6.3.6 Articulate Incentives for LWMCs

R2RW supported the work of the Incentives Working Group of the National Integrated Watershed Management Council to pursue a study on incentives in Watershed Management with the Caribbean Natural Resources Institute (CANARI). The purpose of the study is to test, refine, and demonstrate valuation methods for a range of watershed services; and to determine the economic efficiency of incentives that are based on those values as well as their effectiveness in meeting watershed management objectives and improving local livelihoods. The study will focus on the Buff Bay/Pencar (BBP) Watershed Management Unit in north-eastern Jamaica.

6.4 Policy and Legislation

The objectives of this set of activities were to improve and define the objectives and roles of GOJ in watershed management.

Work Plan Activity	Activity Description	Achievements During Reporting Period
6.4	Policy and Legislation	
6.4.1	Watershed Policy	Final draft submitted to NEPA in November 2003
6.4.2	Watershed Protection Act	Consultations completed

6.4.1 Watershed Policy

A final draft of the Watershed Policy was submitted to NEPA in November 2003. Leadership for the next necessary steps lies with NEPA. These include delivery of the final draft to NEPA senior management, cabinet, the PS of the MLE, and the NEPA Board. NEPA and the MLE will ensure follow up of this activity through to cabinet approval.

6.4.2 Watershed Protection Act

A workshop was held in October 2003 with 27 representatives of government agencies, private sector, civil society and international donors and a report completed regarding required revisions to the Watershed Protection Act (WPA). At the workshop five strategic directions were identified to move the revision of the Watershed Protection Act forward. These are:

1. Legal Steps and Process
2. Funding of the Watershed Policy
3. Defining roles and responsibilities
4. Public Education, and
5. Assessment and Monitoring

NEPA has decided to focus attention on a new consolidated piece of legislation 'The NEPA Act' that will incorporate required parts of the existing Watershed Protection Act as well as recommended revisions and additions.

6.5 NIWMC Activities

The objectives of this set of activities were to support and cooperate with the National Integrated Watershed Management Council (NIWMC) which plays the leading national role in coordinating the government's inputs to watershed management.

Work Plan Activity	Activity Description	Achievements During Reporting Period
6.5	NIWMC Activities	
6.5.1	Tours of GRW and RGW	Tour of GRW held as part of NIWMC Retreat in May
6.5.2	Develop Mechanism to Incorporate LWMC Input into the NIWMC	Concept paper on LWMC recognition developed and discussed at NIWMC
6.5.3	NIWMC Retreat	Retreat held in May 2004
6.5.4	Participate in NIWMC Working Groups	R2RW supported the attendance of five NIWMC members at the international White Water to Blue Water (WW2BW) Conference. The individuals represented the Ministry of Foreign Affairs and Foreign Trade, NEPA, the Ministry of Land and Environment, and USAID
6.5.5	Develop Website for the NIWMC	Preliminary design and content developed

6.5.1 Tours of GRW and RGW

A tour of the Great River Watershed was conducted as part of the 2-day retreat of the NIWMC planned for May 2004. The tour focused on the Pineapple Anchor Project, sanitation initiatives, and tree planting programs and the Cleaning and Greening of Cambridge Anchor Project.

6.5.2 Develop Mechanism to Incorporate LWMC Input into the NIWMC

A concept paper on LWMC recognition developed and discussed at NIWMC.

6.5.3 NIWMC Retreat

A 2-day retreat of the NIWMC was held May 7-8, 2004 in Runaway Bay. The agenda included reflections on what the Council has done well, things that need to be improved upon, the strategic directions over the next year, and an Action Planning session to plan activities to achieve stated objectives.

6.5.4 Participate in NIWMC Working Groups

While R2RW's participation in the Working Groups was important, the participation of NIWMC member organizations in global workshops and seminars was equally important. As an example, R2RW supported the attendance of five individuals at the international White Water to Blue Water (WW2BW) Conference. The individuals represented the Ministry of Foreign Affairs and Foreign Trade, NEPA, the Ministry of Land and Environment, and USAID. WW2BW is an initiative aimed at fostering healthy, well-managed and productive marine and coastal ecosystems that support stable and secure economies in coastal countries of the Wider Caribbean Region. It stimulates partnerships to promote integrated watershed and marine-based ecosystems management in support of sustainable development. The outcomes of WW2BW in the Caribbean is intended to serve as the blueprint for future programs on watershed and marine ecosystem-based management in Africa and the South Pacific.

6.5.5 Develop Website for the NIWMC

Vendor has submitted a preliminary design and incorporated supplied documentation.

6.6 Improve Sanitation Management Practices – Anchor Project # 4

The objectives of this set of activities were to conduct the scientific research and field monitoring needed to mainstream the constructed wetland wastewater system into the range of sanitation options available to and appropriate for Jamaica.

Work Plan Activity	Activity Description	Achievements During Reporting Period
6.6	Improve Sanitation Management Practices – Anchor Project # 4	
6.6.1	Review and Document Cost-effectiveness of Sanitation Technologies	Costs of traditional technologies being collected and cost of alternatives analyzed from small sanitation grant costs
6.6.2	Set Up and Monitor Simulated Systems at CASE	Constructed wetland has been installed at CASE as part of their on-going program investigating performance and agricultural utility of waste disposal options. Wetland is being sampled to collect data.
6.6.3	Document Effluent Quality of Constructed Wetlands	Field monitoring of existing demonstrations commenced in July 2004. Laboratory analysis is being done in conjunction with NWC Lab at Bogue, St. James.

Work Plan Activity	Activity Description	Achievements During Reporting Period
6.6.4	Mainstream Constructed Wetland Technology	Data collection to precede mainstreaming Technology being incorporated into new national building code
6.6.5	Public Awareness to Support Anchor Project	Sanitation Workshop in May 2004 used to launch this component

As reported in “Budgets and Implementation Plans for the Anchor Projects”, report generated by R2RW, the implementation schedule was completed and placed in a gantt chart for the period January 2004 to June 2005 (See Appendix 17 for an update of this project). This report contains specific indicators, which will be used to assess the success of the Project as well as main activities and their associated costs reflected in a detailed budget. The primary responsibility for implementing the Anchor Projects lies with the Project Coordinator, however, he is supported by technical team members from R2RW, the Task Forces of the various WMCs, and CASE faculty.

After a competitive search, Stephen Hodges was hired as the Project Coordinator for this Anchor Project. Mr. Hodges comes to R2RW after an extensive career in Jamaica in all aspects of community-based technology testing and transfer with a particular specialty in sanitation technologies and programs.

6.6.1 Review and Document Cost-effectiveness of Sanitation Technologies

To begin this determination, the Project Coordinator is collecting historical information on the costs of traditional sanitation technologies including pits, septic tanks, and tile fields. Comparative costs of constructed wetlands vs. other effluent disposal technologies are sought from organizations and from the small grants facility.

6.6.2 Set Up and Monitor Simulated Systems at CASE

A constructed wetland has been constructed on the campus of CASE in Portland. A general description and status report is tabulated below. The wetland is part of an on-going program at the school that is investigating performance and agricultural utility of wastewater disposal options. Operation and monitoring of the wetland have not yet begun.

Location	Objectives	Partners	Status in Reporting Period
CASE	Expand demonstration plots of sustainable agricultural practices on the CASE Tutorial Farm Establish a constructed wetlands as well as hydroponics, spice, and ornamental fish production units to analyze in tandem with existing waste treatment facilities	Department of Agriculture, undergraduate and graduate students	Wetland constructed, flow meters and sample points installed. Data to be collected to assess local performance of the system. Completion date: 3 rd quarter 2004

6.6.3 Document Effluent Quality of Constructed Wetlands

Fortnightly sampling commenced in July at Pisgah and Retrieve schools. First 2 months of data used to establish steady state conditions while subsequent months will provide operational data. Effluent quality from the CASE wetland will be available from October on

6.6.4 Mainstream Constructed Wetland Technology

Mainstreaming requires design criteria to be derived from the field data. In conjunction with NEPA, WRA, JBS, JIE, MOH, R2RW is chairing the revision of the Domestic Sewage section of the International Building Code to be adopted by Jamaica. The design criteria will be inserted into the code when available.

6.6.5 Public Awareness to Support Anchor Project

Sanitation Workshops held in the GRW in May and June, and the RGW in July. Sanitation has been promoted as an integral component in the Green Village competition in the GRW and the Clean and Green Campaign in the RGW. A Sanitation Booklet was also developed and distributed. See Appendix 18.

6.7 Transfer Approaches, Methodologies and Lessons to Key Partners and Stakeholders

The objectives of this set of activities were to identify and mainstream the important achievements of and lessons from R2RW into NEPA and the GOJ to improve their ways of planning, overseeing, and regulating watershed management.

Work Plan Activity	Activity Description	Achievements During Reporting Period
6.7	Transfer Approaches, Methodologies and Lessons to Key Partners and Stakeholders	
6.7.1	Document Successes and Achievements	Ongoing as of 3 rd Annual Work Plan
6.7.2	Showcase Achievements and Transfer Lessons Learned	Scope of Work for initial gathering of lessons learned completed and consultants identified
6.7.3	NEPA and Other Government Agencies Encouraged to Incorporate Lessons into Corporate Plans	Lessons learnt document was developed by STTA for sharing with NEPA and other Government agencies.
6.7.4	Implement Special Studies	Several special studies approved and initiated including: Rio Grande Stakeholder Assessment Report Proposal to GEF - An integrated approach to managing the marine, coastal and watershed resources of East-Central Portland Determination of the extent and hazard of land slippage/faulting in Dumphries, part of Rio Grande Watershed, Portland, Jamaica Sediment Budget Study of the Rio Grande Valley and St. Margaret's Bay

6.7.1 Document Successes and Achievements

R2RW, NEPA, and USAID/Jamaica have all begun to focus on documenting the many and significant successes and achievements of the Project. Their collection was formally done as part of the Project Third Annual Report. An initial set was presented in that document and a more refined set introduced in this Semi-annual Report.

6.7.2 Showcase Achievements and Transfer Lessons Learned

To initiate the collection of lessons learned through Project activities, a Scope of Work for external technical assistance was prepared and consultants were identified to initiate this effort. The activity is expected in the early part of the next reporting period. See Appendix 19.

6.7.3 NEPA and Other Government Agencies Encouraged to Incorporate Lessons into Corporate Plans

The Lessons Learned document was finalized. At the Annual Work Plan Retreat the draft lessons learned fact sheets were presented to the clients and stakeholders to solicit comments and feedback.

6.8 Public Awareness

The objectives of this set of activities were to promote improved watershed management and the ways in which NEPA, USAID, and Jamaican partners are contributing to environmental improvement and local capacity-building.

Work Plan Activity	Activity Description	Achievements During Reporting Period
6.8	Public Awareness	
6.8.1	Publish Quarterly Newsletter	Published in February 2004
6.8.2	Complete Distribution of Posters	Distribution to all schools and government agencies complete
6.8.3	Issue Regular Press Releases	Press releases have been issued for all events held during the reporting period
6.8.4	Expand Media Opportunities	48 radio interviews were held for major events including World Wetlands Day, Feb. 2004, World Water Day, March 2004, Solid Waste Management Seminar, May 2004, Faith and the Environment, May 2004 and Green Expo, June 2004.
6.8.5	Presentations at Public Events	Staff have been proactive in making presentations at public events
6.8.6	Finalization of Public Education Kits	120 Enviro kits produced and all distributed.
6.8.7	Develop and Disseminate Information on Constructed Wetlands	Sanitation booklet produced, and 1 workshop in a planned series held.

6.8.1 Publish Quarterly Newsletter

A regular quarterly newsletter was published in February 2004 that contained articles on current Project activities such as the Green Village Awards Program, Youth and Environment forum,

community clean-ups, a community profile of Pisgah St. Elizabeth, a partner profile on the Forest Department, and articles on Staff and community leaders. 500 copies of the newsletter were printed and distributed to individuals throughout the two targeted watersheds and nationally.

6.8.2 Complete Distribution of Posters

The Compliance and Enforcement Posters under the "It Haffi Legal" theme continued to be distributed during the period. This was done primarily at public expositions held by R2RW or key stakeholders. Posters were distributed at the following events:

- ✍ World Wetlands Day, February 2004
- ✍ World Water Day, March 2004
- ✍ 4-H Achievement Day, March 2004
- ✍ Forestry Exposition, 2004
- ✍ Solid Waste Management Seminar, 2004
- ✍ Faith and Environment, May 2004
- ✍ Green Expo, June 2004
- ✍ Youth and the Environment, July 2004
- ✍ Denbigh, July-August 2004

NEPA, the Forestry Department, the National Water Commission, and the Jamaica 4-H clubs were all actively distributing the posters.

6.8.3 Issue Regular Press Releases

Press releases were issued on the following events during the reporting period:

- ✍ Week long training program on mining safety and environmental concerns, Kingston, November 2003
- ✍ Green Village 2004 Awards Ceremony, Blue Hole, St. James, December 2003
- ✍ World Wetland's Day Celebration, Port Antonio, Portland, February 2004
- ✍ World Water Day Celebration, Pisgah, St. Elizabeth, March 2004
- ✍ Solid Waste Management Seminar, Montego Bay, May 2004
- ✍ Youth and the Environment Conference, Montego Bay, July 2004
- ✍ Hurricane Ivan Community Upgrading Program, September 2004.

6.8.4 Expand Media Opportunities

Opportunities for expanding media opportunities were vigorously pursued during the period. Focus was placed upon inserting environmental messages into radio programming including feature articles and "talk show" programs, given that radio is one of the primary ways for Jamaicans to receive their news.

In total, 54 radio interviews were conducted during the reporting period as follows:

- ✍ Separate radio interviews for the Green Village Awards Ceremony featuring community leaders, GRWMC members and R2RW Staff between December 8 – 17, 2003.

- ✍ Featured guest appearance by Ms. Karen Turner, USAID Director on the program “My Place” aired on KLAS FM December 8;
- ✍ 12 separate radio interviews for the World Wetlands Day celebration featuring R2RW and NEPA staff, RGWMC members and community residents between January 31 and February 6, 2003.
- ✍ 11 separate radio interviews for World Water Day celebration featuring NWC and R2RW staff, and teachers and students at Pisgah All Age School between March 20 and 23, 2004.
- ✍ Radio interviews for the Montego Bay Solid Waste Management Seminar with MBMP and R2RW Staff.
- ✍ Radio interviews for the Faith and Environment Conference in May 2004.
- ✍ Over 10 interviews for the Youth and Environment Conference in July 2004.
- ✍ 1 Interview for the Denbigh Agriculture Show in July 2004.

In addition, both local television stations covered the Green Village Awards ceremony, the World Wetlands Day celebration, the World Water Day celebration, Solid Waste Management Seminar, GRWMC Green Village Launch, Faith and the Environment and Youth and the Environment. In addition, the Jamaica Information Service (JIS) has featured stories on R2RW on both radio and television during the period. Six local cable television stations have been playing the “It Haffi Legal” video.

6.8.5 Presentation at Public Events

R2RW participated and contributed to small- and medium-sized public fora throughout Jamaica as well as large events such as Green Expo and Denbigh. R2RW provided targeted funding and worked in partnership with JCDDT, the Environmental Foundation of Jamaica (EFJ), Canada/Jamaica Green Fund, NEPA, the private sector, partners from the Great River and Rio Grande and numerous volunteers.

6.8.6 Finalization of Public Education Kits

120 Enviro kits were produced and all distributed during the reporting period. Each kit was sent out with a confirmation form and an evaluation form. The kits contain the following:

- ✍ 5 short stories
- ✍ 2 flyers
- ✍ 11 booklets
- ✍ 13 brochures
- ✍ 33 posters
- ✍ Buttons and stickers

Reactions to the kits have been extremely positive. They contain a treasure trove of information on environmental issues that have been extremely useful to educators, animators, and public education officers.

6.8.7 Develop and Disseminate Information on Constructed Wetlands

Flyers on constructed wetland technology previously produced were disseminated during the period. The start-up of the Sanitation Management Practices Anchor Project has seen the

development of new and more user friendly documents on Sanitation. A booklet “What Everyone Should Know About Sanitation, Health and the Environment” was produced that graphically presents Health and Sanitation issues related to sewage disposal, present means of disposal, and alternatives for rural households. This information was used at the first sanitation workshop of the planned series.

7. Project Management

Achievements related to managing this complex Project, R2RW, during the reporting period 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 establish the capacity of WMCs to review and decide on funding grant applications, initiate the final set of R2RW grant-funded activities, shift the orientation of the grant program toward the four Anchor Projects, and monitor watershed impacts of grant-funded projects.

Work Plan Activity	Activity Description	Achievements During Reporting Period
7.1	Grant Fund Management	
7.1.1	Refine Grant Criteria for Anchor Projects	Published "Budgets and Implementation Plans for Anchor Projects"
7.1.2	Continued Screening of Grant Applications by WMCs	Task forces, the RGWMC, and the GRWMC led review of and decision-making concerning grant applications
7.1.3	Implement 8 New Grants	11 new grants initiated
7.1.4	Regular Monitoring of Grant Activities	Monitoring and indicators document prepared by consultant, reviewed by R2RW staff, final draft prepared and submitted to R2RW by consultant

7.1.1 Refine Grant Criteria for Anchor Projects

The four new Anchor Projects were presented to the GRWMC and the RGWMC, as well as to the Grant Selection Committees of both groups. A consensus was developed in both watersheds that new grant activities should substantially comply with the programmatic emphasis of the Anchor Projects. For example, in the Rio Grande, it was agreed that most new grants should directly support the two Anchor Projects relevant to the RGW: the Land Management Project in the RGW and the Sanitation Management Practices Project. The new criteria were implemented in January 2004 with the start of the four Anchor Projects and affected the approval of three new agroforestry grants approved at Dumphries, Durham Gap and Moore Town as well as a new sanitation initiative in Coopers Hill. The final budgets, implementation plans and performance criteria for the Anchor Projects prepared under a short-term contract with Cordia Thompson incorporate the revised grant criteria.

7.1.2 Continued Screening of Grant Applications

Since the start of the Project, the RGWMC received 35 grant applications of which 13 were favourably reviewed and 19 rejected. The GRWMC considered 15 grant applications of which 10

were recommended for approval. The WMCs was notified that no new grants will be approved after March 31, 2004 due to the fact that all funds for grants were fully allocated.

7.1.3 Implement 8 New Grants

8 new community level grant activities are described throughout this Semi-annual Report. Grant descriptions and the related sections of this Report are tabulated below

Location	Objectives	Partners	Description in SAR
Mafoota	<p>Construct water storage ponds for irrigation by 20 farmers' during dry season.</p> <p>Erect facilities for producing vegetable and herb plantlets and a holding/distribution center for tree seedlings</p> <p>Enhance livelihoods and demonstrate environmentally friendly agricultural practices including non-use and judicious use of pesticides and inorganic fertilizers, composting, and soil and water conservation</p>	Mafoota Farmers Group	Section 3.3.1
Cacoon Castle	<p>Reverse environmental degradation from shifting cultivation and poor agronomic practices</p> <p>Introduce improved, practical and affordable technologies to produce exotic vegetables and herbs, semi-perennials (pineapples) and perennials (fruit trees and timber) for full-year cultivation</p> <p>The main market for the products will be Round Hill Hotel, St. James and local public markets</p>	Cacoon Castle Farmers' Group/Cacoon Castle Jamaica Agricultural Society	Section 3.3.1
Catadupa	<p>Resuscitate 20 acres of existing cocoa</p> <p>Establish 15 acres of new cocoa</p> <p>Improve cocoa production by approximately 20 tons of dried beans per annum, after four years</p> <p>Support existing cottage industry producing chocolate bars for local and export markets.</p> <p>Use minimal tillage, excellent root structure, and heavy leaf litter of cocoa for land stability and erosion control</p>	Catadupa Farmers Group	Section 3.3.3
Moore Town	<p>Promotion of sustainable land management practices and creation of sustainable livelihoods.</p> <p>Establishing fruit and timber trees with plantains to provide economic return to farmers while trees grow. Pineapple and sugarcane as vegetative barriers on contours. Other physical barriers include check dams and gully plugs.</p> <p>The farmers group will be assisted with a tool pool.</p> <p>Training will be through promotional field days and individual farm visits.</p>	Moore Town Jamaica Agricultural Society	Section 4.3.1

Location	Objectives	Partners	Description in SAR
Durham Gap	<p>Establish and promote agro-forestry systems among farmers of Durham Gap and Dumphries to improve watershed health</p> <p>Expand improved land husbandry practices, and improved ground cover</p> <p>Establish fruit and timber trees with plantains to provide economic return to farmers while trees grow</p> <p>Pineapple and sugarcane used as vegetative barriers on contour. Other physical barriers include check dams and gully plugs</p> <p>Group to be assisted with tools and training through promotional field days and individual farm visits.</p>	Durham Gap Jamaica Agricultural Society	Section 4.3.1
Chatsworth	<p>Establish and promote agro-forestry systems to improve watershed health</p> <p>Improved land husbandry practices, improved ground cover and training</p> <p>Establish fruit and timber trees with plantains for economic return to farmers while trees grow</p> <p>Use pineapple and sugarcane as vegetative barriers on contour. Other physical barriers include check dams and gully plugs</p> <p>Training through promotional field days and individual farm visits</p>	Chatsworth Farmers Group	Section 4.3.1
Rio Grande Valley	<p>Linking small businesses in the Rio Grande valley with markets</p> <p>Increase business skills and confidence in craft producers and hoteliers</p> <p>Increase income for craft producers, hoteliers and trail guides</p> <p>Increase ecotourism activity in and exposure of the Rio Grande Valley</p> <p>Training for craft producers, producing a catalogue of Valley products, distributing the catalogue</p> <p>Benefit 60 craft producers in the Valley presently producing craft and transporting and marketing them in Ocho Rios</p> <p>Support watershed protection by strengthening the linkage between craft producers with the business community to generate income and promote sustainable utilization of natural resources</p>	Grand Valley Tours	Section 4.3.3
Coopers Hill	<p>Build a flush toilet system using water harvesting and a constructed wetland disposal system to replace existing pit latrines</p> <p>Establish focal point for public awareness activities in RGW</p>	Coopers Hill Primary School Parent Teachers Association	Section 4.4.2

Location	Objectives	Partners	Description in SAR
PEPA	<p>Increase the level of environmental awareness among staff and students in the RGW by expanding the number of schools in the SEP and PEP club programs.</p> <p>Promote the integration of effective and sustainable environmental practices into all aspects of school life among the schools in the RGW.</p> <p>Increase the level of environmental awareness among students and engender stewardship of watershed and other environmental resources.</p> <p>Increase the appreciation of Portland's biodiversity, endemic species and other natural resources.</p> <p>Increase knowledge of the consequences of individual and community actions on the environment.</p> <p>Strengthen PEPA's capacity to adequately supervise schools.</p>	Portland Environmental Protection Association	Section 4.5.3
10. Jamaica 4H	<p>Establish an exciting, credible and sustained environmental program that will provide a framework within which young people will challenge themselves to take an active and educated role in environmental work and connect them with professionals in the field.</p> <p>Strengthen the core 4-H curriculum by encouraging and facilitating environmentally friendly projects already within the repertoire (such as organic farming, recycling) and expanding, with time to more advanced projects such as hydroponics.</p> <p>The Project is active in the Parishes where R2RW operates: St. James, Hanover, Westmoreland, St. Elizabeth and Portland.</p>	Jamaica 4-H Clubs	Section 1, Introduction
11. PPDC	<p>Promote environmental sustainability by developing and implementing a Community Education and Public Awareness Program geared at the promotion and adoption of practices and activities that will engender community stewardship of the environment. The project addresses 5 programmatic themes:</p> <ul style="list-style-type: none"> ✍ Environmental Stewardship: ✍ Institutional Capacity Building of Key Partners and Communities: ✍ Community Based Environmental Competition ✍ Funding Support for Community Based Environmentally Focused Activities within Project Area: ✍ Building Strong Neighborhoods though Dialogue: utilizing the "Study Circle Concept" 	Portland Parish Development Committee	Section 4.5.4

7.1.4 Regular Monitoring of Grant Activities

All active grants are assigned to a member of the R2RW Technical Team to take the lead in the implementation and monitoring of grant activities. This staff member visits the project site on the average of 2 –4 times per month, with the number of visits increasing during periods of active implementation. During these visits, status on achievement of project objectives are assessed, fund disbursement and use is closely monitored, and community participation actively encouraged.

7.2 Staffing

The objectives of this set of activities were to ensure that the Project was fully and appropriately staffed, and that each staff member is adequately supported to carry out activities under the Annual Work Plan.

Work Plan Activity	Activity Description	Achievements During Reporting Period
7.2	Staffing	
7.2.1	Implement New Organizational Structure from Internal Review	New Organizational Structure implemented
7.2.2	Enhance Precision of Scopes of Work for STTA	SOWs developed with rigorous review from staff and clients
7.2.3	Staff Team-building and Information Sharing	Retreat held in December 2003

7.2.1 Implement New Organizational Structure from Internal Review

During the mid-term Project assessment conducted in June 2003, a new organizational structure was proposed that accounted for all new staff positions, brought all support staff from the previous CWIP project under R2RW, and rationalized the management responsibilities of the COP and Project staff. This new organizational structure has been implemented by R2RW and currently guides the operations of all Project activities. Staff changes of note include the addition of 4 coordinators hired to execute the anchor projects, Lisa Kirkland's secondment from NEPA and Leo Douglas' departure to pursue doctoral studies.

7.2.2 Enhance Precision of Scopes of Work for STTA

During the reporting period Scopes of Work were developed and approved for 18 separate activities including a Sediment Budget Study of the Rio Grande, Project Coordinators for the four Anchor Projects, Lessons Learned from the R2RW, and for Purchase Orders with external groups such as MIND to develop Compliance and Enforcement courses. The SOWs are developed by technical staff and vetted internally and with clients prior to the identification of consultants. Every effort is made to ensure that the backgrounds are comprehensive, the objectives clear, and the activities specific. All SOWs contain sections on the personnel identified, the outputs, and the schedule for completing the work.

7.2.3 Staff Team-building and Information Sharing

R2RW held a technical team-building retreat in December 2003. The objectives were

1. Determining the things that the Project has done well, and those that could be improved on;

2. Assessing staffing issues and team dynamics
3. Reviewing the Fourth Annual Work Plan, and establishing priorities by month
4. Reviewing the status and plans for the Anchor Projects.
5. Reviewing and making adjustments to the Project approaches

The retreat identified on the ground activities and demonstrations as well as solid programs that promote community stewardship to be major strengths of the Project. Each technical team member presented their priority activities based upon the Fourth Annual Work Plan, and received feedback from the rest of the team. A comprehensive list of significant outputs over the next six months was developed and a consensus developed around how to measure achievements. The retreat was successful in building team spirit and renewing individual commitments to the process and outputs of R2RW.

There was a joint staff retreat between CWIP 2 and R2RW held in July 2004. This retreat as the one before contributed to the maintenance of high staff morale.

7.3 Management Arrangements

The objectives of this set of activities were to continue to refine the cooperative, responsive and effective management of project resources to accomplish project objectives.

Work Plan Activity	Activity Description	Achievements During Reporting Period
7.3	Project Management	
7.3.1	Implement Recommendations from the Internal Review	Each recommendation addressed and monitored
7.3.2	Project Coordination Meetings	After submission of Fourth Annual Work Plan, the R2RW technical staff held a two-day retreat to review and strategize the plan Weekly and monthly team meetings held to ensure active coordination
7.3.3	Refine Indicators in Performance Monitoring Plan	Draft report on performance indicators received and being finalized.
7.3.4	Fourth Annual Work Plan Published	Published after stakeholder review and input
7.3.5	Semi-annual and Annual Reports Published	Work plan used as guide for delivery of this Semi-annual Report

7.3.1 Implement Recommendations from the Internal Review

An Internal Review of R2RW was conducted by external consultants in June 2003. This Review resulted in a series of recommendations which are presented in Appendix 18. Under the leadership of the R2RW COP, each recommendation has been addressed by the Project including those that have completion dates in later parts of 2004. Project staff have directed focused effort toward this and, with the exception of one recommendation concerning direct support needs of NEPA, has done a commendable job of reflecting and acting on the recommendations.

7.3.2 Project Coordination Meetings

Regular meetings are held to assist in coordinating and sharing information on the activities of R2RW in the GRW, the RGW and nationally. These have included the following:

1. Weekly meetings (held on Monday mornings) of full time technical and administrative staff to plan activities for the coming week.
2. Monthly Technical Team Meetings (held on the first Monday of each month) to update all team members on the activities of each member. Meetings were not held in July and September due to the work plan retreat and Hurricane Ivan.
3. Monthly Senior Management Meetings with NEPA to coordinate activities with NEPA staff.
4. Monthly Project Implementation Committee meetings to resolve policy issues related to R2RW implementation.

R2RW staff have benefited from the regular participation of the CWIP2 COP, Dr. Scott McCormick, at weekly staff planning meetings of R2RW. Through these discussions, the two projects have been able to coordinate programs in Portland and plan joint administrative support.

7.3.3 Refine Indicators in Performance Monitoring Plan

A consultancy was undertaken in October 2003 to help refine the performance indicators for the R2RW Project. The objective of this work was to establish a set of indicators of success for R2RW field-based activities that are consistent with ongoing and planned R2RW field-based interventions under R2RW Component 1, and with USAID Jamaica's current results framework. Indicators would then be reviewed at key intervals throughout the life of the project to ensure that they remain effective and relevant to project objectives, approaches, and operating conditions. The suggested revised indicators are designed not only to clarify the definition and measurement of progress, but also to assist in the realization of progress through the remaining two years of R2RW.

7.3.4 Fourth Annual Work Plan Published

The R2RW Fourth Annual Work Plan (FAWP) was produced in draft form, submitted to USAID/Jamaica for comments, amended to reflect comments received, and submitted in final form (four copies) to USAID/Jamaica on 12 January, 2004. A retreat was held December 12-13, 2004 to build consensus among clients and stakeholders on R2RW approaches and activities outlined in the Work Plan.

7.3.5 Semi-annual and Annual Reports Published

This 4th Annual and 8th Semi-Annual Report was completed and submitted in a timely manner to USAID/Jamaica and NEPA.

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 3		Project Year 4		Comments	Support to SO2
		Year	Actual	Target	Actual	Target	Actual		
Contract Objective: Natural resources under improved and sustainable management in identified watersheds									
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	20	45	35	48	<p>Targeted appropriate practices and sustainable resource utilization principles were applied in 20 communities out of 52 communities in the targeted areas.</p> <ol style="list-style-type: none"> 1. Retrieve: Water harvesting and sanitation systems, pineapple production 2. Content: Water harvesting & sanitation 3. Cornwall Barracks: Water supply 4. Comfort Castle: Water supply 5. Moore Town: Water supply; agroforestry 6. Passley Gardens: Integrated waste management for crop & livestock 7. Cacoon Castle: Vegetable production; tree planting 8. Montpelier: Goats 9. Knockalva: Goats 10. Pisgah: sanitation system 11. Mafoota: Car wash & laundry; vegetable production & irrigation 12. Catadupa: Tree planting activities; Cocoa production 13. Millbank Sanitation Project 14. Rushea: Hot Pepper production 15. Bethel Town: Hot Pepper and Honey 16. Coopers Hill: Agroforestry; sanitation 17. Industry: Agroforestry 18. Rock Hall: Agroforestry 19. Durham Gap: Agroforestry 20. Chatsworth: Agroforestry 21. Chesterfield: pineapple production 22. Ginger Hill: pineapple production 23. Maybole: pineapple production 24. Cambridge: solid waste management 25. Prospect: Tree planting and drain cleaning 	SO2 Indicator

8.2 Component 1 Targets

Performance Indicator	Indicator Definition And Unit of Measure	Baseline Data		Project Year 3		Project Year 4		Comments	Support to SO2
		Year	Actual	Target	Actual	Target	Actual		
Contract Result: Through targeted, sustainable environmental practices by resource users identified and promoted									
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	10	10	14	20	<p>20 practices were introduced to date. These are:</p> <ol style="list-style-type: none"> 1. Fruit trees establishment 2. Agroforestry interventions 3. Community clean-up of solid waste 4. Rural water supply 5. Rooftop water harvesting for schools and households 6. New varieties of bananas and plantains 7. Constructed wetlands for purifying septic effluents 8. Car wash and laundry 9. Mucuna seeds for leguminous ground cover 10. Intensive goat management systems 11. Planting timber trees under the Plant A Tree Program (GRW) 12. Honey production 13. Vegetable production 14. Herbs and spices production 15. Hot pepper production 16. Improved pineapple production 17. Cocoa establishment 18. Vegetative barriers along contours 19. Drain Clearing 20. Gully Plugs 	IR 1

Performance Indicator	Indicator Definition And Unit of Measure	Baseline Data		Project Year 3		Project Year 4		Support to SO2	
		Year	Actual	Target	Actual	Target	Actual		
Contract Result: Through targeted, sustainable environmental practices by resource users identified and promoted (cont'd)									
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	5	8	7	21	<ol style="list-style-type: none"> 1. Sanitation Support Unit with demonstration project in Retrieve 2. RADA with new crop technologies. 3. JAS with community groups agricultural projects 4. Goat Breeders Association with new goat management systems 5. Farmer training by JOAM in organic farming 6. Montego Bay Marine Park delivering public awareness programs with the Action Boyz 7. Port Antonio Theatre Group delivering environmental messages through drama 8. Forestry Department with Plant A Tree Program and agroforestry projects 9. NSWMA with Community Clean-ups and solid waste management 10. JCDT with public awareness in the upper RGW 11. Portland PDC with public awareness in the lower RGW 12. Jamaica 4-H clubs with Environmental Challenge Program 13. PEPA with Schools Environmental Education program 14. CASE with demonstration of integrated waste management 15. SDC with community mobilization strategies 16. St. James Parish Council with implementation of Cambridge Anchor Project 17. Pesticide Control Authority with reduction of child poisoning due to pesticides 18. Social Development Commission with community action planning 19. Valley Hikes with craft development in the Rio Grande Watershed 20. Great River Watershed Management Committee as a program catalyst of public awareness activities 21. Rio Grande Watershed Management Committee as a program catalyst of water and sanitation improvements 	IR 1.1

Performance Indicator	Indicator Definition And Unit of Measure	Baseline Data		Project Year 3		Project Year 4		Comments	Support to SO2
		Year	Actual	Target	Actual	Target	Actual		
Contract Result: Through targeted, sustainable environmental practices by resource users identified and promoted (cont'd)									
Number of Private Sector entities practicing or supporting environmentally friendly practices	<u>Private Sector</u> : Profit-making entities whether small, medium or large <u>Unit</u> : cumulative numerical	2000	0	6	7	8	16	Work was done with 16 entities: 1. Farmers in Catadupa with trees and cocoa production. 2. Farmers in Rushea with hot pepper. 3. Farmers in Cedar Grove with hot pepper. 4. Farmers in Cacoon Castle with vegetables, herbs & spices 5. Private sector support for Great River Green Village program prizes 6. Sandals in Mafoota and participation in public awareness techniques 7. Round Hill Hotel in Cacoon Castle 8. Farmers in Coopers Hill with agroforestry 9. Farmers in Industry with agroforestry 10. Farmers in Rock Hall with agroforestry 11. Farmers in Durham Gap with agroforestry 12. Farmers in Chatsworth with agroforestry 13. Farmers in Moore Town with agroforestry 14. Business community of Cambridge 15. Private Sector of Portland for Clean & Green Campaign 16. Private Sector involvement in Portland beach clean up	IR 1 IR 1.2

8.3 Component 2 Targets

Performance Indicator	Indicator Definition And Unit of Measure	Baseline Data		Project Year 3		Project Year 4		Comments	Support to SO2
		Year	Actual	Target	Actual	Target	Actual		
Component 2 Result: Incentives for and obstacles to enforcement of targeted environmental regulations identified and solutions supported									
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	2	1	The target of one new or revised regulation and policy for years 1 -4 was met with the completion of a Draft Watershed Policy that was presented to NIWMC, NRCA Board and Cabinet (through MLE). Consultations have been held towards a revision of the Watershed Protection Act, which follows the updated Watershed Policy. A workshop was held to begin the revision of the Watershed Protection Act	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	6	4	8	10	<ol style="list-style-type: none"> 1. Incentives Working Group of the NIWMC systematically pursuing implementation of incentives 2. CANARI supported study and testing of incentives in Buff Bay/Pencar Watershed 3. Great River Green Village Program 4. Plant A Tree Program in the GRW 5. Tree Planting Initiative in RGW under Anchor Project 6. Public Awareness to inspire community Clean-ups in the River Action Program, GRW 7. Public awareness to inspire community clean-ups through drama, schools environmental program, and community education, RGW 8. Environmental challenge program in schools 9. Training of farm groups in pesticide use and disposal 10. Use of drums and skips in Cambridge to address solid waste management issues 	IR 1.2 IR 2.1

Performance Indicator	Indicator Definition And Unit of Measure	Baseline Data		Project Year 3		Project Year 4		Comments	Support to SO2
		Year	Actual	Target	Actual	Target	Actual		
Component 2 Result: Incentives for and obstacles to enforcement of targeted environmental regulations identified and solutions supported									
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	8	13	15	18	<p>18 activities have been conducted to date:</p> <ol style="list-style-type: none"> 1. Study of Policy and Legislative Framework 2. Meeting/Workshop of GRW Task Force to review draft Policy and Legislative Framework 3. Meeting of Legal and Policy Experts to review draft Policy and Legislative Framework 4. Joint input of ENACT and R2RW into the preparation of a Pocket-sized field guide, on Jamaica's environmental laws, geared towards supporting enforcement officers in the field 5. Input into the Portland Multi-Agency Group on C&E, and lead-role in the establishment of a Portland C&E Task Force 6. Four Meetings of the GRWMC C&E Task Force. Meetings are used as mini-workshops 7. Joint support by ENACT and R2RW for a 3-Day "Training of Trainers Workshop" for NEPA's staff 8. 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" 	IR 2 IR 2.1

Performance Indicator	Indicator Definition And Unit of Measure	Baseline Data		Project Year 3		Project Year 4		Comments	Support to SO2
		Year	Actual	Target	Actual	Target	Actual		
Component 2 Result: Incentives for and obstacles to enforcement of targeted environmental regulations identified and solutions supported (cont'd)									
								<ul style="list-style-type: none"> 9. Design of posters to educate the public about C&E Issues 10. Production of scientific study of causes of erosion in St. Margaret's Bay 11. Production of scientific study on sediment budget for Rio Grande River and St. Margaret's Bay 12. Brochures drafted 13. Video and Jingle being produced 14. 5 symposia to sensitize judiciary on environmental Laws and regulations 15. Quarry Monitoring Committee established for Portland 16. Four (4) courses developed with MIND for enforcement officers and community leaders on environmental laws and advocacy 17. Compendium of Environmental Cases 18. Quarry Monitoring Committee formed in Portland 	

8.4 Component 3 Targets

Performance Indicator	Indicator Definition And Unit of Measure	Baseline Data		Project Year 3		Project Year 4		Comments	Support to SO2
		Year	Actual	Target	Actual	Target	Actual		
Component 3 Result: Capacity of Jamaican Government Agencies, International donors, and private-sector and civil society organizations to implement effective watershed management programs enhanced									
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	8	20	10	32	<ol style="list-style-type: none"> 1. National Environment and Planning Agency (with SWB acting as lead) 2. Min. of Land and Environment 3. NIWMC 4. Rural Agricultural Dev. Authority 5. Forestry Department 6. Jamaica Agricultural Society 7. National Water Commission 8. Public Health Department 9. Social Development Commission 10. Sanitation Support Unit 11. Montego Bay Marine Park 12. Local Authorities (Parish Councils) 13. Water Resources Authority 14. Sandals Hotel 15. Round Hill Hotel 16. Montpelier Citrus Company 17. Portland Environment Protection Association 18. Valley Hikes 19. GRWMC 20. RGWMC 21. CBO's 22. Jamaica 4H Clubs 23. Jamaica Conservation Development Trust 24. Pesticides Control Authority 25. University of the West Indies 26. College of Agriculture Science and Education 27. Knockalva Agricultural School 28. Portland PDC 29. Water Resources Authority 30. The Nature Conservancy 31. Caribbean Natural Resources Institute 32. Management Institute for National Development 	IR 2 IR 2.2

8.5 Cross-Cutting Activities

Performance Indicator	Indicator Definition And Unit of Measure	Baseline Data		Project Year 3		Project Year 4		Comments	Support to SO2
		Year	Actual	Target	Actual	Target	Actual		
Cross-Cutting Activities									
Gender Equity Strategy Number of partners implementing gender equity considerations	<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 <u>Unit</u> : Numerical annual totals Note: Definition expanded to include "special groups" based upon stakeholders input.	2000	0	4	9	6	9	1. Gender training materials produced for the GRWMC 2. Case study materials produced for gender training of the RGWMC 3. Report of the Gender for the GRWMC 4. Paper for the CWWA on R2RW's gender training approach 5. Revision of the Grant Fund to include gender equity 6. Report of Gender training of the RGWMC 7. Overall gender report of project activities 8. Draft checklist completed and in use 9. Gender disaggregated data included in the KAP survey and is being used to guide the development of public awareness strategies.	IR 1 IR 1.1 IR 1.2

Performance Indicator	Indicator Definition And Unit of Measure	Baseline Data		Project Year 3		Project Year 4		Comments	Support to SO2
		Year	Actual	Target	Actual	Target	Actual		
Grant Fund 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	10 \$300	16 \$260	14 \$400	29 \$430	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. Mafoota Car Wash & Laundry 4. Mafoota Irrigation 5. Millbank Sanitation 6. Coopers Hill Sanitation 7. Moore Town Water Supply Improvement 8. Rushea Hot Pepper Production 9. Cedar Grove Hot Pepper production 10. Hermitage Honey Production 11. Content Water supply and sanitation 12. Rock Hall Agroforestry 13. Industry Agroforestry 14. Coopers Hill Agroforestry 15. Durham Gap Agroforestry 16. Moore Town Agroforestry 17. Chatsworth Agroforestry 18. Comfort Castle Water Supply 19. Cornwall Barracks Water Supply 20. CASE Demonstration Project 21. JCDT Community Education Program for SWM in the Upper RGW 22. Portland PDC Public Awareness Program in the Lower RGW 23. Jamaica 4-H Clubs Environmental Challenge Program 24. PEPA Rio Grande Valley Schools Environmental Education Program 25. Cacoon Castle Vegetables & Herbs and Spices 26. Strengthening Ecocultural Tourism & Income Generation in the RGW 27. Green Expo 2004 28. Catadupa Cocoa Production 29. Pesticide Control Authority Reduction of Child Poisoning.	S02

Performance Indicator	Indicator Definition And Unit of Measure	Baseline Data		Project Year 3		Project Year 4		Comments	Support to SO2
		Year	Actual	Target	Actual	Target	Actual		
Cross-Cutting Activities (cont'd)									
Public Awareness Number of public awareness activities conducted	<u>Public Awareness:</u> formal and non-formal education, information sessions, extension and environmental education <u>Unit:</u> Numerical annual totals	2000	0	12	28	12	33	1. NIWMC Tour of GRW 2. GRW video promoted 3. Monthly GRW PATF meetings held 4. Two newsletters produced 5. 5 News releases produced 6. RGW public awareness working group active 7. Posters for C&E produced, launched and distributed 8. Video of Constructed Wetlands Technology produced 9. Stewardship/leadership training course developed in conjunction with MIND 10. Clean-up work days for solid waste coordinated in several communities 11. Implementation of River Action Program (Phase 1 and 2) 12. "Enviro" kits developed and distributed 13. Great River Green Village Program 2003 completed 14. Magistrates symposia series 15. Pocket Guide on environmental laws produced 16. World Wetlands Day 17. Content, St. James Environmental Gathering 18. CASE Career Fair (2004) 19. RADA Youth in Agriculture Expo 20. World Water Day Mar 22, 2004 - Pisgah, St. Elizabeth 21. World Wetlands Day Feb 2, 2004 Pt Antonio Marina 22. Green Village Awards Dec 11, 2003 23. 4-H Nyamins and Jammins Oct 20, 2003 24. World Food Day Oct 16, 2003 Hope Road 25. Lecture Case Feb 19, 2004 26. Round Hill Hotel Env. Fair Dec, 2003 27. UNEP tour of Great River - September 2004 28. US Ambassador tour of Upper Rio Grande – July 2004 29. Green Expo – June 2004 30. Denbigh – July – August 2004 31. Montego Bay Solid Waste Management Seminar – April 2004 32. Youth & Environment – July 2004 33. Faith & Environment Seminar – May 2004	IR 1

9. Annual Period Performance Benchmarks

This section provides an update of the performance benchmarks that were previously proposed for the 4th year of R2RW. Progress on the Performance Benchmarks are reported on an annual basis, hence this section provides an interim status of the annual benchmarks. Individual tasks in the FAWP and their percentage completion can be viewed in Appendix 21, Tracking Gantt.

Component 1A: Sustainable Environmental Practices in the Great River Watershed

Plan to Phase Out R2RW Support to GRWMC Developed

Workshop which brought together members of the GRWMC executive, key partner agencies, the SDC and Parish Council and community-based organizations was held on April 7, 2004 and a Phase-out Plan for the next 12 months drafted. The plan was further developed at a subsequent meeting of the GRWMC executive committee and presented at the quarterly meeting of the GRWMC on April 29th. See Appendix 1 for details of the implementation

Improved Pineapple Production Practices Demonstrated

Anchor project has established demonstration plots as well as assisted individual farmers to improve their farms. Five varieties are being promoted namely, 'Ripley', 'Sugar Loaf', 'Cowboy', 'Honey', 'Cheese' with a sixth variety 'Smooth Cayenne' being replicated for delivery in 2005. A video, PowerPoint Presentation, Brochure and Poster have been prepared for used in extension and training. Several field days have been held to demonstrate lining out, soil conservation and other appropriate cultural practices.

Cambridge CDC Implementing Activities to Address Solid Waste Management

A Steering Committee has been established to guide the governance process related to transformation in this area. A Business Breakfast was held on May 28 to engage the business community in Cambridge in participating on the process being facilitated through the anchor project.

Eight Communities Educated on Waste Management Issues

This has been achieved through presentation by the Action Boyz, clean-up days, the Solid Waste Seminar held jointly with the MBMP and through presentations by the Public Awareness Assistant of the Cambridge Anchor Project at schools.

Three Initiatives to Enhance Public Awareness of Priority Issues Implemented

The Cambridge Anchor Project through Action Planning and Mobilization Workshops, The Solid Waste Seminar, The Youth and the Environment Conference and The Faith and the Environment Workshop all supported the attainment of this project goal. The major accomplishments of these activities continue to be the wide cross section of stakeholders, partners and participants that attend these events enriching the dialogue and action plans developed.

Six Communities Educated Through Community Drama

The Action Boyz during active implementation of the grant which facilitated their presentations made a marked impact on communities with the messages in the two plays performed. 'Weh You Wash Way Nuh Dash Weh' conveyed explicitly the ills surrounding the use of rivers as waste

receptacles and 'Sal Ting and Wata in a Trouble' demonstrated the problems associated with indiscriminate agrochemical use.

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

RGW Strategic Plan Prepared

Not started

Plan for Phase Out of R2RW Support to RGWMC Developed

On Thursday April 1, 2004 a one-day workshop with 34 participants drawn from the RGWMC executive, key partner agencies, the SDC and Parish Council and community based organizations to develop a one year R2RW Phase-out Plan. The action was reviewed by the Executive and wider RGWMC and has subsequently been refined by Task Forces and other stakeholders.

Three New Agro-forestry Projects Implemented

Three projects have been implemented in Moore Town, Chatsworth and Durham. Timber and fruit trees along with pineapples used as contour barriers have been established after development of case sensitive farm plans. Training days and demonstration plots form a part of the long-term intervention in changing farming practices in this watershed.

Three Water Harvesting and Sanitation Projects Completed

Water supply projects have undertaken in Comfort Castle and Cornwall Barracks and sanitation projects at Coopers Hill Basic School and CASE. The water supply projects require connection to the main by the Parish Council as well as some minor work due to Hurricane Ivan. Handing over is scheduled for November 2004. The sanitation project at Cooper's Hill Basic is near completion as the digesters are being modified and the wetland has been filled. The CASE project has been set up to collect performance data including flow rates through the system.

Two Exchange Visits to GRW Conducted

This goal was achieved through participants attending the Youth and the Environment Conference,

Annual Gender Report Prepared

This report was completed and submitted to USAID for approval.

Component 2: Compliance and Enforcement

Seminar to Educate Lay Magistrates and Deputy Clerks of the Courts Held

Training conducted for clerks and deputy clerks of the courts in two 3 day residential workshops which included a simulation exercise. The seminars have been highly successful in exposing judicial staff to various aspects of planning and the environment.

Curricula and Training Materials for Training of Enforcement Personnel Developed

Development of curricula for four courses listed below with requisite training materials completed and institutionalized through Management Institute for National Development.

- ✍ EC01 - Introduction to Resource Systems, Environmental Legislation and Planning Legislation;
- ✍ EC02 – Techniques and Procedures for Enforcement and Compliance of Environmental and Planning Legislation;
- ✍ EC03 – Personal Competencies for Enforcement and Compliance; and
- ✍ EC04 - Enforcement and Compliance of Environmental and Planning Legislation for Community Leaders.

Training Seminar for Community Leaders in Compliance and Enforcement Held

Seminar will be held soon as execution was awaiting development of materials.

Pocketsize Field Guide Finalized, Distributed and in Active Usage

Second set of Pocket Guides printed and distributed. Second edition of the pocket guide drafted based on requests received. The 2nd edition incorporates comments received and changes in legislation since the time of first printing.

Portland Quarries Monitoring Committee Established and Addressing Mining Issues

The Committee was established and meetings commenced in June. The Mines and Quarries Division have assumed leadership on this activity. The committee will facilitate harmonization of development and economic activities with conservation and tourism goals in the Parish of Portland in general and the Rio Grande WMU in particular. This harmonization is very important as the Parish moves towards achievement of Green Destination status.

Baseline of Environmental Court Cases Established

Compendium drafted during the summer by interns from the Norman Manley Law School to provide a reference to important local environmental cases.

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

GPS Units Procured for SWB

GPS units were procured in August 2004 and delivered to NEPA. It is anticipated that these will support better mapping of watershed health and status by watershed officers and contribute valuable data to the watershed database.

PubEd Kit Developed, Produced, and Distributed

Titled “Enviro Kits”, some 120 kits been widely distributed in two sets to key institutions and individuals. The kits have been called a “gold mine” of information with the 2nd set containing information on birds and endemic species receiving extra commendation. A questionnaire provided with the kits helps to monitor use of the kits and their contents. This information will inform future contents and assist in responsiveness to major audiences.

Three Training Courses Held

Courses on proposal writing, meeting management, fundraising and advanced participatory methods Level 1 and 2 have been held during the reporting period. These courses have been extended to a wide number of organisations including key partners to meet the project's goals of institutional strengthening and capacity development. Of note with APM training is the recognition of the value of this technique by the SDC and their resulting sponsorship of further workshops other regions of the commission.

Watershed Policy Finalized

The Project has completed support to the Watershed Policy including, at the request of the Ministry of Land and Environment, the reproduction of color copies for presentation to Cabinet. It is anticipated that the policy will receive Cabinet approval in the very near future

Two LWMC Networking Workshops Held

These were not held during the reporting period.

Four Newsletters Published

Two newsletters have been prepared for the reporting period covering project activities and achievements, schedules of events, profiles on project leaders, and "watershed wisdom"

Project Management

All Grants Monitored Twice Per Year

Technical staff along with relevant task force and/or watershed management committee members and watershed grants officers monitored all grants on an ongoing basis. The monitoring assisted with ensuring smooth execution of grants as well as enabling responsive changes to be put in place.

Eight New Grants Implemented

11 new grants approved and being implemented. Of note are the new grants to be implemented under the Hurricane Ivan Community Upgrading Programme (HICUP), which will see the establishment of a small fund to assist communities in post hurricane rehabilitation.

New Staffing Structure Implemented and Functional

Staffing structure recommended from review was implemented. Four Coordinators were hired to support the anchor projects designed to consolidate the projects interventions.

Eight Project Implementation Committee Meetings Held

Project Implementation Meetings held jointly with CWIP2 and EAST have been held on a regular basis to ensure close collaboration and coordination of initiatives. These meetings have also helped to plan mutually reinforcing activities between the projects especially in Portland and the Rio Grande.

On Time Submission of Work Plan and Semi Annual Reports

Work plans including the upcoming 5th Annual Work Plan have been submitted on a timely basis. Semi-annual and Annual reports have also been submitted within the required period to fulfill contractual obligations.

10. Program Expenditures

On the following page, a summary of program expenditures incurred during the period October 1, 2003 to March 31, 2004 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 Fourth 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, 2003 to September 30, 2004

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

	CLIN 1	CLIN 2	CLIN 3	CLIN 4	CLIN 5	CLIN 6	TOTALS
Project Management & Admin	365,536	134,365	117,002	0	4,751	3,175	624,828
Travel, Transportation & Per Diem	102,190	27,470	6,746	0	3,112	0	139,518
Equipment & Supplies	55,197	31,751	7,920	0	4,168	0	99,036
Operating Costs	141,337	65,511	16,358	0	7,902	0	231,108
Subcontracts & Tech Assistance	258,104	55,432	2,535	0	1,334	0	317,405
Grants	118,935	0	0	0	0	0	118,935
Training							
- Study Tours	0	0	0	0	0	0	0
- In-Country	60,130	35,181	5,213	0	0	0	100,525
TOTALS	1,101,428	349,711	155,773	0	21,267	3,175	1,631,354

HICUP Grant Press Release

PRESS RELEASE

For Immediate Release, September 24, 2004

Ridge to Reef Watershed Project Establishes \$1 Million Hurricane Relief Fund

The Ridge to Reef Watershed Project (R2RW) as part of its regular watershed management activities is with immediate effect, implementing a Hurricane Ivan Community Upgrading Program (HICUP), which will see the establishment of a small fund to assist communities in post hurricane rehabilitation.

The purpose of HICUP is to assist communities to recover from the environmental effects of Hurricane Ivan. Communities, not individuals, may apply for assistance with cleaning drains, clearing landslides, restoring water connections, tree planting, seeds supply, repairing community centres, establishing erosion control barriers and any other environmental related activity.

R2RW Chief of Party, Mark Nolan, notes that this emergency fund will help communities to solve major community-based issues during a time when people are primarily focused on putting their own lives together.

Communities which can benefit from this special program, are only those located in the Great River and Rio Grande watersheds. The HICUP program will run from September 20, 2004 to December 31, 2004 and a maximum of fifty thousand dollars will be allotted to a maximum of twenty communities in both watersheds, for a total outlay of 1 millions dollars.

Application forms can be obtained from the Ridge to Reef Office- 5 Oxford Park Avenue, Kingston 5, or telephone 754-3910-2 for further details on how to contact the assessment team on the ground.

The Ridge to Reef Watershed project, is a five-year project of the Government of Jamaica's National Environment and Planning Agency NEPA and the United States Agency for International Development USAID.

For further information contact:
Sonja Harris 754 1910-2 or 754 7598 or
Marline Stephenson-Dalley 770-4107

HICUP Grant Summary

Title	Amount	Organization	Location	Status
Hurricane Ivan Community Upgrading Program (HICUP) Grants in the Great River Watershed				
Mafoota Farm Road Rehabilitation	111,000	Mafoota Agribusiness Cooperative	Mafoota, St. James	Work to start Oct. 25th
Production of Export Crops in Chester Castle	50,000	Chester Castle Survivors Group	Chester Castle, Hanover	Work to start Oct. 25th
Repair fencing & rehabilitate access roads - Cacoon Castle	50,000	R2RW, Cacoon Castle Farmers Group	Cacoon Castle, Hanover	Work underway
Dundee Operation Clean-up	50,000	R2RW, Dundee Citizens Association	Dundee, Westmoreland	Work underway
Bickersteth Drain Cleaning	120,000	R2RW, Bickersteth Community Development Committee	Bickersteth, St. James	Work underway
Cleaning of Market Level Drains, Cambridge	50,000	R2RW, Cambridge CDC	Cambridge, St. James	Work underway
Clearing of Mud Town North Drain	50,000	R2RW, Cambridge CDC	Cambridge, St. James	Work to start Oct. 25th
Tank Road District Drain Cleaning	50,000	R2RW, Cambridge CDC	Cambridge, St. James	Work underway
Shortwood Road Rehabilitation	50,000	R2RW, Cambridge CDC	Cambridge, St. James	Work to start Oct. 25th
Comfort Hall Rural Water Supply Project	110,000	R2RW, Ramble Pond CDC, St. James Parish Council	Comfort Hall District, Anchovy, St. James	Procurement on-going

Title	Amount	Organization	Location	Status
Hurricane Ivan Community Upgrading Program (HICUP) Grants: Rio Grande Watershed				
Stony Hill Drain Cleaning	50.000	R2RW, Stony Hill CDC	Stony Hill, Portland	Work to start Oct. 25th
Clearing of the Cuna Cuna Pass (Access Roads & Ecotourism Trails)	50,000	R2RW, Bowden Pen Farmers Group	Bowden Pen, Portland to Heyfield, St. Thomas	Work underway
Clearing of 7 miles of access roads & ecotourism trails in Rio Grande Valley & Berrydale	50,000	R2RW, Grand Valley Tours	Rio Grande Valley & Berrydale, Portland	Work underway
Clearing of debris from river to avert flooding	50,000	R2RW, Prospect Farmers Group	Prospect, Port Antonio	Work underway

Strategic Actions and Implementation Plan for R2RW phase out of support to the GRWMC

Participants		Launch Activity	Apr - Jun	Jul - Sep	Oct - Dec	Jan - Mar	Victory Complete
Institutional Arrangements	Barrington Taylor Don Streete, John White Basil McFarlane Dianne Dormer, Bernice Williams	Decide on partner agencies for the GRWMC	Establish secretariat; Start drafting of Constitution; Decide on lead agency; Registration of GRWMC; Source consultant to assist in drafting of Constitution/MOU if necessary	Start drafting MOU; Move to incorporate GRWMC activities in Work Plans and Budgets of partner agencies	Tour of GR by Minister of Government and Agencies	Signing of MOU	GRWMC registered as a legal entity and MOU signed
Finance/Promotion and Awareness	Hugh Graham Ivel McLean Karen McDonald-Gayle Neville Williams	Establish fund raising Committee of the GRWMC	Complete training in proposal writing and fund raising; Identify resource persons from training in proposal writing and fund raising	Develop budgets and line items Prepare proposals for financing the secretariat	Prepare and submit grant proposals To identify non-grant sources of funding	Investment surplus funds in medium term instruments	GRWMC still meeting, still working and meeting financial obligations
	Sonja Harris Sadie Dixon	Prepare lessons learnt on GRWMC process	Refine public awareness strategies modeled on R2RW	Design a promotional program on GRWMC activities	Present program for incorporation into agencies work plans and budgets		GRWMC/Environmental awareness specified in 2005 budgets and work-plans of key agencies
Train and build capacity	Theodore Rhone, Patti Bedasse Carlene Martin, Trevion Manning, Simone McCulloch, Deanna Hunter Sadie Dixon	Meeting with Stakeholder agencies to secure buy-in	Training in proposal writing and fund raising; Legalize GRWMC	Sign MOU; Financial management training for GRWMC	Training of agencies and Committee in Organizational Development Evaluation	Evaluation of training and awareness activities	Total agency buy-in, organized pro-active community groups with feedback mechanism in place

Next Steps

1. GRWMC executive will refine the strategic action results into a work plan and present to this at the next quarterly meeting of the committee.
2. The GRWMC will take immediate actions to prepare itself for sustainability including pursuing legal registration and maneuver to undertake fundraising activities.
3. Barrington Taylor was elected to coordinate all the three groups. The group leaders were as follows;
 - ✍ Inst. Arrangements – B. Taylor
 - ✍ Finance, Promotion and Awareness – Ivel Mclean
 - ✍ Training and Capacity Building – Trevion Manning
4. The leaders of the above groups will meet in their respective teams before the next GRWMC quarterly meeting on April 29th to refine their strategies and make a presentation at the April 29th meeting.
5. Suggested that one overall MOU be developed with all the key agencies.

Pineapple Anchor Project Gantt

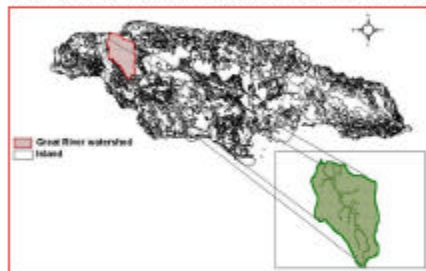
Activities	2004												2005						Responsibility
	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	
1.0	To Establish a Pineapple Demonstration Variety Trial and to Establish 200 New Acres of Pineapple in the GRW																		
1.1	█	█																	Project Coordinator, Agronomist, RADA
1.2			█	█															Project Coordinator, Agronomist, RPPU
1.3				█															Project Coordinator, Agronomist, RADA, JAS, NEPA
1.4				█															Project Coordinator, Agronomist, RADA
1.5				█	█														Project Coordinator, Agronomist Antilles Chemical, RADA.
1.6					█	█													Project Coordinator, Agronomist RADA, JAS
1.7							█	█											Project Coordinator, Agronomist, RADA
1.8											█	█							Project Coordinator, Agronomist, RADA, NEPA
1.9			█	█	█	█	█	█											Project Coordinator, Agronomist, JAS, RADA
1.10			█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	Project Coordinator, PPAPRS, Public Awareness Taskforce
1.11							█	█	█	█	█	█	█	█	█	█	█	█	Project Coordinator, Agronomist, RADA, JAS, Antilles, PCA
1.12					█	█	█	█	█	█	█	█	█	█	█	█	█	█	Project Coordinator, JAMPRO, RADA, JAS
1.13							█	█	█	█	█	█	█	█	█	█	█	█	Project Coordinator, RADA, Antilles, NEPA.
1.14	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	Project Coordinator, RADA

Pineapple Poster

Improving Pineapple Production in Jamaica

In recent years pineapple *Ananas comosus* production in Jamaica has deteriorated due mainly to infrequent replanting, poor cultural practices, and the dependence on a single variety, red spanish commonly called cowboy.

The Ridge to Reef watershed Project which is funded by USAID through the National Environment and Planning Agency (NEPA) and implemented by the Associates in Rural Development (ARD), has undertaken to improve pineapple production in the Great River Watershed of Western Jamaica. It uses demonstration plots, on-farm training and videos. It also provides some incentives such as good quality planting materials, small hand tools and fertilizer to some growers, and aims to develop about 100 acres of pineapple (5% of total acreage) spread all over the area as example for others to follow. Initially five demonstration plots were established.



The varieties plants used are of red spanish, ripley and sugar-loaf. Provisions are being made to introduce smooth cayenne later.

The planting materials used are plant suckers. Since the dominant terrain is hilly, the plant rows are lined along the contour. The project is recommending and demonstrating double rows set three feet apart with a six-foot space between each pair. The plants are set two feet apart in the rows in a staggered pattern.

Plant holes are dug a week before planting, with two ounces of fertilizer applied to each hole and covered lightly. The plants are treated with a pesticide to disinfest them and then set upright in the hole and the soil pressed firmly around the base.

Weed control was done on the demonstration plots as pre-plant treatment, and will subsequently be done by other chemicals, or manually (using a wheel hoe).

Inter cropping of the newly planted pineapple fields is encouraged using crops such as cow peas, corn, and sorrel.

Established crops such as citrus and plantain can be inter-planted with pineapple.

So far the project is proving successful, the demonstration plots attract much attention, training days are well attended, and field officers are assisting several farmers to develop their pineapple holdings.



Cowboy Pineapple Plant



Ripley Pineapple Fruit



Sugarloaf Pineapple Fruit



Pineapple Plant Sucker



Double Rows Set Three Feet Apart



Inter cropping - pineapple and citrus



Inter cropping - pineapple and cowpeas

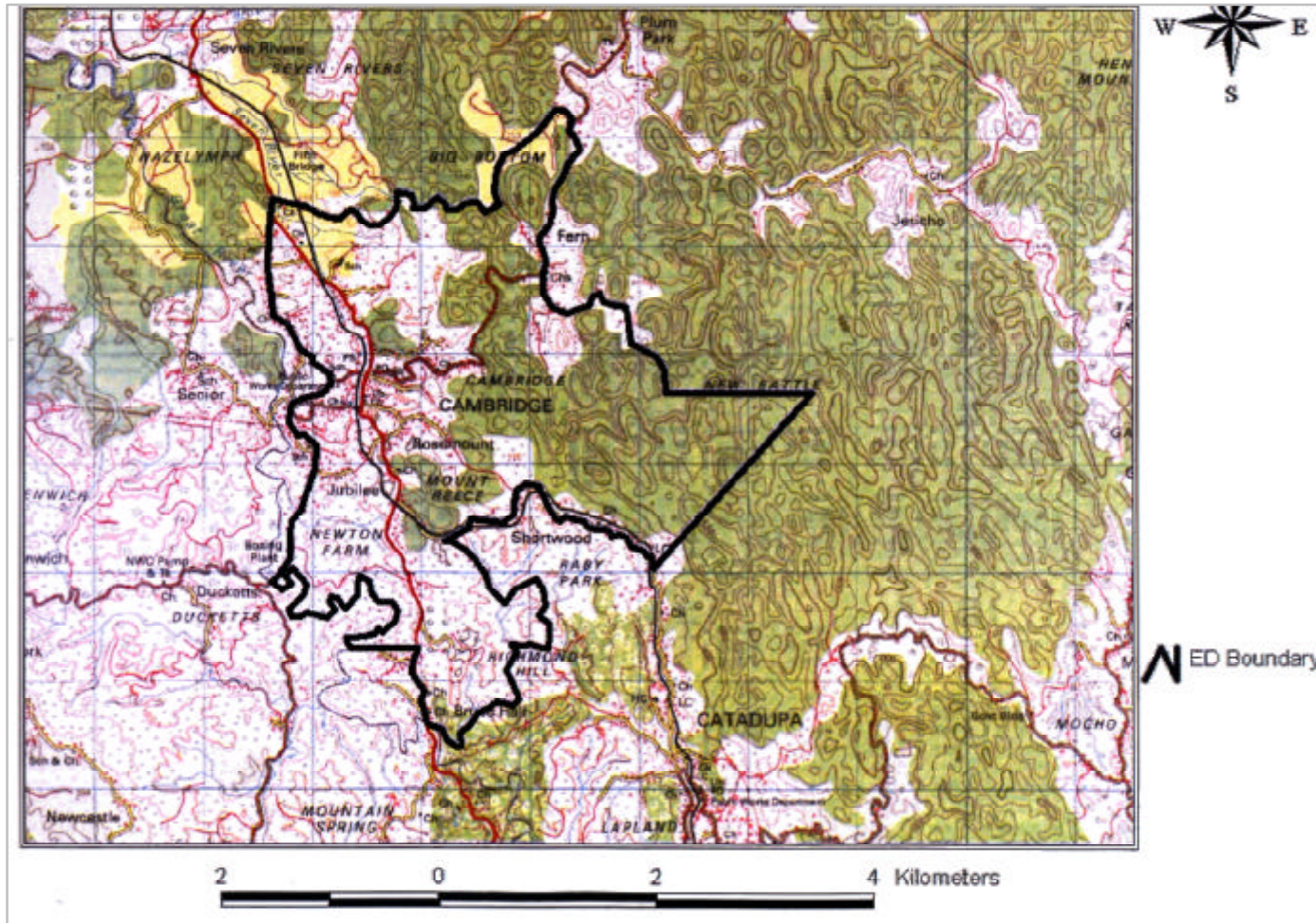


Wheel Hoe used for Manual Weed Control

R2RW is a five-year joint initiative of the Government of Jamaica through its National Environment and Planning Agency (NEPA) and the Government of the United States through its Agency for International Development (USAID) that works with communities, state agencies and civil society groups for the sustainable management of natural resources within the Great River and Rio Grande watersheds of Jamaica.



Map showing Cambridge in relation to the Great River WMU boundary



Cambridge Anchor Project Gantt

Activities	2004												2005						Responsibility
	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	
1.0	Develop Governance Mechanism for all Activities Under: Sanitation; Production & Marketing & Public Awareness																		
1.1	█																		R2RW/SDC
1.2	█	█																	R2RW
1.3	█	█																	R2RW
1.4	█																		R2RW H/O
1.5		█																	R2RW, Project Coordinator
1.6		█																	R2RW, Project Coordinator
1.7		█																	SDC, Project Coordinator
1.8		█	█	█															SDC, Project Coordinator
1.9	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	R2RW/SDC/PC/CDC
1.10	█	█																	SDC, Project Coordinator
1.11		█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	SDC, Project Coordinator
1.12	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	CDC, Community Animator, Project Coordinator, SDC
1.13					█														CDC, SDC, Project Coordinator
1.14				█	█														CDC, Project Coordinator

Activities		2004												2005						Responsibility
		J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	
1.15	Evaluation exercise																		Dept. of Cooperative, Project Coordinator, CDC	
1.16	Development of brochure introducing CDC and its functions and its projects																		CDC, Project Coordinator	
1.17	Workshop: Visioning – Launch of CDC – Signing of MOU with major partners																		R2RW, SDC, PC, CDC, Project Coordinator	
2.0	Sanitation & Land Management																			
2.1	Tour Cambridge to identify sanitation problems																		Project Coordinator/PC	
2.2	Develop action plan through CDC																		Project Coordinator/PC/CDC	
2.3	Procure tools for clean up and garbage disposal																		Project Coordinator/PC/CDC	
2.4	Establish sorting depot in Cambridge																		Project Coordinator/PC/CDC	
2.5	Conduct physical clean up and greening activities																		Project Coordinator/PC/CDC	
2.6	Erect Signs																		Project Coordinator/PC/CDC	
2.7	Implement alternate sanitation and waste disposal solutions, establish demo project on office grounds																		Project Coordinator/PC/ Sanitation Team	
2.8	Correct the Cambridge gutter																		Project Coordinator/PC/CDC	
2.9	Develop community action plan through CDC																		Project Coordinator/Land Mgmt Team/CDC	
2.10	Establish demonstration plot on office grounds – soil conservation best practices																		Project Coordinator/Pineapple Dev. & Land Mgmt Team/CDC	
2.11	Conduct field days, workshops and seminars to share best practices																		Project Coordinator/Land Mgmt Team/CDC	
2.12	Tree planting – encourage commercial growth of timber and other Agro-forestry products																		Project Coordinator/Land Mgmt Team/CDC	
2.13	Quarterly newsletter to make the public aware of the various initiatives re “Cleaning and Greening of Cambridge” etc.																		Counterpart & Project Coordinator	
2.14	Teacher Training Seminars																		Counterpart & Project Coordinator	

Activities	2004												2005						Responsibility
	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	
3.0 Public Awareness (for entire watershed with special emphasis on Cambridge)																			
3.1 Develop Plan (involve CDC)			■																Public Awareness Campaign Program
3.2 Hire a counterpart to deliver program						■													Timely delivery of program
3.3 Establish a steering committee						■													Guidance and assistance throughout life of program
3.4 Establish awareness levels						■													A baseline from which to measure success
3.5 Presentations to various publics including all schools in GRW									■	■	■	■	■	■	■				Informed and more aware public
3.6 Produce posters						■	■												Informed and more aware public
3.7 Produce buttons						■	■												Informed and more aware public
3.8 Develop Mascot idea and Produce costume						■	■												Informed and more aware public
3.9 Produce song for use in presentations etc.						■	■												Informed and more aware public
3.10 Involve Private Sector in development of mini billboards and A-Z Booklet re Watershed protection										■									Informed and more aware public
3.11 Develop enviro-kits and video for local cable											■	■							Informed and more aware public
3.12 Conduct competitions and special activities										■				■					Informed and more aware public
3.13 Link with SEP to establish/strengthen clubs with environmental mandates										■	■	■	■	■	■				Informed and more aware public
3.14 Establish Cambridge Drama Group using "Action Boyz" – Utilize Didactic theatre in town square, street corners, bars etc. to create awareness						■	■												Informed and more aware public
3.15 Quarterly newsletter to make the public aware of the various initiatives re "Cleaning and Greening of Cambridge" etc.							■				■			■				■	Informed and more aware public
3.16 Teacher Training Seminars										■		■			■			■	Informed and more capable teachers

Activities	2004												2005						Responsibility
	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	
4.0 Nature/Heritage Tourism Program																			
4.11 Introduce the idea of using a “Clean and Green Cambridge” as for tourism development using the rich natural and cultural heritage of the area to develop a “Heritage Tourism Trail”																			Project Coordinator/TPDCo/ Private Sector
5.0 Establish Small Grants Community Program																			
5.1 Encourage community groups (CBOs) to implement their own small projects observing certain set criteria e.g. Fencing, Greening and Beautification of Infant School Grounds.																			Communities using their initiative and new awareness to implement “cleaning and greening” activities

Summary of Presentations - Solid Waste Management Seminar

Presentations were made around the following themes:

- a. Public & private service delivery - commercial and residential collection, disposal, recycling, hazardous waste
- b. Institutional Capacity, Legislation and Enforcement (Local Authorities, NEPA, NSWMA, Municipal police, wardens, Constabulary Force, Judiciary)
- c. Physical Infrastructure -urban and rural; existing and future (gullies, road networks, informal settlements, hilly terrain etc.)
- d. Awareness and Outreach – mass public education; school and community programs

The participants were expected to:

- a. Define the problem in one or two concise sentences
- b. Recommend solutions based on their topic
 - i. Solutions should indicate if new policies are required
 - ii. Indicate the public sector agencies, private sector entities, NGOs, public sector private sector partnerships etc. responsible for implementing the solutions
 - iii. In the case of partnerships indicate the methodology for implementation e.g. Steering Committee, Watershed Management Committee, new committee, existing committee etc.
 - iv. Indicate if special projects are required
 - v. Suggest possible sources of funding for all solutions
 - vi. Examine the relevance of economic instruments (incentives and penalties)
 - vii. Suggest timeframes for implementation

Institutional Capacity, Legislation and Enforcement

Problem Statement

Solid waste management in Montego Bay is hampered by a lack of demarcation of areas of responsibility between responsible institutions. This is further compounded by a lack of enforcement, training and resources.

Responsibilities

The NSWMA through WPM Waste Management Ltd. was identified as the agency with ultimate responsibility based on the National Solid Waste Management Act, 2001.

Partners that need to work in collaboration with the NSWMA are:

- ✍ Montego Bay Chamber of Commerce
- ✍ Jamaica Hotel and Tourist Association (JHTA)
- ✍ Citizens' Associations
- ✍ Church Groups
- ✍ Service Clubs
- ✍ Schools

A recommendation was made to establish a committee called 'the St. James Steering Committee for Solid Waste' with membership comprising the above listed entities.

The recommended roles of the partners include:

✍ Montego Bay Chamber of Commerce

- Moral/Civic persuasion
- Develop incentive program for members
- Promote environmental stewardship

✍ JHTA

- Encourage the implementation of the 3 Rs among members (reduce, reuse, recycle) and a 4th R; refuse non-environmentally friendly products
- Provide incentives to members

✍ Citizens' Associations

- Install garbage receptacles at strategic positions and collect money for proper removal/disposal
- Promote environmental stewardship

✍ Church Groups

- Pay for their own garbage collection as well as for others
- Advocacy
- Civic persuasion
- Promote faith and environment as a theme

✍ Service Clubs

- Sponsor and be involved in clean up days
- Act as volunteers
- Promote best community completions
- Provide receptacles such as drums for communities

✍ Schools

- Promote environmental stewardship
- Implement the 3 Rs (reduce, reuse, recycle)
- Pay for their own garbage collection

Solutions

Implementing Entity	Activities	Time Period
The Montego Bay Chamber of Commerce	NSWMA/WPM must act as the coordinators for the solid waste management program	Short term
	Adopt an area and work with the community to improve waste management practices	Short term
	Support enforcement by purchasing (needed) equipment	Short to Medium term
	Develop and implement a trash for cash program	Medium to Long term
	Sponsor solid waste management initiatives	Medium to Long term
	Professional continuing education seminars for members on disposal, green purchasing etc.	Short to Long term
	Provide awards for competitions	Long Term
	Establish a recycling plant	Long Term
JHTA	Develop Codes of Practice, Promote Green Globe and Blue Flag certification programs, assist with providing trained auditors.	Short to medium term
Citizens' Associations	Install garbage receptacles	Medium term
	Lobby agencies and advocate for change	Short term ¹
	Have block competitions (cleanest block)	Short to medium term
	Establish citizens watch for solid waste offences	Short term
	Emphasize sound solid waste management practices as an aspect of community events	Short term
	Have clean-up days	Short term
Church Groups	Formally adopt solid waste issues in overall activities and programs	Short term
	Encourage proper practices using photographs as a way to convey message	Short term
Service Clubs	Have clean-up days	Short term
	Provide funds to support solid waste management activities in communities	Medium term ²
	Provide training to community members and other groups	Medium to long term ³
	Act as a lobby group to encourage change	Short term
Schools	Include solid waste management as a formal part of education program	Short to medium term (ongoing)

¹ Short term – 3 to 6 years

² Medium term – 6 to 12 years

³ Long term – upwards of 12 years

Implementing Entity	Activities	Time Period
	Ensure that students within the school environment implement the appropriate solid waste management practices	Medium term
Parent Teachers Associations (PTAs)	Influence the management of schools to promote sound solid waste management practices	Medium term
	Support solid waste management programs through fund raising events	Short to medium term

Enforcement

The enforcement officers are:

- ✍ NSWMA supported by the Municipal Police (still to be established comprehensively across the island)
- ✍ Island Special Constabulary Force (ISCF)
- ✍ NEPA – Authorized officers
- ✍ Parish Councils – Municipal Police

The following strengths were identified:

- ✍ New legislation and upcoming regulations
- ✍ Growing public awareness
- ✍ Merger of Environmental Warden Service with ISCF
- ✍ Impending ticketing regime for littering

The following weaknesses were identified:

- ✍ Funding for operations and training
- ✍ Narrowly focused and sporadic training as well as limited number of trainers and limited training opportunities
- ✍ Inadequate recruiting process to increase numbers of enforcement personnel
- ✍ Premature termination of the Environmental Warden Service

The following opportunities were identified:

- ✍ Explore creation of legislation to appoint community members as enforcement officers
- ✍ Publish prosecutions of breaches of the law so that the law is seen at work
- ✍ Environmental Foundation of Jamaica (EFJ) could support training of community enforcers

The following threats were identified:

- ✍ The Office of the Parliamentary Counsel that drafts legislation is slow
- ✍ Slow pace of enactment of environmental laws
- ✍ High rate of non-compliance
- ✍ High incidence of corruption

Discussion

Persons raised questions about how to implement strong enforcement laws for perpetrators who are engaged in illegal practices which adversely impact on the environment. It was suggested by stakeholders that education is the solution to the problem, starting from informing persons about

the simplest environmental practices. It was also noted that stakeholders need to invest financially in public education, as the GOJ has a tendency to divert financing from this component first when faced with budget constraints.

Suggestions were made, that high fines should be placed on perpetrators who breach environmental laws. The Island Special Constabulary Force (ISCF) would have to play an active role in enforcement; hence an aggressive education program needs to be implemented, to educate them on the relevant environmental laws.

A suggestion was made for an emergency telephone hotline to be implemented at WPM Waste Management Ltd. Community groups could also come together to design an effective way of implementing their own solid waste disposal system.

Overall it was felt that:

- ✍ A system should be put in place to enforce municipal crimes,
- ✍ Persons within communities and law enforcement officers should be trained to be able to fulfill their respective roles in waste management
- ✍ Environmental wardens should be re introduced

Public & Private Service Delivery

Problem Statement

The rapid increase in volume, types of wastes and points of waste generation has caused the deterioration of waste collection services.

General Solutions

Problem Area	Activities	Responsibilities
Volume of waste	Separation into different types of wastes is required to facilitate recycling and composting	<ul style="list-style-type: none"> ✍ Waste Generator to separate ✍ Collector to provide appropriate service
	Incentives and sanctions should be used to encourage appropriate behaviour	<ul style="list-style-type: none"> ✍ NSWMA ✍ St. James Parish Council
	Develop and implement an innovative collection systems for those communities that do not receive curbside collection	<ul style="list-style-type: none"> ✍ Private garbage collectors ✍ WPM Waste Management Ltd. ✍ Community members
Types of wastes	Promote and encourage the use of recyclables <ul style="list-style-type: none"> ✍ Recycling of glass, plastics, paper and metals ✍ Composting 	<ul style="list-style-type: none"> ✍ Government/NSWMA ✍ NGOs ✍ Schools ✍ Communities

Problem Area	Activities	Responsibilities
	Develop policy and legislation to govern hazardous wastes so that they are separated from general waste	<ul style="list-style-type: none"> ✍ Ministry of Land and Environment – Establish policy ✍ NEPA – Implement policy ✍ NSWMA - Implement policy
	Develop policy and legislation to govern infectious medical wastes so that they are separated from general waste	<ul style="list-style-type: none"> ✍ Environmental Health Unit – Establish policy ✍ NSWMA - Implement policy
	Special management programme required for “transient wastes” such as food boxes, plastic bottles and cups, etc. (deposit refund scheme)	<ul style="list-style-type: none"> ✍ Ministry of Land and Environment – Establish policy which includes a container deposit refund scheme ✍ NEPA - Implement policy ✍ NSWMA - Implement policy

Specific Solution

Solutions	Partners	Time Period
<p>Urban Communities</p> <p>Establish collection depots within communities (on private sector donated lands) for recyclables as well as a Materials Recovery Facility (MRF) to extract recyclables on Government donated land</p> <p>Community members are responsible for taking recyclable waste to the depot</p> <p>Community can sell recyclables (paper, metal, plastic, glass) to service provider and income can be redirected into community programs.</p>	<p>NSWMA/WPM Waste Management Ltd., CBOs, NGOs (R2R), Parish Councils, Recycling service provider</p>	<p>Within 2 years</p>
<p>Rural Communities</p> <p>Establish a community composting centre on land donated by Parish Council/Government or farmers within the community</p> <p>With technical assistance from NSWMA start composting. Sell compost to local hardware shops and hotels. Ministry of Agriculture and RADA to help promote program.</p>	<p>CBOs, NGOs, Parish Council, Ministry of Agriculture/RADA</p> <p>Farmers, Local Hardware and hotels, NSWMA</p>	<p>Within 1 year</p>

Partnerships which need to be developed:

- ✍ Communities must know and be able to contact their service provider
- ✍ Private sector (e.g. hotels, restaurants etc. who are negatively impacted by improper waste practices) must develop a relationship with communities and work with them to find solutions to the waste management problems

Physical Infrastructure

Problem Statement

Due to the lack of proper planning and insufficient revenue collection by local and national governments, infrastructure such as roads and gullies are not developed and maintained in accordance with the requirements of communities. There is also a failure to address squatter settlements in a comprehensive way to prevent the reoccurrence of the phenomenon. These issues result in communities facing serious environmental and health hazards.

Solutions

Problem	Solutions	Responsibility
<p>Poor infrastructure</p> <p>(a) Bad roads preventing trucks from accessing communities</p> <p>(b) Gullies full of garbage which are not cleaned</p>	<ul style="list-style-type: none"> ✍ To improve gullies and roads establish partnerships where each member makes a contribution towards fixing the problem ✍ Set target to reduce waste generation by a given amount within a defined timeframe ✍ Educate community members to enable them to manage their waste better and reduce, reuse and recycle ✍ Establish recycling enterprises within communities for plastics, glass and organic waste 	<p>To improve infrastructure develop partnerships with:</p> <ul style="list-style-type: none"> ✍ Community Groups (can be Gardening Co-ops, Benevolent Societies or Citizens Associations) ✍ SDC ✍ St. James Parish Council ✍ Businesses within the community ✍ Private businesses with a vested interest <p>To address waste management practices develop partnerships with:</p> <ul style="list-style-type: none"> ✍ Montego Bay Marine Park ✍ COMMAND ✍ NSWMA
<p>Non-compliance with laws</p>	<ul style="list-style-type: none"> ✍ Enforce the laws relating to improper sanitary practices and use fines as a mechanism to control behaviour ✍ Enforce laws related to squatting ✍ Enforce legal requirement for property taxes to be paid 	<p>Parish Council, NSWMA, Ministry of Finance/Ministry of Local Government</p>

CASE 1

Recommended approach to address poor roads within a community so that the garbage truck can access the community

First Quarter

- ✍ Identify road to be improved

- ✍ Write letters to the St. James Parish Council and private sector regarding the provision of equipment and materials respectively for road improvement and indicate that the community will provide labour
- ✍ Educate community about sorting garbage in preparation for collection of garbage that cannot be composted
- ✍ Improve road surface

Second Quarter

- ✍ Request regular garbage collection from WPM Waste Management Ltd.
- ✍ Strengthen existing community structure so that other environmental initiatives can be undertaken within the community

Third Quarter

- ✍ Maintain road
- ✍ Continue education within community regarding solid waste management (reducing, reusing and recycling) with assistance from WPM Waste Management Ltd., the Montego Bay Marine Park and hotels

Fourth Quarter

- ✍ Institutionalize recycling and composting projects within communities with assistance from WPM Waste Management Ltd., the Montego Bay Marine Park and hotels

CASE 2

Recommended approach to develop a waste reduction enterprise within the community

First Quarter

- ✍ Establish a steering committee to oversee the development and implementation of the project
- ✍ The Steering committee is to develop a waste reduction and recycling plan with assistance from WPM Waste Management Ltd., the Montego Bay Marine Park and hotels
- ✍ The types of waste generated by the community is to be assessed and classified

Second Quarter

- ✍ Quantify the types of wastes (organics which are compostable such as wood and paper and the non-biodegradable waste such as glass, plastics and metal)
- ✍ Select the easiest to start working with e.g. organic waste for composting
- ✍ Identify storage location (for bins)
- ✍ Refine plan

Third Quarter

- ✍ Submit plan to funding agencies e.g. EFJ, USAID, JSIF, CIDA Green Fund, Ministry of Health, Private businesses (Garden enterprises)
- ✍ Community to raise funds towards the program by having fund raising events
- ✍ Community receive ongoing training in composting with assistance from WPM Waste Management Ltd., the Montego Bay Marine Park and hotels

Fourth Quarter

- ✍ Start implementing the project

Awareness and Outreach

Problem Statement

Lack of public awareness as it relates to the consequences of our actions/behaviour and our power as a people to make positive change.

Solutions

Recommendations	Partnerships	Time Period
<p>Formal Education System</p> <p>Strengthen school curriculum to include information on solid waste management</p> <p>Schools should have an environmental club</p> <p>Lobby policy makers to hold workshops for retraining of teachers on the subject of solid waste management</p> <p>Funding: Government; International Funding Agencies</p>	<p>Ministry of Education, Teacher Training colleges, PTAs, GMRC, MBMP, CBOs, GRWC, NEPA</p>	<p>2004-2007</p>
<p>Informal Education System</p> <p>Community outreach e.g. adult education through churches, Youth Clubs, Service Clubs, Professional Organizations, Community Groups</p> <p>Funding: International Funding Agencies; private/business sector</p>	<p>NGOs, CBOs (such as COMMAND), NSWMA, NEPA, Public Health, ODPEM, SDC, St. James Parish Council</p>	<p>Now - 2004</p>
<p>Lobby for Public Health Inspectorate to be strengthened to met the needs of the communities.</p> <p>Conduct community profiles and needs assessments to determine gaps</p> <p>Funding: Proposal to donor agencies to fill gaps</p>	<p>Parish Council, SDC, ODPEM, CBOs and NGOs</p>	<p>Now - 2004</p>

Information is to be disseminated on:

- ✍ Waste reduction
- ✍ Reuse
- ✍ Waste separation to facilitate recycling and composting of organic wastes

- ✍ Recycling of plastics, paper, metals, glass, cardboard etc.
- ✍ Proper sanitation practices
- ✍ Legislation and sanctions for breaches of the law
- ✍ Community initiatives

Public education strategies include:

- ✍ Implementing a recycling campaign
- ✍ Publicizing sanctions/ penalties for breaching the laws
- ✍ Ensuring that the design of the message is appropriate for the target group
- ✍ Establishing a Hall of Fame/Hall of Shame; recognizing 'community champions'
- ✍ Developing specific community outreach programs
- ✍ Having school and community competitions related to solid waste management and give meaningful awards
- ✍ Providing incentives for communities and schools to improve their waste management practices

Tools that should be used:

- ✍ Signs to help direct persons in the appropriate practices
- ✍ Reality graphics and scare tactics to encourage behaviour change e.g. the dangers of burning garbage
- ✍ Bill boards and murals
- ✍ The media (TV, cable TV, radio), J .I. S. film shows, D.J.s, didactic theatre
- ✍ Videos
- ✍ Field trips (schools and adult education) to demonstrate practical aspects of theory
- ✍ Group/community meetings

SUMMARY: Youth and the Environment Conference

Participants

91 young persons, inclusive of three teachers participated in this year's conference. This was a similar number to the first conference. This number is inclusive of sixteen persons from the Rio Grande Watershed communities and wider Portland who also attended. In addition, officials from USAID, NEPA Public Education, GRWMC Executive and Public Awareness Task Force, The Executive Director of Jamaica 4H Clubs, and the Executive Director of NEPA, NEPA Parish Officer, and Exhibitors spent quality time at the Conference. In total, 31 communities from Western Jamaica, and 9 from Portland were represented. This represented a wider coverage for environmental education than was achieved in year one.

Exhibitors

There were nine booths or tables, operated by the following:

- ✍ Ridge to Reef Watershed project
- ✍ Institute of Jamaica.
- ✍ National Environment and Planning Agency
- ✍ College of Agriculture Science and Education
- ✍ Jamaica 4H Clubs.
- ✍ National Solid Waste Management Authority
- ✍ Forestry Department
- ✍ Pesticide Control Authority
- ✍ Water Resources Authority
- ✍ CASE, in particular, focused on career opportunities information for the three days

Presenters

There were four main presenters and two guest speakers on Day 1; three youth presenters and two creative artistes performance on Day 2; one Judge from the Montego Bay Little Theatre Movement, two Ridge to Reef co-presenters on Advocacy on Day 3; and one Ridge to Reef Quiz "Master" on Day 3. The presentations were all focused on the Conference's theme of 'Youth protecting the environment, protecting the future.' See plate below depicting a youth presenter.

Conference Program Summary

Conference Day 1

Pick up to Team Work Auditorium

The participants were transported from the #1 Post Office to the venue. Names were then recorded on the Registration sheet. Nametags also used for group assignment were then handed to each registered participant. A package, which consisted of the Conference program, brochures on endemic and endangered species found in Jamaica, the Great River Watershed and the Rio Grande Watershed as well as a Questionnaire was also given to each person.

Opening Ceremony

Highlight of the Opening Ceremony are as follows:

- ✍ The Minister of Tourism, the Honourable Aloun Assamba opened the Conference after giving a stimulating talk on the link between Tourism and the Environment, with references to the 10 Year Master Plan for Tourism, which includes an emphasis on community tourism. See photo below.
- ✍ Other speakers offering greetings at the Opening Ceremony included Mark Nolan, Chief of Party Ridge to Reef; Don Streete Chairman of the GRWMC; Mr. Lenworth Fulton of the Jamaica 4-H Clubs, Mrs. Patricia Sinclair McCalla- CEO of NEPA and Mr. Howard Batson Director Office of the Environment at USAID-Jamaica.
- ✍ An excerpt from “Magic Trees” presented by some members of the Port Antonio Theatre Group, a resource group responsible for environmental education through drama in the Rio Grande Watershed.
- ✍ Presentation of the Hon. Minister with a framed ‘It haffi legal’ poster.

The names of the other relevant presenters on Day 1 and the title of their presentations are summarized below.

- ✍ “The impact of land based practices on marine life” – Richard Kelly, from Fisheries Department
- ✍ “Poverty, Population and the environment”- Lemuel Brady, from the Western Conference of Seventh Day Adventists
- ✍ “The function of Wetlands” Leo Douglas, Ridge to Reef Watershed Project
- ✍ Water conservation interactive games, lead by Natalie Morgan Ferguson from Water Resources Authority
- ✍ Imani Duncan, the guest speaker at the Public Session that evening, spoke as one youth to others, on her life journey starting in high school as an environmentalist, and her personal commitment to even correcting a driver who threw waste out of his car. She was well received and the question and answer period was personal and informative, even for the youngest participants.

Day 1 ended with the Action Boyz’ educational skit “Wha yu dash weh nuh wash weh”. It was well received and community representatives who had not seen them before expressed interest in having them perform in their communities.

Conference Day 2

Day 2 was a full day for the participants. The first part of the Day consisted of a Field Activity and a Field Trip. The field Activity took place at the Retrieve Community. The participants were engaged in ‘Plant lumber trees given to the conference by the Forestry Department. The Retrieve Community will maintain those trees and the Action Boys had the task of ensuring that the Community does so. The participants were also given a tour, by Neville Williams and Barry Taylor, of the Constructed Wetlands, situated at the Retrieve All Age School.

After the Tree planting and Constructed Wetland tour, the group was treated to a delicious lunch.

The next stop on the agenda was a Field trip to the Swamp Safari, natural wetlands in Trelawny. The group went on a tour of the compound, where they learnt about the different types of crocodiles that were found in Jamaica, saw and learnt the names of endemic birds, snakes and lizards.

After the field visit, the group then returned to Team Work, where they refreshed themselves and had dinner in preparation for the evening program.

Mackie Conscious and Fabian Thomas were booked for the night to entertain the participants.

- ✍ Mackie Conscious - An environmentally conscious popular singer, performed two of his original hit songs.
- ✍ Fabian Thomas - A drama educator from the Montego Bay Little Theatre Movement, gave an interactive talk on techniques in creative drama.

After this the group was divided into two workshop groups, one (song writing) group went to Mackie Conscious and the other (drama) group went to Fabian Thomas. Mackie Conscious spent time with his group teaching them how to manage song writing, copyright procedures, and techniques in stage performance. At the end of the workshop, the group came up with a song composed of original lyrics and performed a creditable environmental song. Fabian Thomas facilitated a group of participants who were taught techniques in drama writing, acting and presentation, after which, the group produced and performed a drama piece of very high quality.

Day 2 ended with an excellent acrobatic dance routine by the Action Boyz from Retrieve Community, and some of the participants performed in dance, song, poetry, drama- which proved to be a well executed extension to the creative works of the evening. This segment was managed by Ryan Dixon, summer intern with R2RW, and Andy Grant, representative from Lamb's River. A high level of talent was evident in that evening's offerings.

Conference Day 3

Eight groups comprising approximately twelve persons each, developed and performed entries for a Creative Arts competition. This was judged by Onyije Chigozili from NEPA, Sonja Harris from Ridge to Reef, and expert Judge Douglas Prout, head of the Montego Bay Little Theatre Movement. He presented the findings and reasons for the winning performance, which was an excellent piece called "Story Time," which used human bodies as valuable fruit and lumber trees.

Trevor Spence and Sonja Harris later co-presented on Advocacy, a theme that had already been alluded to in previous presentations by participants. The lecturette focused on, going beyond the fun and games of community animation, to doing the needed research for organizing a lobby or petition group to change a critical environmental situation. Four groups were then given the responsibility to organize a drama piece outlining the steps they would take in building an advocacy movement in response to situations of poor sanitation contributing to river pollution; Styrofoam use by shopkeeper; and transforming community hostility to a local level politician, when a health hazard is not addressed and when a needed service that could benefit the environment is not quickly delivered.

The Environmental Quiz competition was a very exciting and closely run race with one person from each of the eight groups sitting on two panels of four, vying for the winning place. The quality of responses was one clear indicator that participants were much more knowledgeable this year than last year, on a range of environmental topics. Both groups were well matched and in fact there were no losers.

Media Coverage

Media response to the Conference was outstanding. There was extensive Radio coverage in which two programs were aired live on location – Tony Laing and Company from Power 106 and Rosie Murray’s Teen Jam from KLAS-FM. Marline Stephenson from Hot 102 voiced numerous promos for the Conference. The highlight of the coverage was an RJR interview with Trishana McBean, age 11 years old, from Vaughnsfield Primary. Trishana was one of the winners in the 4H Environmental Challenge Competition. Others interviewed were Ridge to Reef staff and a number of youth representatives from the Conference, including the Action Boyz.

Enviro Kit Distribution

#	Name	Title	Organization	Address	Tel.#	Fax. #	E-mail Address
1ST Sets of Environment Kits Distributed							
Partner Agencies							
1	Michael Barrett	Regional Officer	Forestry Department	RADA Building, Catherine Hall, Montego Bay, St. James	952-0848		
2	Clinton Brown	Parish Development Officer	4-H Clubs	6 Allen Avenue, Port Antonio, Portland	715-3859 399-6777	715-3859	
3	Mrs. Nelson	Case Library & Environmental Club	CASE	Passley Gardens Port Antonio Portland	993-5436- 7/ 993- 5496/993- 5489	993-5546	
4	Onyije Chigozili Contact: Grace Turner	Community Animator Manager, Public Education & Corporate Communications Branch	NEPA	10 Caledonia Avenue, Kingston 5	754-7540 ext 2437	754-7596	ochigozili@nepa.gov.jm
5	Sherman Cogle	Parish Coordinator	Jamaica Agricultural Society	12 Church Street, Montego Bay, St. James	952-2552 402-9075	952-2552	
6	Machel Donegan	Chief Executive Officer	Portland Environmental Protection Agency	6 Allan Avenue, Port Antonio, Portland	993-9632	715-3705	pepa@cwjamaica.com
7	Cynthia M.Perry	Regional Manager V.P.	PEPA	P.O. Box 151, Port Antonio, Portland	993-2587	993-2117	delis@visitjamaica.com

#	Name	Title	Organization	Address	Tel.#	Fax. #	E-mail Address
8	Thera Edwards	Former Manager	Sustainable Watersheds Branch	NEPA, 10 Caledonia Avenue, Kingston 5			tedwards@uwimona.edu.jm
9	Susan Otuokon	Executive Director	JCDT	29 Dumbarton Avenue Kingston 5	960-2848-9		
10	Ralph Fallon	Field Officer	SDC	5 Smatt Road, Port Antonio, Portland	993-2644	933-2644	
11	Lenworth Fulton	Executive Director	Jamaica 4-H Clubs	95 Old Hope Road, Kingston 6	927-6239	978-3209	
12	Vimin Gayle	Manager	Public Education Branch	NEPA, 11 Caledonia Avenue, Kingston 5	754-7540	754-7598	
13	Richard Harrison	Permanent Secretary	Ministry of Agriculture	Hope Gardens, Kingston 6	927-1741 927-1731		
14	Dr. Robert Logan	Vice Chairman – LCTF	CASE	Passley Gardens, Port Antonio, Portland	993-5436 993-5437 993-5548	993-5546	
15	Karelle McCormack	Public Relations Officer	Jamaica 4-H Clubs	95 Old Hope Road, Kingston 6	927-4050 to 2	978-3209	jamaica-4h@cwjamaica.com
16	Ivel McLean	Community Development Officer	SDC	Albion Road, P.O. Box 839, Montego Bay, St. James	952-6814 952-9211		
17	Yolanda Mittoo	Librarian	NEPA	10 Caledonia Avenue, Kingston 5	754-7515		
18	Natalie Morgan-Ferguson	Hydrologist	Water Resources Authority	Hope Gardens, P.O. Box 91, Kingston 7	927-0077	977-0179	nemorgan@colis.com
19	Annette Patterson-Smith	Senior Librarian	Ministry of Agriculture	Hope Gardens, Kingston 6	977-0580	977-9337	library@moa.gov.jm

#	Name	Title	Organization	Address	Tel.#	Fax. #	E-mail Address
20	Pennant	Joseph	Assistant Hydrologist	Water Resources Authority	Hope Gardens, Kingston 7	927-0077 702-3952	
21	Carla Peterson	Environmental Education Officer	JCDT	29 Dumbarton Avenue, Kingston 5	920-8278 to 9	960-2850	jcdt@jcdt.org
22	Albert E. Shand	Executive Director	RADA	Hope Gardens, Kingston 6	977-0689	970-3518	executive@radajamaica.com.jm
23	Danny Simpson	Forestry Supervisor	Forestry Department	20 Folly Road, Port Antonio, Portland	993-3843 399-2825	924-2626 993-3731	
24	Nadine Simpson	Community Development Officer	Social Development Commission	5 Smatt Road, Port Antonio, Portland	993-2644 445-2257	993-2644	
25	Ridley Badusingh	Acting Deputy Parish Agricultural Manager	RADA	20 Folly Road, Port Antonio, Portland	993-3843 399-2825	924-2626 993-3731	
26	Col. Wallace Sterling	Vice Chairman	RGWMC Moore Town	Moore Town P.O. Portland	867-6939		
27	Don Streete	Former Chairman – GRWMC	National Water Commission	4-6 Marescaux Road, Kingston 5	990-7242		dstreete@colis.com
28	Glen Sutherland (for David Parkes)	Planning Departments	Portland Parish Council	1 Gideon, Avenue, Port Antonio, Portland	993-2665 993-2765		
29	Barrington Taylor	Environmental Officer	NEPA	RADA Building, Catherine Hall, Montego Bay, St. James	399-2945	940-6805	
30	Selvyn Thompson	Environmental Officer	NEPA	5 Smatt Road, Port Antonio, Portland	715-6933 866-5907	715-6933	tryi2003@yahoo.com

#	Name	Title	Organization	Address	Tel.#	Fax. #	E-mail Address
31	Horace Underhill	Parish Manager	RADA	Catherine Hall, Montego Bay, St. James	952-1876		
32	Linette Wilks	Community Environmental & PA Officer	Jamaica Conservation and Development Trust	29 Dumbarton Avenue, Kingston 10	920-8778 to 9		
33	Jill Williams	Executive Director	Montego Bay Marine Park	Pier 1, Howard Cooke Boulevard, Montego Bay, St. James	952-5619	940-0659	
34	Thelma Williams	Chairperson – LCTF	Jamaica Agricultural Society	11 Harbour Street, Port Antonio, Portland	715-6577		
35	Maxine Hinds	P.R.O.	Forestry Dept.	83 Constant Spring Road, Kingston 8	924-2667-8 924-2612 905-2578		
Other Agencies							
36	Sherlock Allen	Present Executive Member	Mavis Bank Teachers & Vocational School	Jamaica Teacher Association, c/o 97 Church Street, Kgn	967-0666 948-1776 922-1385		
37	Ivan Anderson	Chief Executive Officer	National Works Agency	140 Maxfield Avenue, Kingston 10	926-3210	926-2572	
38	Laurie Berman	Peace Corps Volunteer	PCV	Grand Valley Tours, Port Antonio, Portland			
39	Patricia Tyrell	Public Relations Specialist	National Irrigation Commission	191 Old Hope Road, Kingston 6	977-4022		
40	Dawn White	Project Manager/ Coordinator	Portland Parish Development	Shop 29 Village of St. George, Port Antonio, Portland	715-6553		dmariwhite@yahoo.com

#	Name	Title	Organization	Address	Tel.#	Fax. #	E-mail Address
Schools							
41	Damian McNeil	Student	Knockalva Agricultural School	Ramble P.O. Hanover			
42	Patricia Scarlett	Teacher	Pisgah All-Age School, Parish Contact, Faith and Environment	Pisgah, St. Elizabethr	352-3247 843-0088 456-3741		
43	Dr. Angela Samuels	Vice Principal	Montego Bay Community College	Alice Eldermire Drive, P.O. Box 626 Montego Bay, St. James	979-8164/979-8150		
Private Sector							
44	Hugh Cresser		EAST Project	c/o JHTA, 2 Ardenne Road, Kingston 10	926-3635/ 908-1032		
45	Cleveland Wright	Vice Chairman – PMTF	Round Hill Hotel	Bluff, Montego Bay, St. James	956-7050-5 956-7505		
Anchor Project Managers							
46	Pattie Bedasse	Coordinator Anchor Project	Cleaning and Greening Cambridge	Cambridge District, St. James	912-3571 942-9502 912-3571 881-9659		bedasse@hotmail.com janpat54@yahoo.com
Faith Groups							
47	Pastor Michael Harvey	Director of Youth Programs	Western Jamaica Conference of SDA	P.O. Box 176, Mount Salem, Montego Bay, St. James	952 4820 (W) 952-3291 359 7772 (C)		mhgodfrey2003@yahoo.co.uk

#	Name	Title	Organization	Address	Tel.#	Fax. #	E-mail Address
Community Groups							
48	Olive Aiken	Bellevue DDC	Bellevue District	Rio Grande, Portland			
49	Alfonso Bailey	Community Representative	Port Antonio Police Youth Club	Eveliegh Park Road, Portland			
50	Anthony Baronette	Deputy Secretary – GRWMC	Tri Star Police Youth Club	Cambridge District, St. James			
51	Maisilyn Campbell	Present Prospect Community Association	Prospect Community Development Association	20 Land Settlement Road, Prospect, Port Antonio, Portland	715-3860		maisilyncampbell@hotmail.com
52	Ian Clennon	Farmer	Catadupa Farmers' Group	Catadupa P.O. St. James	839-5376		
53	Dwayne Downer	Prospect Football Club	Prospect	Portland			
54	Vachesha Foster	Community Member	Content Progressive Youth Club	Content 2, Ramble P.O. Hanover			
55	Collin Hutchinson	Community Representative	Prospect Youth Club	31½ Folly Road, Port Antonio, Portland			
56	Patrick Gardner	York District	Castle Heights Youth Club	Bethel Town, Westmoreland	362-4360 417-0235		
57	Curtis Groulx	President	Cedar Grove Environmental Club	Cedar Grove, Bethel Town P.O. Westmoreland	875 6291 (C) 428-2872 Justin Groulx		
58	Woodrow Hartley	Community Representative	Spring Bank Citizens Association	28 Spring Bank Road, P.O. Box 71, Portland	889-7777		
59	Cynthia Hinds	Community Representative	Rio Grande Development Area	Hope Bay P.O. Portland			

#	Name	Title	Organization	Address	Tel.#	Fax. #	E-mail Address
60	Deanna Hunter	Secretary – PMTF	Mafoota Farmers' Group	P.O. Box 48, Anchovy P.O., St. James			
61	Andrea Johnson	Passley Gardens Land Settlement Association	18 Folly Road	Pot Antonio, Portland			
62	Sophia Lennox	Community Representative	Houghton Grove	Ramble P.O. Hanover			
63	Cebert McFarlane	President	Bethel Town CDC	New Mills, Bethel Town P.O. Westmoreland			
64	Joel McLeod	Vice President	Shettlewood Police Youth Club	Shettlewood District, St. James			
65	Sybil Rendle	Chairman	Rose Garden PDC	Long Bay P.O. Portland	715-6553 715-5466		
66	Carol Robinson	Deputy Secretary – GRWMC	Community Development Committee	Stonehenge P.O. Chesterfield District, St. James	424-8365		kimbling2003@yahoo.com
67	Veronica Thaxter	President Fellowship CDC	Grand Valley Town	P.O. Box 203, Port Antonio, Portland			
68	Cyrus White	Community Representative	St. Margaret's Bay CDC	St. Margaret's Bay, Portland			
69	George Williams	Community Representative	Bryan's Bay Beach	Bryan's Bay, Port Antonio, Portland			
70	Lloyd Witter	Community Representative	Copse Police United Youth Club	Copse P.A. Copse, Hanover			
71	Layfette McDonald	President	Windsor CDC	Windsor, Portland	993-2644		
Youth Representatives							
72	O'Neil Baugh	Youth Representative	Windsor	Rio Grande P.A. Portland			

#	Name	Title	Organization	Address	Tel.#	Fax. #	E-mail Address
73	Gavin Ming	Youth Representative	Windsor	Rio Grande P.A. Portland			
73 ENVIRO KITS DISTRIBUTED IN THE FIRST SET							
2nd Sets of Environment Kits Distributed							
Partner Agencies							
1	Mrs. Barbara Lawrence	4-H Parish Officer	4 – H Clubs	RADA Complex, Catherine Hall	940-5360	940-5360	
2			USAID (3 KITS)	Haining Road Kingston	926-3645		
3	Heather McFarlane	Community Relations	MBMP	Pier 1, Montego Bay	416-6184		
4	Maureen Campbell	Member	Port Antonio Theatre Group	Portland			
5	Grant Caryl	Community Mobilization specialist	CWIP 11	Port Antonio, Portland	383-4376		
6	Nadine Simpson	Community Development Officer	Social Development Commission (2 KITS)	5 Smatt Road, Port Antonio	993-2644 445-2257	993-2644	
7	Vivienne Cherington Bailey	Community Development Officer	SDC	5 Smatt Road, Port Antonio	993-2644		
8	Steven Riviere	Member	PATF, GRW				
9	Trevor Spence	R2RW Consultant	R2RW	5 Oxford Park Avenue, Kingston 5	754-3310-2	754-3313	
10	Leo Douglas	Former Logistics Specialist	R2RW	5 Oxford Park Avenue, Kingston 5	754-3310-2	754-3313	
11	Hugh Graham	Watershed Specialist	R2RW	5 Oxford Park Avenue, Kingston 5	754-3310-2	754-3313	

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12	Leon Hopkins	Executive Member	GRWMC	Montego Bay	956-5366 799-6060 (C)		leon_hopkins2001@yahoo.com
Other Agencies							
13	Llewlyn Megs	Acting Education Officer	Institute of Jamaica	10-16 East Street Kingston	922-0620 948-8114 - 9		
14	Dawn White	Project Manager/ Coordinator	PDC	Port Antonio, Portland	715-6553		
Schools							
15	Linda Singh	Teacher/4 H Leader	Vaughansfield Primary and Infant School	Falmstead Gardens P.A. St. James	397-9615		
16	Nickesha Thorpe	Class Teacher – 4-H Environmental Club Leader	John's Hall All Age School	John's Hall All Age, John's Hall P.O., St. James	434-4502		
17	Geogery Hewitt	Teacher/ 4-H	Herbert Morrison Technical High	Herbert Morrison Technical High, Bogue, Montego Bay	885-5326		
18	Ephraighn Morgan	Principal	Knockalva Technical School	Ramble P.O., St. James	816-8626		
19	Mrs. I. Williams	Principal	Cambridge Infant	Cambridge P.O. St. James	912-2246		
20	Mr. Rudolph McFarlane	Principal	Cambridge High	Cambridge P.O. St. James	912-2370		
21	Sharon Grant	Guidance Councillor	Cambridge Primary	Cambridge P.O. St. James	912-2813		
22	Mrs. M. Lewis	Vice Principal	Bickersteth Primary/ Infant	Bickersteth P.O. St. James	605-0478		

#	Name	Title	Organization	Address	Tel.#	Fax. #	E-mail Address
23	Mrs. Rudduck - Fearon	Principal	Cambridge Basic	Cambridge P.O. St. James	469-6277		
24	Mr. Noel Scott	Principal	Retrieve All Age & Basic	Retrieve District, Cambridge P.O.	389-0570		
25	Heckford Brown	Acting Principal	Knockalva Agricultural School (2 KITS)	Ramble P.O., St. James			
26	Nerene Stewart	President	Ecology Club Montego Bay Community College	Alice Eldemire Drive, Mo-Bay			
27	Paul Morrison	Vice Principal	Team Work Christian School	Torado Heights Carol Gardens, Montego Bay		857-4327	
28	Bertram Bennett	Head of the Agronomy Department	Knockalva Agricultural School		Ramble, P.O., Hanover		
29	Kadian Coote	President	Environmental Club	CASE	Portland	421-3785	
Private Sector							
31	Hugh Cressar		EAST Project	2 Ardenne Road, Kgn. 10	926-3635 9081032		
32	Cleveland Wright	V ice Chairman	GRWMC	C/O Round Hill Hotel, St. James	956-7050-5 956-7505		
Anchor Project Managers							
33	Pattie Bedasse	Coordinator Anchor Project	Cleaning and Greening Cambridge	Cambridge District, St. James	912-3571 942-9502 912-3571 881-9659		bedasse@hotmail.com janpat54@yahoo.com
34	Dawn White	PPDC for use by her animators	Project Coordinator	Portland	371-3620		

#	Name	Title	Organization	Address	Tel.#	Fax. #	E-mail Address
Resource Persons							
35	Lemuel Brady	Pastor	Western Conference of Seventh Day Adventists	Mt. Salem, Montego Bay	952-3291 952-4820		
Faith Groups							
36	Valerie O'Brien	Bahai Representative	Bahai	Montego Bay			
37	Rev.Galbraith	Parish Contact, Methodist Church	Methodist & Faith & Environment	Methodist Manse, Upton Drive MoBay, St. James	979 6968 (W) 816 7726 (C)		
38	Rev. Glendon Powell	Representaive	Flankers Open Bible Church / Open Bible Standard Churches	P.O. Box 883, Mo-Bay, St James	952 0159 (W) 883 9609 (C)		
39	Ibrahim Bucknor	Muslim Representative					
40	Saju Jagwani	Sai (Hindu) representative		Montego Bay			
41	Rev. Lloyd Rosegreen	Parish Contact	Faith & Environment	Hanover			
42	Ahmad Roy Golaub	Parish Contact	Faith & Environment				
43	Carmaine Solomon		Hallelujah Jamaica				
Community Groups							
44	Lebert Dennis	President	Catadupa United Youth Club	Catadupa P.O., St. James	979-6423 858-5581		
45	Andy Grant	President, Lambs River Youth Club	Lambs River Y/C	Lambs River P.O., St. James	353-3750 , 843-5523	953-3372	
47 ENVIRO KITS DISTRIBUTED IN THE SECOND SET							

Findings of Rio Grande Watershed First Phase Out Workshop

Component	Launch Activity	Apr - Jun	Jul - Sep	Oct - Dec	Jan - Mar	Victory Complete
Identify needs and institute training programs 4 votes	Identify existing needs through assessment in designated community	Determine data and training needs of participants Complete and submit training proposal and budget	Sensitize participants and implement training Continue training including proposal writing and fund raising	Evaluation workshop	Communities implementing sub-projects	Increased compliance and enforcement at the community level
Establish a finance committee to secure funding locally, regionally, and internationally (from government and non-government entities) 7 votes	Establish a finance sub-working group of RGWMC	Identify key members to sit on committee Identify and develop activities and action list to raise funds Identify training needs of committee	Establish a trust fund Set up accounting system including accounting software	Design project activities to raise funds from donors e.g. EFJ Establish business ventures where products of RGWMC can be sold e.g. craft, hiking	Determine business services RGWMC can deliver e.g. MBMP Stage fund raising events e.g. watershed festival, environmental fair.	Income generating activities in place
Streamline all administrative functions 4 votes	Hold meetings with stakeholder agencies	Identify lead agency to assume and coordinate specific tasks Coordinate special meetings with all stakeholders	Strengthen RGWMC Renew commitment of stakeholders through MOUs	Develop rules, regulations and procedures – by-laws , hand book, etc for operation of trust fund and management committee	Execute official launch of “new” sustainable organization	Official turning-over of task forces and lead agencies

Component	Launch Activity	Apr - Jun	Jul - Sep	Oct - Dec	Jan - Mar	Victory Complete
Rationalize organizational structure of the RGWMC/LWMC 6 votes	Signing of MOU between stakeholders and PDC	Series of stakeholder sensitizations Select executive members for committee	Executive committee to develop action plan Advertise and employ administrative personnel	Review and analyze achievements of previous quarter	Formulate plans for next project year	A functioning sustainable organization

Land Management Anchor Project Gantt

Activities	2004												2005						Responsibility
	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	
1.0 Approve/Implement Three (3) Community Agroforestry Projects																			
1.1 Receive/appraise grant applications																			WMS, Project Coordinator, S. Thompson
1.2 Individual site visits/completion of farm plans																			Project Coordinator
1.3 Final screening/selection of beneficiaries																			WMS, Project Coordinator & RADA
1.4 Community group sensitization																			Project Coordinator, PPAPRS, RADA
1.5 Procure & schedule delivery of materials																			WMS, Project Coordinator, Agronomist
1.6 Promotional & technical field day																			WMS, Project Coordinator, RADA
1.7 Continue individual plot establishment																			Project Coordinator, Farmers
1.8 Monitor & report on progress																			Project Coordinator
2.0 Implement RGW Tree Planting Initiative																			
2.1 Meet with partners RADA & FD																			WMS, Project Coordinator
2.2 Identify sources of quality planting material																			Project Coordinator, WMS, Agronomist
2.3 Identify beneficiaries																			Project Coordinator, WMS, S. Thompson
2.4 Site evaluations																			Project Coordinator, WMS
2.5 Monitor land preparation & distribute inputs																			Project Coordinator
2.6 Monitor & report on progress																			Project Coordinator, WMS
3.0 Introduce & Promote Environ. Sustainable Cropping Practices																			
3.1 Introduce and promote new cropping systems																			Project Coordinator, WMS, Agronomist, RADA

Activities	2004												2005						Responsibility
	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	
3.2																			Project Coordinator, Coffee Board
3.3																			Project Coordinator, RADA
4.0	Increase Understanding of Natural Resource Issues & Conflicts in RGW by Conduct of Special Studies																		
4.1																			WMS
4.2																			WMS
4.3																			WMS
4.4																			WMS
5.1																			Project Coordinator, PPAPRS
5.2																			Project Coordinator, WMS, Agronomist, PPAPRS, RADA
5.3																			Project Coordinator, WMS, Agronomist, PPARS, GNRS
5.4																			Project Coordinator, WMS, PPAPRS & JCDDT
5.5																			
5.6																			Project Coordinator, WMS, Agronomist, PPARS
6.0																			

Sediment Budget 1st Report Summary

Background

This study, for which this document is the second quarterly report, is for a one-year investigation of the Rio Grande fluvial system and the beach system at St. Margaret's Bay in order to make a preliminary determination of the sedimentary budgets of these systems. The study was commissioned by ARD as a part of the Ridge to Reef Watershed Project.

Purpose of the Study

The purpose of the study is to investigate the various natural processes that occur within the Rio Grande watershed in order to estimate the rate of sediment production in the watershed and to measure the rate at which it moves through the system to the sea. Estimates are being made of the amount of sediment generated in the watershed through weathering and downslope processes and the amount lost to the sea on an annual basis. Storage of sediment in the system is being evaluated, especially in relation to the amounts of material removed by mining activities. The parallel study of the St. Margaret's Bay beach system is designed to identify the processes that contribute to the delivery of sediment from the Rio Grande to the beaches and removal of sediment from the beaches. It also aims to identify the various sediment sources and sinks for the beach and estimate the size of the sources and probable rates of replenishment of the source material.

Expected Impact on Watershed Management and Policy

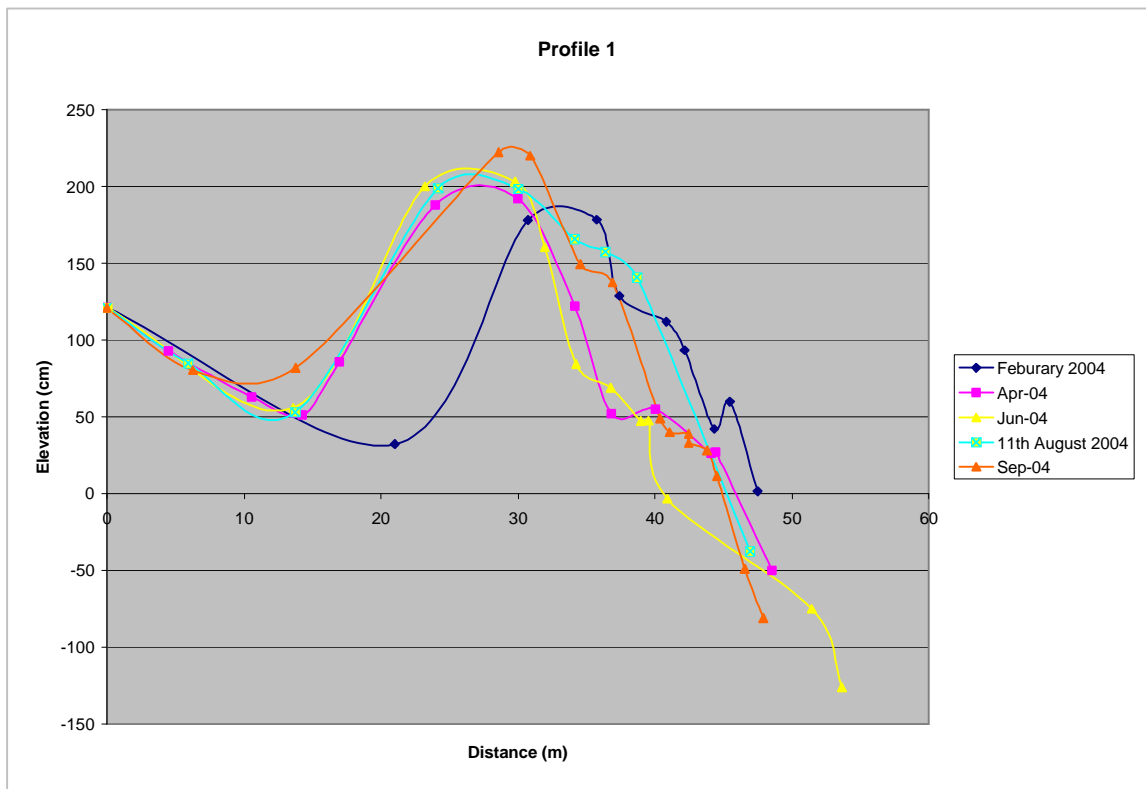
The study will enable estimates to be made of sand and gravel reserves in the riverbed and the expected rate of replenishment; estimates to be made of sand and gravel supplies to the beach and removal from the beach. These findings can then be assessed in relation to the mining activities and to the beach erosion that have been taking place. The results of the assessments can be applied to the management policy for the watershed, in particular in setting out limits for sand and gravel removal from the watershed, in particular in setting out limits for sand and gravel removal from the riverbed. In the Bay, the results will enable decisions to be made regarding the feasibility of such questions as using beach nourishment versus hard protection of the shoreline.

Summary

This, the third quarterly report, is relatively short as work in this time period was related to monitoring activities, primarily at St. Margaret's Bay. Additional work on the Rio Grande itself is currently in progress and will appear in the next quarterly report. This will be followed by the final report.

Beach Profiling

St. Margaret's Bay Beach Profiles



Profile 1

Beach profiles measured along the St. Margaret's Bay coastline:

- (a) Beach West of profile. Photo taken 28/09/04
- (b) Beach East of profile. Photo taken 28/09/04

Surveying was continued in September following the passage of Hurricane Ivan. St. Margaret's Bay was not badly hit by the category 3 hurricane. There was however a large amount of plant debris piled up on the beaches.

The profiles shown in previous reports have been redrawn for this report as an incorrect stadia constant was used previously to calculate some of the distances between profile points. The equation used in the calculation was corrected and new profiles drawn. As an additional check, the distances between profile points were also measured in the field.

An example of a corrected profile is included above.

Selected Agricultural Brochures



It is a common practice among Jamaican house-holders to grow fruit trees in their home gardens. Most times however, they allow the trees to grow to uncontrollably great heights. These trees soon become unmanageable and pose several problems. The excess fallen leaves and branches, add to the solid waste disposal management of a city or town. Large spreading branches cause unnecessary shading and dampness, to encourage some plant and human diseases and pests. Old or damaged trees often fall over without warning. In a windstorm falling trees and flying branches cause severe damage to buildings, cars, utility supplies etc., or block roads and drains, and both the insured and uninsured suffer. Although fruit trees are valuable, the fruits from many tall trees are not easily or ever reaped, because they are out of easy reach.



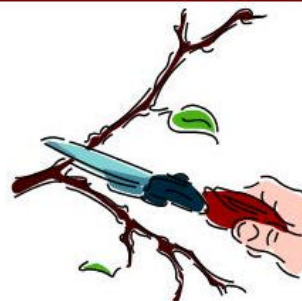
Many house-holders lack the knowledge of how to manage trees, and some even have the misconception that pruning will kill them. Others may not notice the rate of growth of the trees in their holdings. Except for timber and palms most other plants should be pruned regularly to maintain a desired size and shape. A well managed fruit tree can offer shade and windbreak, aesthetic beauty as well as healthy fruits, and the leaves form mulch and organic matter to benefit other plants.

In managing a tree, one should first decide on a shape and size. This is influenced by its species, its location in relation to other plants in the vicinity, buildings and utility supplies, and to other structures nearby. Some plants do not grow to a large size and are therefore easy to manage. Example of these are fig, guava, garden cherry, carambola, lime, pomegranate, sour sop and sweet sop. Others like ackee, apple, avocado, breadfruit, guinep, jackfruit and mango can become large. Most fruit trees produce fruits on new flushes, and regular pruning facilitates new growth. Fruit



trees can be grown near fences if this is agreeable to the neighbor and there is a willingness to share the produce. Otherwise this could be a nuisance especially from fallen leaves and shading, also from the risk of toppling over. A fruit tree can be allowed to grow over a low building, but over shading and fallen leaves can be a problem if not properly

taken care of. Expanding tree roots often damage pipelines, paved areas or even buildings. Several fruit tree species can be grown on a small area of land if they are properly laid out and each is allowed adequate space to spread. If planted too closely, they will soon become clustered, necessitating the need for drastic pruning or even removal of some. This becomes a hard decision for many, and at this time the cost of workmanship and for pruning and transporting the cuttings can be very expensive.



Before attempting to prune, one should view each plant from several angles, and all the plants together in the garden, to decide on the size and shape that will make them fit, and which plants to eliminate. Each plant should have a single straight trunk, with the lower branches at a height that will not touch the ground when laden with fruits. The under-space allows for sitting, placing plant pots etc., makes it easier to control weeds or sweep away debris, and reduces hiding places for thieves. The main branches should be evenly spaced and point outwards from the trunk. The secondary and tertiary branches should also be evenly spaced and point outwards and upwards. The more growing tips a plant has, the more it can produce. All dead and dying branches should be cut away cleanly at their attachment.

The shape of a plant can be varied from dome, square, conical, round, oval, so long as it allows maximum exposure of the foliage to light. At each pruning the height, shape and size should be maintained.

There may come a time when a tree becomes old, sick or damaged. A young plant of the same or even another species can replace it. If the lower portion of the trunk is healthy, stumping can rejuvenate the plant. This involves cutting the trunk cleanly a few feet above the ground, and allowing it to sprout. One of two of the sprouts may be selected and allowed to grow and be trained to develop a desired shape and size plant.



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 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 results under SO2. Component 1 assists targeted organizations identify and promote sustainable environmental management practices by resource users. Component 2 focuses on identifying and supporting solutions to improve the enforcement of targeted existing environmental regulations, primarily in the Great River and Rio Grande watersheds. Component 3 provides assistance to key organizations to support, coordinate, and expand watershed management efforts in Jamaica. For more information about R2RW, please contact one of the following organizations:



Ridge to Reef Watershed Project
5 Oxford Park Avenue
Kingston 5
Jamaica

Email: ard@cwjamaica.com
Web: www.r2rw-jm.org
Tel: 754-7598 or 906-2268
Fax: 754-3913



National Environment and Planning Agency
10 Caledonia Avenue
Kingston 5
Jamaica

Email: pubed@nepa.gov.jm
Tel: 754-7547 to 50
Fax: 754-7595



United States Agency for International Development
2 Haining Road
Kingston 5
Jamaica

Email: kmcdonald-gayle@usaid.gov
Tel: 926-3645 to 8
926-5066
Fax: 929-9944





CARING FOR TREES ONCE PLANTED





The Ridge to Reef Watershed (R2RW) project supports the work of strategic partners, such as the Forestry Department and the National Environment and Planning Agency (NEPA). To ensure that the trees planted live a long, long time, R2RW wishes to remind everyone that we also need to care and maintain our seedlings once planted. Too often seedlings either dry out in the sun or animals eat them because people do not take steps to care for them properly. Here are a few easy things to do to take care of your seedlings once they are planted.

Involve Children

Taking care of seedlings is a lot like taking care of young children. Actually, young children can help to take care of young trees and should be involved right from the beginning. By helping to take care of the seedlings, children will learn to appreciate the trees when they grow up and will be more likely to adopt the habit of planting trees with their own families when they're adults.



Water Regularly

It is always wisest to plant your trees during the rainy season. If you do so, they will have a head start. But if there is no rain, you will need to water the tree to keep it alive. Water the plant enough to be sure that you have soaked it down to its roots. During the dry season, you may need to do this everyday.

Weed Control

When they are young, plants need as much of a fighting chance as they can get. Too many weeds will compete with the seedling for nutrients. So, they need to be weeded regularly. The better the weed control in the first few months of growth, the better the chance that your seedlings will survive. Have young children help out and make it a game. Keep the weeds from getting near the trees, at least until they have grown up above the weed cover.

To Protect your Seedlings from Animals

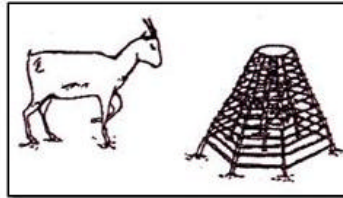
Use branches and twigs and other available materials to construct a protective barrier around the seedling. Many people use chicken wire or barbed wire to protect their young trees, but you don't have to use purchased material. Twigs and branches from bougainvillea bushes or other shrubs with





thorns or “macca” such as acacia have natural thorns to deter animals from troubling your plants.

Another trick is to apply animal waste to the base of the plant and even on the leaves. You can also make a liquid mixture of manure and urine and spray it or sprinkle it on the plant. Animals won't eat anything that has their own manure or urine on it. Applying animal wastes can be effective, but you need to do it each season. You will also have to do it regularly during the more rainy times of the year.



Protect your Tree Seedlings from Pests

If you don't want to use harsh, environmentally unfriendly chemicals to protect your seedlings from pests like termites here are some ideas to try:

- You can actually create a little microenvironment that repels termites. Try adding poultry manure (which you can buy) to your potting soil. Or, do what people used to do in older times. Try spreading ash from charcoal or wood fires around the base of the seedling.
- Slugs and snails will be discouraged if you grind-up egg shells and sprinkle them around the base of the plant as well.

Feed your Tree

Seedlings that are well fed will also be stronger and will be better able to fight off pests and diseases on their own. Fertilize your plants at least once or twice a year to keep them well nourished. Using organic fertilizers is also a good idea.

More information

If you would like to do more tree planting activities in your school, a good place to look for more information is in the “Schools Environment Programme” [Tree Planting for Schools](#) booklet by Diana McCaulay. The SEP teachers' manual also has a lot of activities to explore and have fun with. Please contact:

Jamaica Environment Trust
11a Waterloo Road
Kingston 10
Phone: 960-3693 or

Forestry Department
173 Constant Spring Road
Kingston 8
Phone: 924-2667/8, Fax: 924-2626

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Fax: 754-3913



National Environment and Planning Agency
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Email: pubed@nepa.gov.jm
Tel: 754-7547 to 50
Fax: 754-7595

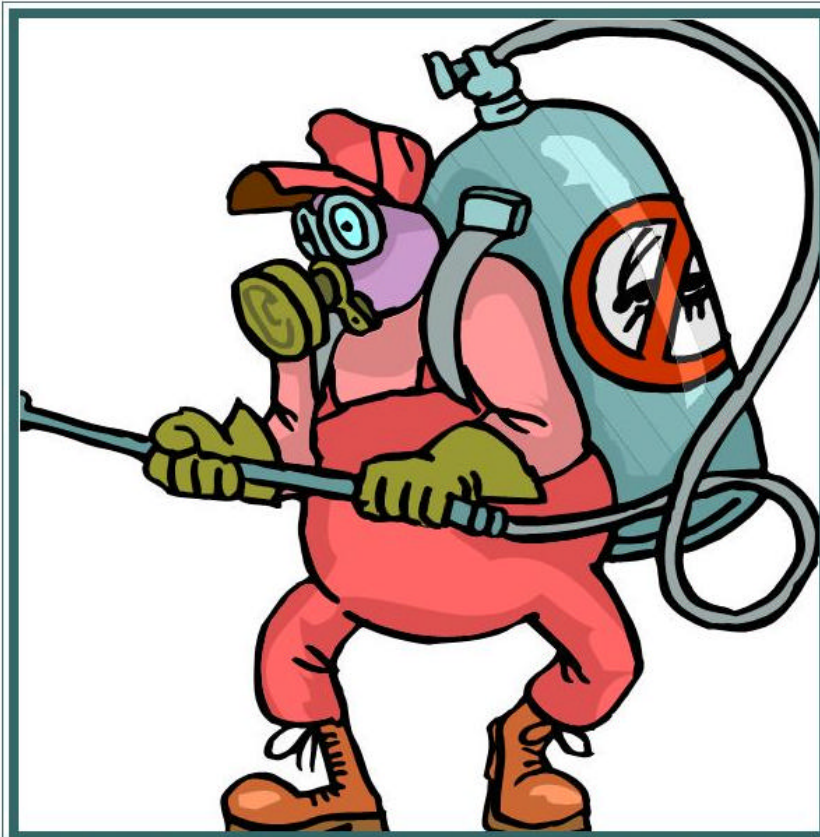



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LESSENING THE USE
OF AGRI-CHEMICALS
IN WATERSHED AREAS





A main source of chemical pollution in many watershed areas in Jamaica, comes from farmers' efforts to increase production or protecting what is grown. The main practices involve the use of fertilizers and pesticides. While these are very important materials, it is their over-use or misuse that causes problems. There is much information on the use, benefits and dangers of farm chemicals, and many persons are becoming aware of them, but an area that is not fully recognized or understood, is the minimal use or non-use of these chemicals.



A prime responsibility of the Ridge to Reef Watershed Project is not only to conserve natural resources, but also to reduce environmental pollution in a sustainable manner. This paper is intended to assist in that effort.

Plants can grow almost anywhere, but need nutrition to thrive and be productive. They are affected by various diseases and pests and yet they survive. This is because there are natural and biological systems at work in their favour. The relationship between plants and these systems have been studied, and many of the findings are being applied with beneficial effects. We now know of symbiosis, competition, substitution, predation, parasitism and others, all activities that can work by themselves or



in combinations. The over use or misuse of chemicals can reduce or nullify the benefits of many of these systems.

There are many methods of agricultural production in which the use of chemicals can be avoided or minimized. Organic agricultural production is a good example. This paper treats systems that require no chemical inputs.

The Use of Immune, Resistant or Tolerant Plant Varieties

Most plant species have survived until now because of their innate abilities to withstand the damaging effects of natural disasters. Many agricultural crops have been selected and grown because of these qualities. However the demand for increased production has led to monoculture which often places stressful pressures on some plants, making them more prone to natural enemies, or even to develop new problems. Plant breeders and agronomists have been breeding, selecting and testing plant species and cultivars that are immune, resistant or tolerant to many serious maladies or that can withstand the stress of unfavorable conditions, and many





of these are now being grown commercially. Examples of these are the May Pen variety of coconuts which is highly tolerant to the lethal yellowing disease, citrus budded on rootstocks which are proving resistant to tristeza disease, Julie mango being highly tolerant to anthracnose, and new sugarcane varieties tolerant to the stalk borer and many common diseases.

Selecting the Best Areas for Production

It is well known that plants do better in some areas than others. This may be due to elevation, rainfall, humidity, soil type, exposure to the sun or other geographical factors. Irish potato produces best at high elevations in Jamaica because the nighttime temperature is cool. But this condition is also ideal for the blight diseases that affect the crop. Farmers have however learned how to manage the disease. Mango does not fruit well at high elevations because the cool damp weather is suited to the proliferation of mildew and anthracnose. Coconut does best along coastlines and low-lying areas where there is an abundance of deep fertile soil and water. At all times it is best to select the crop best suited to a particular area.




Timing of Plant and Production

Some diseases and pests are more active during certain weather and day lengths than others. Short-term crops can be easily timed to take advantage of these conditions. Red kidney bean will be less prone to the common mosaic virus in the cool short day season than during long hot days. Onion grows and does better during the same season. Sugar cane is timed to mature during long hot days when the sucrose content will be at the highest.

Dis-infection or Dis-infestation of Planting Materials

Many diseases and pests are transported to a clean field on planting materials. Often times it is possible to avoid this. Despite the source, all materials should be properly examined for obvious signs of diseases or pests, and if they can be removed, this should be done or the material rejected. However in some cases it is easy to clean up the material. Banana or plantain corms that have been stripped of all discolored tissue remain free of burrowing nematodes and banana weevil borer. Stripping the lower leaves and roots of pineapple suckers is





an excellent way of controlling nematodes and the pineapple weevil borer.

Manual Control

An excellent practice especially in small farming is to closely monitor the field for the onset of diseases and pest. If the initial infections or infestations are removed and destroyed, later serious damage can be avoided. This method of control can be applied even on large farms.

Removal of Disease or Pest Harborage

Many invasions on crops originate from weeds or other host plants within a field or in the immediate surroundings. Knowledge of common host plants can help to eliminate them, or one should avoid the planting of a susceptible crop nearby.

Trap Cropping

Some diseases or pests show preference to certain host plants e.g. aphids will be attracted to corn rather than peppers. The corn earworm will attack corn in preference to tomato. Trap crops can be grown as inter crops or as windbreaks and can be allowed to mature or destroyed early to kill the pests.



Biological Control

Many natural control agents can be of value in controlling diseases and pests, and avoid the use of pesticides. In several instances the non-use of pesticides has allowed natural enemies to proliferate and in time give acceptable levels of control. Many problems are avoided in small or mixed farming systems, because of non or minimal use of pesticides, and the high activity of natural agents.



Increase the use of Organic Manure

Since in many instances the misuse or over-use of fertilizers is the main cause of chemical pollution, any lessening of its use will reduce the problems. Plants will grow from the nutrition available from eroded rocks and organic sources. However their production is limited to the amount of nutrition that is available, after that which is required for growth. Increased production therefore requires more nutrition than that which is generated naturally within the area of the plant roots. This can be provided through designed cropping systems or by transporting organic matter from external sources. Composting is an important consideration in producing your own organic material. Learn about these methods.

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COMPOSTING



What is Composting

The aerobic decomposition of organic compounds into a stable product called humus or organic matter.

This process is brought about by the action of microscopic organisms such as bacteria, fungi and actinomycetes. These organisms attack and break down various types of organic materials in our environment making it safer to live in.

Stages in Composting

There are four stages involved:



Stage 1

Organisms actively break down organic material and the temperature rises to 50-55°C within 2 days.

Stage 2

The micro organism population increases and the temperature begins to rise to the maximum of 70°C.

Stage 3

Cooling begins towards the second stage and the microbial population decreases.

Stage 4

This is maturation stage when the compost is almost ready and the microbial population gradually dies off with organic material totally broken down.

Factors Affecting Composting

1. Surface area; smaller materials decompose faster

- 2. Moisture content
- 3. Oxygen concentration
- 4. Temperature

Composting Methods

Either

- 1. Pile
- 2. Stack
- 3. Pit

Or

- 1. Clothes bins; plastic (with air holes)

Uses of Compost

- 1. Contains npk and is beneficial for crop production as an organic fertilizer.
- 2. Acts as a soil conditioner by removing toxic substances that are damaging to crop plants.
- 3. Convert the nutrients so that they are released gradually for plant absorption, thus reducing leaching.
- 4. Contains trace elements, which are essential for plant growth and development.
- 5. Improves soil texture and structure and increase the moisture content of the soil.
- 6. Composting also reduces solid waste volume by approximately 75%.



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Rimona and the River Babies



*Written by
Helen Williams*

Rimona sat on the river bank, watching the river babies. They were small and brown with short, curly hair. They wore tunics made from leaves carefully stitched together. They played and laughed in the sunshine. They screamed with delight as they jumped into the water, making big splashes. When they caught sight of Rimona, they suddenly vanished from sight. Rimona sighed. She wished she could swim and play in the river like the river babies.



The next day she returned, hoping to see them again, but there was no sign of them. She heard thunder rolling in the distant hills, then felt the rain. Then she heard the sound of rushing water and saw brown muddy water was gushing down the river. To her horror, she saw the river babies being swept along by the current. Worse was to come. One of them, caught in a mass of branches, was drifting towards the bank where Rimona was standing. She took a long stick to separate the branches.

“Hold on to the stick and I’ll pull you to safety,” said Rimona to the river baby.

“Don’t be afraid of me. I’m not going to hurt you. You might die if you get swept away by the river. ” When the terrified river baby grasped onto the stick, Rimona gently pulled her out of the river and picked her up.

“We have to find your family,” said Rimona. She ran down the road to the bridge, where she saw the other river babies on the bamboo rafts tied to their moorings near the bridge. She put down the river baby, who ran crying towards her family. Rimona, splashed with mud and soaked to the skin, then headed for home.

“Where have you been, girl?” screamed her mother from the verandah. “Get out of those wet clothes at once or you’ll catch your death of cold.”

“I had to rescue a river baby,” said Rimona.
“What nonsense you talk,” replied her mother.

“Sounds as though she needs to have some sense beaten into her,” said her father, Farmer Fred Farrow, who appeared at the doorway waving his tamarind switch. At that, Rimona ran out into the rain again and up the hill to her grandmother’s house.

“Granny, Granny! It’s me – Rimona! Let me in!” shouted Rimona, as she hammered on the door.

“I’m coming, I’m coming. What are you doing out in weather like this? You could be struck by lightning.”

“I had to rescue a river baby. They all got carried away by the current, then one of them got trapped in some tree branches. She would have died. They would have broken her neck, if I hadn’t helped her. Mummy says I am talking nonsense and Daddy says he will beat some sense into me,” sobbed Rimona. “Never mind, my little Rimi, you can stay with me tonight. Tomorrow your father will not remember about it, but don’t ever mention river babies to him again.”

“Granny, what made the river so angry? I never saw the river flowing so fast with all that mud and leaves and stuff.”

“You can blame the farmers,” said Granny. “Like your father – he cut down too many trees on the steep slopes and ploughed up & down the hillside. That slope is too steep to plant anything except trees. God made the trees to protect the soil and keep the river water clean and pure.”

The next day, she ran home when her daddy had left for the fields. She slipped into the kitchen where she held on to her mummy’s hand. Her mummy hugged her and said

“What are we going to do with you, girl?”

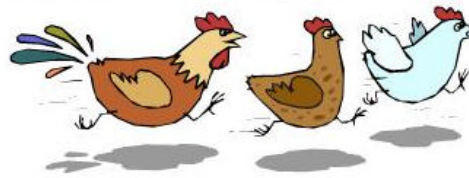
“I’m going to be good, Mummy,” replied Rimona. “I won’t give you any more trouble.”

Rimona kept her word. Every morning,



she tethered the goats and fed the chickens. In the evenings she brought in the goats and helped her mummy in the kitchen. She worked hard at her lessons too, but she couldn't forget the river babies.

When planting time came, she went with her daddy to the ground he was preparing for yams. It hadn't rained for months and the earth was dry and parched. Rimona turned to look at the river, hoping to catch a glimpse of the river babies. She had never seen the river so low, with large boulders sticking out of the green and slimy water. "They can't possibly live in this," she thought.



Then she saw her granny climbing up the steep slope, stopping at intervals to catch her breath.

"Hello, Mum," said Farmer Farrow. "Coming to help plant the yams?" he asked.

"I'm coming to see what you're up to," she replied. "You need to terrace the slope or you'll lose all your soil when the rainy season starts, and all that fertilizer you're using will wash down into the river. That's why the river's so green. It never used to be like this."

"Mother, this is modern farming. You can't get a good crop if you don't use fertilizer."

"And make the yam turn black when you cut it. Old time ways were better – trees on these steep slopes protect the soil and keep the river clean. They hold the water too, so the river doesn't run so low in the dry season. Every one who lives by the river is suffering because of these things."

"I have a family to feed and children to send to school," her son replied angrily. "You want us all to starve?"

“The least you could do is plant some Annatto and Khus Khus grass along the river bank to hold the soil.”



As the days passed, the rains came again.

“Time to kill the weeds,” said Farmer Fred to his daughter. “You coming with me? You can carry the spray can. We have to do this early in the morning before the wind gets up.”

When they had finished Fred walked towards the river with his spray can.

“What are you doing?” asked Rimona.

“Just going to wash out this spray can in the river.”

“No! Daddy, no!” cried Rimona. “You’ll kill the.....fish”

She nearly said river babies, but managed to stop herself. Then, who should appear but the District Constable Jerry.

“Howdy Farmer Fred. Your daughter is right,” he said. “You’ll kill more than fish. People give their animals water from this river and it’s this same river water that is treated for people to drink. That’s why it’s illegal to do what you are doing. I could arrest you, but I’ll let you off this time. If I catch you again you’ll have to pay a large fine or even be locked up in prison.”

Rimona did not wait to hear her father’s reply. She had to warn the river babies before they drank the poisonous water. As she ran down the road, she remembered that her friend Millie’s brother had a taxi. She reached Millie’s house in time to see Millie getting into the car with her brother.



“Stop! Wait for me!” she shouted. “We have to rescue the river babies.”

“What are you talking about?” asked Millie.

“Remember those little people you once saw at Belvedere? They’re going to be poisoned. My daddy washed his spray can in the river and that stuff is so poisonous it will kill everything.”

“We’re going to Belvedere. You can come with us,” said Millie. “How are you going to tell them? They will hide as soon as they see you.”

Then Rimona whispered to Millie how she had rescued the river baby.

“I hope they will recognise me,” she said.

When they arrived at Belvedere, Millie begged her brother to leave her and Rimona by the river, while he went to buy some ortaniques.

Rimona and Millie sat on the river bank. To their surprise, the river babies swam towards them.

“Hello,” said the biggest one. “We’ve come to thank you for rescuing our little sister,”

“Thank you, but you’re in great danger,” sobbed Rimona, almost choking on her words.

“There’s poison in the river. You have to escape from here.” The river babies were horrified.

“My friend’s brother has a taxi and can take you high up in the hills to where the river starts. You should be safe there. Wait here, then when he comes, I will call you.”

Millie’s brother was waiting for them.

“Can we go to the place where you buy pineapples?” asked Millie. “Some passengers want to go there.”

“Do they have the fare?” he asked.

Millie giggled as Rimona called to the river babies to come.

Millie’s brother looked, but saw no one.

“Rimona is as mad as Millie,” he thought.

Rimona, opened the door for them to get in.

“Do you know the place where the river springs out of the rock and makes a waterfall? That’s where your passengers want to go,” Rimona asked Millie’s brother.

“That’s not a safe place and taxi can’t go there. It’s a good distance from the road.”

The river babies listened intently as Millie’s brother described how to get from the road to the waterfall.

When they reached the stop, Millie’s brother saw the back door open and close by itself. He felt a shudder run down his spine.

“Good bye, and take care,” said Rimona, as the river babies slipped out of the car and ran off down the narrow path.

“Don’t tell anyone about this,” Millie warned her brother.

“I sure won’t,” he replied. “You little girls can get away with make believe. I can’t,” he said.

“Then it’s our secret,” said Millie.

“But there’s one thing I have learnt,” said Rimona. “We have to look after the river. The river belongs to everyone. We must all keep it clean and healthy, for all of us to enjoy.”



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Port Antonio Theatre Group Proposal

Background

The Port Antonio Theatre Group is a well-established and recognized theatre group, who has won over fifty National Trophies through the Jamaica Cultural Development Commission's Independence competitions. They have also produced a well-received musical production for the Forestry Department titled "Magic Trees" which is available on video. They have performed Magic Trees in several watershed communities, and an excerpt of this production was offered on World Wetlands Day- February 2, 2004.

As has been demonstrated in the Great River Watershed with the performances by the Action Boyz, community drama is one very effective tool in mobilizing community awareness, and action towards cleaning their communities, and building a beginning sense of stewardship. The Port Antonio Theatre group in addition to drama presentations would also offer interactive drama workshops to build capacity within communities to continue their own productions in watershed management.

This Theatre Group represents a critical supplemental educational tool in support of the Public Awareness work being conducted in the Rio Grande Watershed.

This Awareness and Community Education work is to be managed by a complement of four NGOs. They are JCDT- currently responsible for public education in 10 upper Rio Grande communities; Portland Parish Development Committee, with whom we have just signed a contract to coordinate the public education work in 20 lower watershed communities; The Portland Environment Protection Association- who have submitted a proposal to expand their school environment program by 14 schools, and the 4H Environment Challenge program, which proposes to focus on six schools in the Rio Grande Watershed.

Problem Statement

Environmental hazards in the Rio Grande Watershed include unhealthy practices by women, especially in the upper watershed, related to baby diaper disposals; a history of dependency on political largesse and unfulfilled desires for community upliftment, resulting in passivity in addressing environmental issues; large scale unemployment among young persons and difficulty to self-motivate to create changes; and inadequate responses from service agencies (Parish Council, NSWMA, or NWC) to address their routine needs for water supply, garbage collection; flood control; or public education on gully cleaning and solid waste reduction prior to disasters.

Goal

To use drama performances, including interactive drama training, as a tool for building awareness of the crisis of afforestation, of their own unhealthy sanitary practices and poor management of natural resources in the RGW, so that specific behaviour change-responses can be applied to particular problems in watershed management.

Methodology

To use a partnership approach between: JCDT, R2RW Public Awareness Task Force; NEPA; SDC, PDC animators and other partners such as PEPA and 4H where applicable, to design with the Port Antonio Theatre Group, drama presentations and interactive training workshops, implemented as follows:

- ✍ 5 clusters of communities (2 in each group) in the upper valley exposed to workshops/drama presentations
- ✍ 10 clusters in lower watershed (2 in each group) in the lower watershed

The material to be designed will be specific or adaptable to the specific environmental challenge in each cluster community group. The interactive methodology will be relied on to address the passivity, for example in Bellevue; the psychological barriers that prevent communities from becoming active in watershed management; the marginal role played by some male youth in structured community activities, and the specific information on hazards and threats which continuously face the RGW communities.

Additionally, exchange visits will be held between representatives of the Action Boyz and of the Port Antonio Theatre Group for the purpose of sharing lessons learned from the Great River Watershed and from the Portland group's years of work with the Forestry Department and wider environmental groups.

At least two presentations/workshops monthly will be held in the first six months of this sub-project.

Outputs:

- ✍ Teachers, animators, environmental club and community leaders trained in drama techniques, and taught the methods of writing their own skits.
- ✍ Communities catalyzed to form structures to address watershed management issues.
- ✍ Windsor School strengthened to play a leadership role in using drama as educational tool for change.
- ✍ Teachers, especially from Comfort Castle, and Fellowship Schools (the latter identified by the partners above as a hotspot area) trained to continue the work in schools, supported by PEPA and 4H, in community drama for better watershed management.
- ✍ Economic opportunities and improved livelihood result from this process of stimulation and engagement, and Nature Park plans e.g. in Ginger House, are supported by a wider participating community, through this educational process.
- ✍ A video of this educational method for continued use by watershed groups and partner agencies.
- ✍ Improved ecological management approaches in use of Rio Grande, once groups become organized.

Sample Case from the Compendium of Environmental Cases

Unlawful Fishing – Possession of protected animal – Fishing Industry Act 1976 – Aquaculture, Inland and Marine Products and By-Products (Inspection, Licensing and Export) Act 1999 – Wildlife Protection Act 1945

On January 16, 2002 the vessel “Thunder Ridge” was intercepted on the Pedro Banks. A quantity of Conch and a Hawksbill Turtle was found on board and seized from the said vessel. The crew, some 75 men, absconded with the boat taking an undetermined amount of conch and turtles. The Captain, Clifford Meija and Chief Mate, Ashley Hinds, were charged with the offences of, fishing without a licence contrary to the **s. 3 of the Fishing Industry Act 1976**, fishing in the closed season contrary to **s. 19 of the Fishing Industry Act 1976**, harvesting, handling and processing conch for export without a licence contrary to **s. 24 of the Aquaculture, Inland and Marine Products and By-Products (Inspection, Licensing and Export) Act, 1999** and possession of a protected animal (a hawksbill turtle) contrary to **s. 4(2) or 6(1) of the Wildlife Protection Act 1945**.

Decision

Captain, Clifford Meija and Chief Mate, Ashley Hinds pleaded guilty to the offences and were sentenced to a fine of \$1 million each or 12 months imprisonment for harvesting, handling and processing conch for export without a licence and \$80,000 and \$60,000, or 6 months imprisonment, respectively for possession of a protected animal, \$1000 each or 9 months imprisonment for fishing without a licence and \$500 each or 6 months imprisonment for fishing in a closed season.

Commentary

To date these are the highest fines ever imposed for any environmental crime in Jamaica.

R V Clifford Meija & Ashley Hinds

Sanitation Anchor Project Gantt

Activities		2004												2005						Responsibility
		J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	
1.0	Planning & Orientation	■																	Project Coordinator, J. Excell, COP	
2.0	Demonstration of Sanitation Technologies																			
2.1	Review & document the cost related to the sanitation grant projects to show cost effectiveness & environmental suitability					■	■	■	■	■									Project Coordinator & SWS	
2.2	Monitor simulated home systems at CASE		■	■	■	■	■	■	■	■									Project Coordinator, SWS & CASE	
2.3	To conduct sanitation technologies analysis & evaluation in GRW on school systems.				■	■	■	■	■	■	■	■							PCV/NWC & Project Coordinator	
2.4	Evaluation of the sanitation solutions							■	■	■	■	■	■	■					Project Coordinator	
3.0	Increase Public Awareness in Great River & Rio Grande Watersheds																			
3.1	Printing flyers/brochures			■													■	■	Project Coordinator & PPAPRS	
3.2	Video production & preparation of slides for presentations				■	■									■	■			Project Coordinator, SWS & PPAPRS	
3.3	Four (4) technical workshops to disseminate information on technology to the community members etc				■	■	■	■											Project Coordinator, PPAPRS & GNRS	
3.4	Link the anchor project more formally to Green Village Award program. Assist communities participating in the Green Village program to develop the sanitation component of their action plans			■	■	■	■	■	■	■	■								Project Coordinator, SDC, Task Force, NEPA- PE Dept.	
3.5	National media campaign												■	■	■				Project Coordinator, & PPAPRS	
4.0	Mainstream the Technologies Demonstrated																			
4.1	Formulate local design criteria for constructed wetland systems						■	■	■	■									Project Coordinator, SWS & NEPA – ECD & Lab & CASE	

Activities		2004												2005						Responsibility
		J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	
4.2	Four (4) national seminars conducted in Kingston																			Project Coordinator & SWS
4.3	Presentations to special interest groups (architects, engineers), specific stakeholders & follow up meetings with these groups																			Project Coordinator & SWS
4.4	Follow up in project areas to include meetings																			Project Coordinator & SWS
4.5	Provide information to agencies responsible for the developers manual & builders code, in a format that is compatible to their documents																			Project Coordinator
4.5	Presentation to National Task Sanitation Force to further disseminate appropriate technologies																			Project Coordinator

Sanitation Brochure



Why Sanitation?

Your Health

Lack of good sanitation causes diseases, by transfer of germs from Hand to Mouth, picked up in the environment. Good sanitation keeps germs away from your mouth by keeping water safe and waste away from people.



The Environment

If you have bad sanitation it will affect other peoples health as well as cause pollution of:

- ◆ Rivers
- ◆ Ground water
- ◆ The reefs

Due to germs and the nutrients causing algae to grow



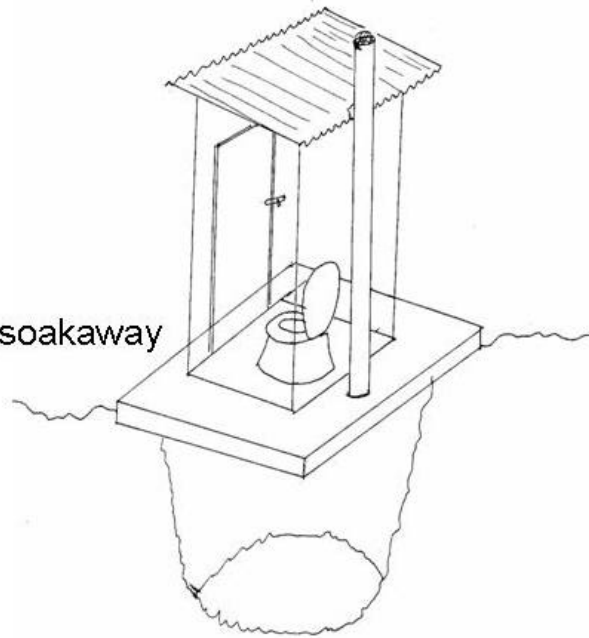
Algae in River



Stressed Reef

How is Sanitation Taken Care of Now?

- ◆ Latrines
- ◆ Bush
- ◆ Scandal bags
- ◆ Absorption pits
- ◆ Septic tank and soakaway



Outdoor Latrine

And the Problems are.....

Smells, Hygiene

With the bags, the bush and sometimes latrines

Groundwater and River Pollution

Latrines and Pits as well as soakways on some sites

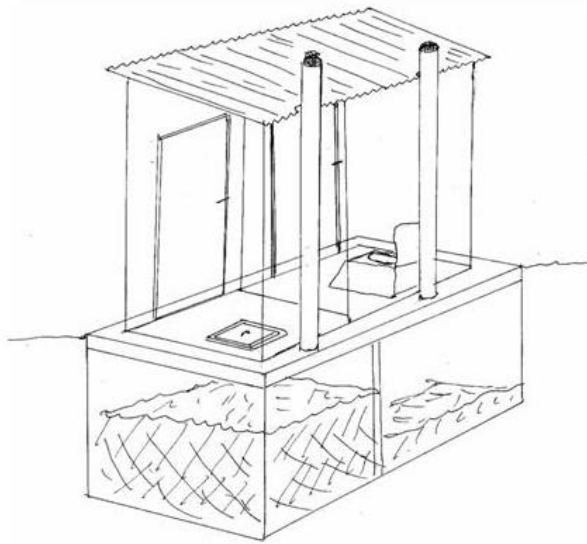
Uncivilized & Outdoors

The bags, the bush and also Latrines

What is the Best Alternative for You?

If your water supply is poor...

- ◆ A Latrine (or a VIDP, a type of latrine)



If you have plenty water.....

In soil away from a spring or river:

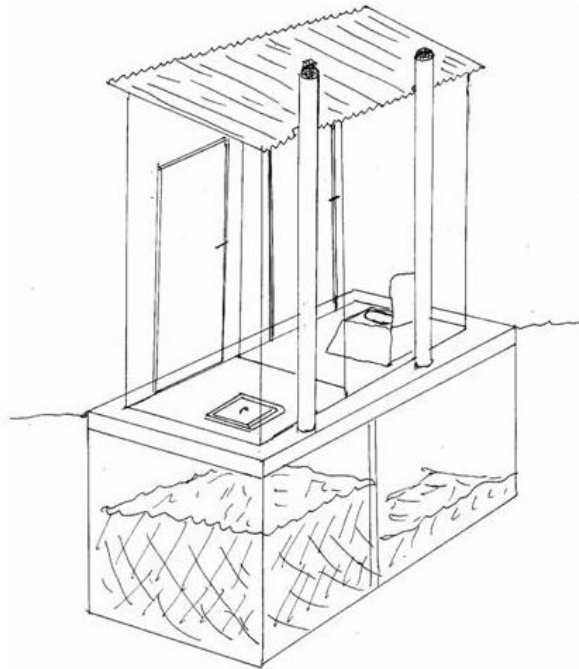
- ◆ Pit, septic tank and soak away or septic and wetland In rock or hard ground.
- ◆ Septic tank and wetland In soil next to a river or spring.
- ◆ Septic tank and wetland



How do they work?

Latrines and absorption pits; These are basically holes in the ground with a cover over them and sometimes rocks to support the sides from caving in. The waste breaks down in time. The liquid soaks into the soil (and pollutes ground water and (any nearby rivers or the sea)

VIDP's (Ventilated Improved Double Pit) latrines are made of two sealed tanks or vaults, so that when one side is full it can be sealed off to compost while the other is used. After 2 years the resulting soil can be removed and the 1st side reused. VIDP's keep everything away from the environment and can be used anywhere. They are vented and so do not smell as badly as normal latrines.



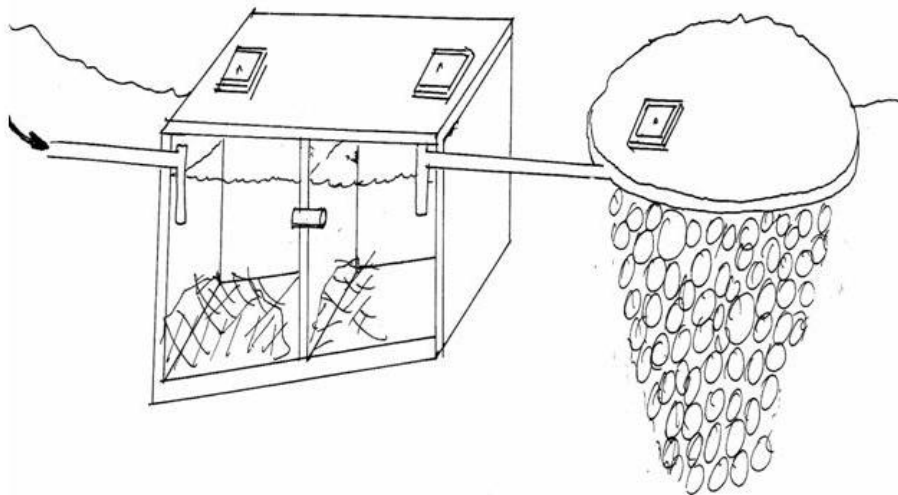
VIDP's (Ventilated Improved Double Pit)

Septic Tanks

These settle the solids and treat by retaining the sewage for three days, allowing bacteria to eat the waste and then die off. Clear "effluent" comes out still needing disposal

Soakaways & Tilefields

The traditional way of disposing of effluent or grey water, in a rock filled hole (a soakaway) or through a perforated pipe in gravel filled trench (a tile field). The soil bacteria kills the germs, leaving some nutrients that will either be taken up by trees or will pollute any nearby water.



Septic Tank & Soakaway

Constructed Wetlands



A natural way of disposing of effluent from the septic tank, the constructed wetland is a shallow tank full of gravel with an overflow set so that the water cannot reach the surface. Tall grass is planted in it to take up the nutrients, kill the germs and evaporate the water. If small, water will be left over to irrigate with, and if large enough, only flood rains will cause the tank to overflow to a small soakaway.



Constructed Wetlands

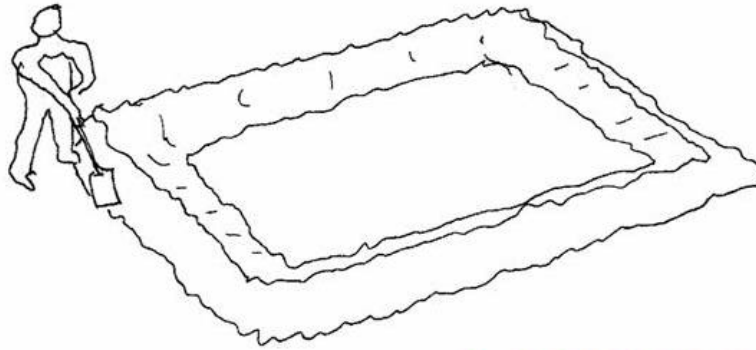
In Masonry



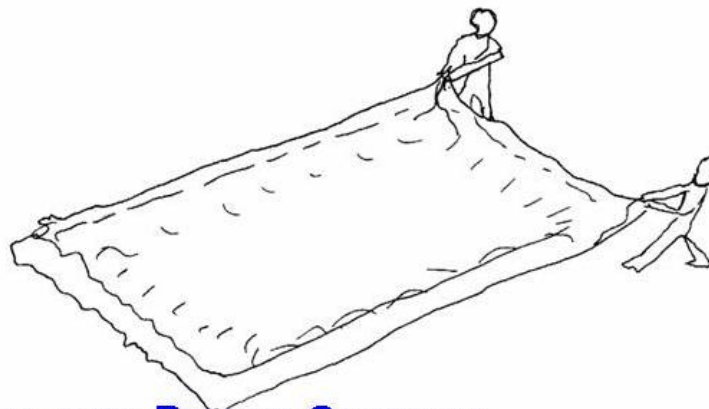
Or Plastic



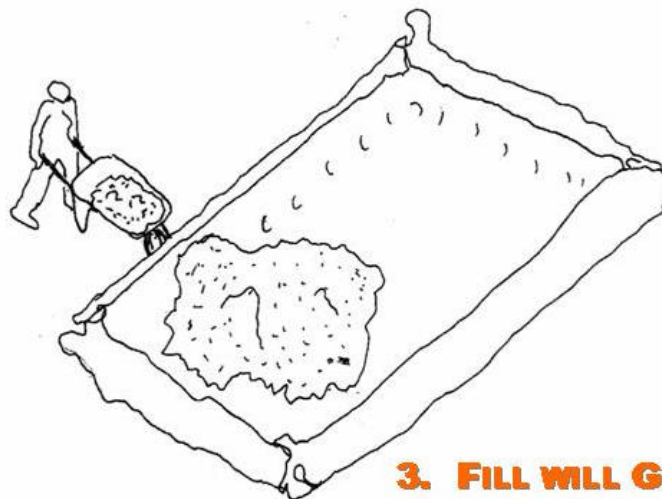
How to Build a Constructed Wetland



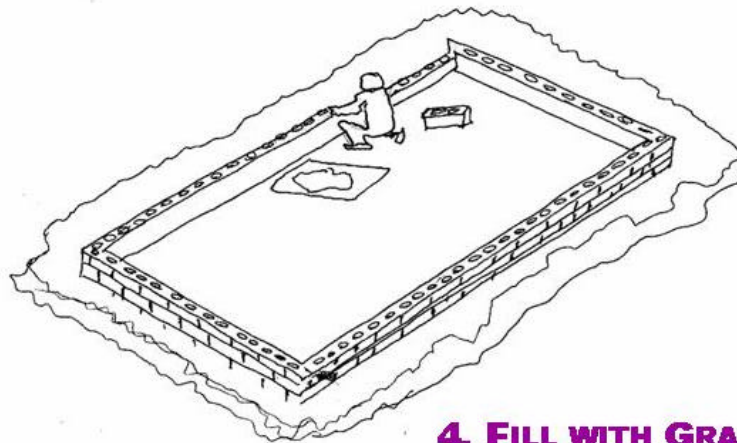
1. MOUND UP SOIL



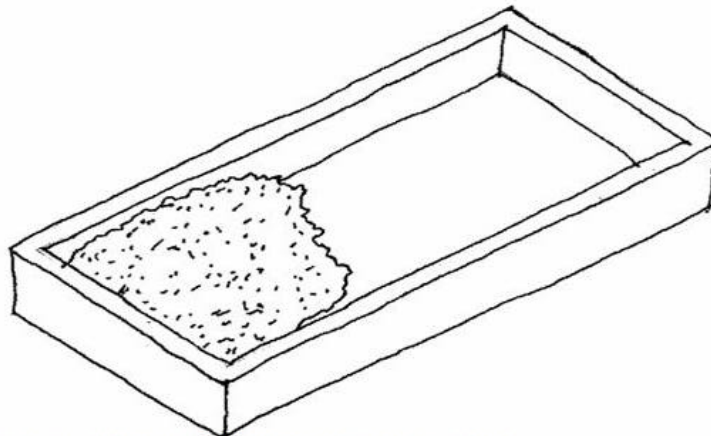
2. PULL OVER PLASTIC COVERING



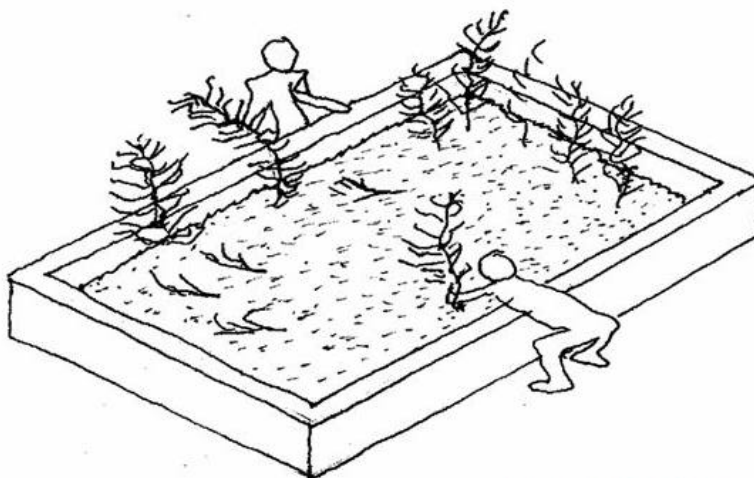
3. FILL WITH GRAVEL



4. FILL WITH GRAVEL



5. WETLAND BUILT WITH MASONRY



6. PLANTING GRASS

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 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 results under SO2. Component 1 assists targeted organizations identify and promote sustainable environmental management practices by resource users. Component 2 focuses on identifying and supporting solutions to improve the enforcement of targeted existing environmental regulations, primarily in the Great River and Rio Grande watersheds. Component 3 provides assistance to key organizations to support, coordinate, and expand watershed management efforts in Jamaica. For more information about R2RW, please contact one of the following organizations:



Ridge to Reef Watershed Project

5 Oxford Park Avenue
Kingston 5
Jamaica

Email: ard@cwjamaica.com
Web: www.r2rw-jm.org
Tel: 754-7598 or 906-2268
Fax: 754-3913



National Environment and Planning Agency

10 Caledonia Avenue
Kingston 5
Jamaica

Email: pubed@nepa.gov.jm
Tel: 754-7547 to 50
Fax: 754-7595



United States Agency for International Development

2 Haining Road
Kingston 5
Jamaica

Email: kmcdonald-gayle@usaid.gov
Tel: 926-3645 to 8
926-5066
Fax: 929-9944



Selected Lessons Learned Fact Sheets



Ridge to Reef Watershed Project

01

Lessons Learned

Awareness Leads to Action

Lesson: Building local awareness and engendering stewardship is critical to the adoption of improved environmental practices by communities.



Hon. Horace Dailey, Minister of Land and Environment and Mosine Jordan, former USAID Mission Director planting tree in Retrewe, At. James

R2RW established that local level organizations and community-based groups would be interested in, and committed to environmental, economic and social improvement. Once people were made sufficiently aware of their conditions, they would respond positively and take action, given options and resources.

Achieving this awareness was a first and critical step. Public awareness campaigns focused on informing the communities on a basic understanding of ecosystems and watersheds along with specific targeted messages about what individuals should do to enhance community stewardship of natural resources within their community.

This building of local pride led to local action

The Green Village competition is a strong, motivational incentive for communities to become environmentally aware and take action.

Following the awards ceremony for the Green Village Campaign, several community members from a village that finished fifth asked the Master of Ceremonies what they could do better next year so that they could win the award.

in multiple ways.

Targeted public awareness campaigns such as River Action with the Action Boyz, Community Education in the Upper Rio Grande, and Green Village Campaign focused on building awareness and generating pride. These programs made communi-



ties aware that they do not have to live with existing conditions and can act to improve them.



Community clean-up day



Great River Youth and the Environment Forum

Public awareness has led to community organized clean-up days in Retrieve, St. James; Ginger House, Portland; Ramble Pond, Hanover; and Cedar Grove, Westmoreland. Similar awareness efforts has led to clearing of drains in Fellowship, Portland and participation in six agro-forestry projects in Portland. In Cambridge, St. James after the success of a central village clean up, the Community Development Committee (CDC) is stronger and more confident that they can and will continue with a series of clean-up days in surrounding parts of the community. The CDCs are organized groups. They have been pressuring the National Solid Waste Management Authority to increase services and are developing plans for other community and environmental improvements.

The CDCs are also becoming environmental watchdogs as they report and embarrass violators.

There have been some outstanding examples of the success of the Awareness Outreach activities. These in-

“We need to live in a healthier community and we need to make the effort to make it happen”



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About ... the River-maid/Mya-maid

The following are the elements that were consistent descriptors of the “river maid”

- It is (really) a mermaid.
- It is female (most persons felt this way).
- It has long hair.
- It is one-half human (top ½) and one-half fish (bottom ½).
- It lives at the riverhead (apparently all), e.g. “every riverhead has a river maid”.
- It sometimes leaves its comb (often gold) and maybe a few other “personal” articles, by the riverside.
- Anyone who takes up any of the articles (but especially the comb) will be visited in dream by the river maid, and instructed to return the comb, e.g. “the river maid dream the man and tell him to put back the comb”.
- Failure to return the comb results in the borrower’s death, or other (type of) demise e.g. mental illness.
- The river maid is rarely (but definitely has been) seen.

The river-maid is known to abhor being disturbed suddenly e.g. its dwelling place visited suddenly by a human. In such an event, there is said to be a very loud sound heard (or almost “experienced”) by the human, involving something akin to a loud thud onto the water, with an immediate muddying/darkening of the entire body of water – but yet the river maid is not necessarily visible in such situations. It has been said extremely difficult (if not impossible) to compare this with any other known experience, and continues to resonate chillingly with the person experiencing it, for a long time – maybe forever.

With lesser frequency, it was suggested that e.g.

- The river maid actually lives in/near bamboo trees in the vicinity of the riverhead.
- The river maid not only generally has a (gold) comb, but also a (gold) table

This latter was once responsible for e.g. the apparent “death by drowning” of a farmer, as well as the cow and goats that he had used to try and remove the gold table seen on a pond (Westmoreland)

It was also much referred to in the Bog Walk communities, where it was said the table emerged at around noon-time, but it was unwise to try and remove it from the water as it would undoubtedly cause the person to be pulled in and ultimately die

- The river maid not only lives at river-heads, but also in ponds, and other areas with *clean, pure, and/or almost-still water*, which latter could include e.g. *fresh-water ponds, whirling pools*. In general the areas are not as frequented by humans as are other sections of the river.

R2RW is a five-year joint initiative of the Government of Jamaica through its National Environment and Planning Agency (NEPA), the Government of the United States through its Agency for International Development (USAID) and implemented by Associates in Rural Development, Inc. that works with communities, state agencies and civil society groups for the sustainable management of natural resources within the Great River and Rio Grande watersheds of Jamaica.





Ridge to Reef Watershed Project

04

LESSONS LEARNED

Knowledge of Environmental Laws Improve Compliance and Enforcement

Lesson: Awareness and education of communities, enforcement officers and the judiciary are prerequisites for enhancing compliance and enforcement of environmental laws.

Compliance includes both doing what is good and not doing what is illegal and punishable by law. Enforcement is apprehending those involved in illegal acts and punishing them. In Jamaica, despite the rich heritage of legislation and a large number of enforcement personnel, Compliance and Enforcement (C&E) remains weak and inadequate.



Presentation at Magistrates Symposium on the Environment

Compliance and enforcement requires that the community members, enforcement personnel, and judicial system representatives understand environmental laws and enforcement procedures. A *Knowledge Attitudes and Practice (KAP)* Survey conducted in August 2002

revealed that people had no real awareness of existing environmental laws.

Public awareness and education activities focused at several levels including the communities, enforcement officers, and the judiciary. Focus group testing was a part of the process towards developing these activities. This was especially true for the 'It Haffi Legal' poster campaign. The Program of activities included the publication of the 'It Haffi Legal' posters and the "Pocket Guide to Environmental and Planning Laws of Jamaica", targeted training workshops and judicial symposia.

The regulatory and Legal Services Branch of NEPA received a call recently from the Clerk of the Court in Clarendon to clarify penalties applicable to sand mining operations. The Head of the Branch, stated that this sort of call was becoming more common after the series of Judicial Symposia completed in 2003. She indicated that the symposia have helped sensitize the court system about the importance of environmental matters and increased the chance that penalties would be levied for environmental infractions.

A Pocket Guide to Environmental and Planning Laws of Jamaica



NEPA
National Environment and Planning Agency
2003

Pocket Guide to Environmental and Planning Laws of Jamaica

At the community level, the focus was on developing an understanding of good practices, identifying illegal practices and knowing who to contact when illegal acts are observed.

Enforcement officers from various agencies also received training in identifying practices which contravene environmental laws. This training will encourage them to apprehend offenders with greater confidence.

A series of judicial symposia were held for court officials as a way to increase knowledge about the environmental laws so that when cases are brought to the courts, relevant laws and penalties are applied.



Rafting preparations on the Rio Grande, Portland



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Environmental laws protect the citizens rights. Pressure to enforce environmental laws is growing, calls to enforcement officers are increasing, and more environmental cases are being brought before the courts.



Selection of "It Nuh Legal" Posters

“Now we have a handle on the laws that are applicable. Now we have cases in court.”

Dean of Agriculture, CASE and Chairman of the Rio

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Ridge to Reef Watershed Project

05

LESSONS LEARNED

Incentives Motivate Environmental Protection

Lesson: Successful adoption of improved environmental practices depends on motivating factors and delivery of benefits.

Economic problems and lack of jobs are major issues in rural Jamaica. Environmental problems are a low priority for most households. This leads to such problems as praedial larceny, extensive use of fertilizers to improve crop yields, and haphazard disposal of solid waste because easy and free alternatives are not available.

R2RW is a demand driven project. The grant program has provided the Project with the opportunity to establish credibility by demonstrating and delivering benefits and achieving small short-term impact. Through this opening, the project will continue to broaden its impact by convincing communities of both financial and environmental benefits to be derived from addressing their own priorities.

A Member of the Rushea Farmer's Group is now planning to expand the area she is planting in Scotch Bonnet peppers. Some weeks she picked and sold 300 pounds of peppers for a total of \$10,000. She is working hard to maintain her fields by minimizing the use of "ferti". She is planning to buy a pump so she will have dependable water for irrigation and is beginning to make improvements to her house. She is also helping to share the message on the benefits of correct land husbandry practices

Initially, farmers were more interested in generating income than protecting the environment. The Project staff has worked assiduously to assist the communities to make the connection between the two.

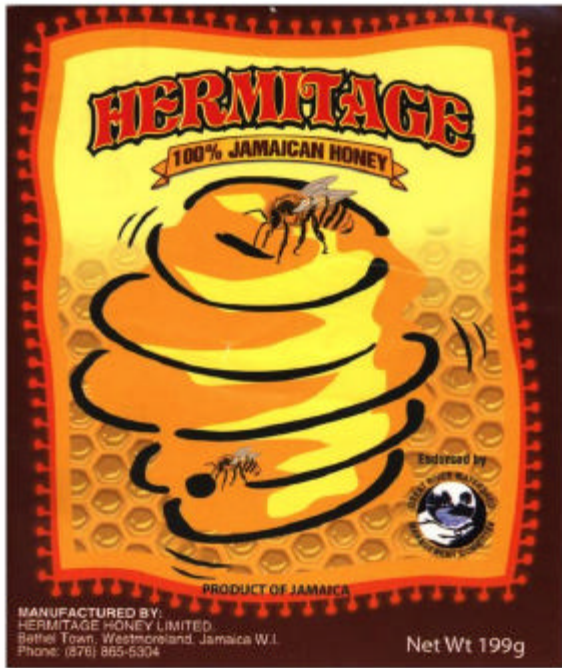


Scotch bonnet pepper production in Rushea, St. James

The major benefit that the Rushea Farmers Group identified as a result of their grant project was increased income. They did not directly cite environmental improvement as a benefit until prompted.



Honey production by Hermitage Honey Limited in Bethel Town, Westmoreland



Hermitage Honey

The Hermitage Honey project focused on expanded production and its economic impact has created an incentive to protect and plant flowering trees.



A recent intervention with likelihood of success includes: the improved production of pineapple (an Anchor project) which encompasses land improvement practices. This project will result in near-term economic benefits. Although many cited financial incentives, other incentives include community pride and reduced labor, especially for women.



Pineapple production in Ginger Hill, St. Elizabeth

Water supply activities provided tangible community benefits and also reduced direct use of rivers for washing. Interest and community support for school sanitation systems in Pisgah and Retrieve, St. James and Cooper's Hill are indicative of local concern for sanitation overriding economic issues.



Improved goat production in the Great River Watershed



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“We must be aware of the economic realities that we see at each meeting.”

Chairperson of the Public Awareness Task Force Rio Grande Watershed Management Committee

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Ridge to Reef Watershed Project



LESSONS LEARNED

Watershed Management is Everybody's Business

Lesson: Planning, management and implementation of environmental projects need to take into account social and cultural realities within each community.

The Knowledge, Attitudes and Practices (KAP) Survey conducted by R2RW in 2002 demonstrated that there is wide variation in age, literacy, and beliefs among those living in each watershed.

experiences to reduce error or mistakes in implementing the projects (older members, teachers, for example), encouraging participation (women, teachers, etc.) and income generating benefits (all community members).



Community clean-up at Dundee, Westmoreland

Efforts have been made to engage all these groups.

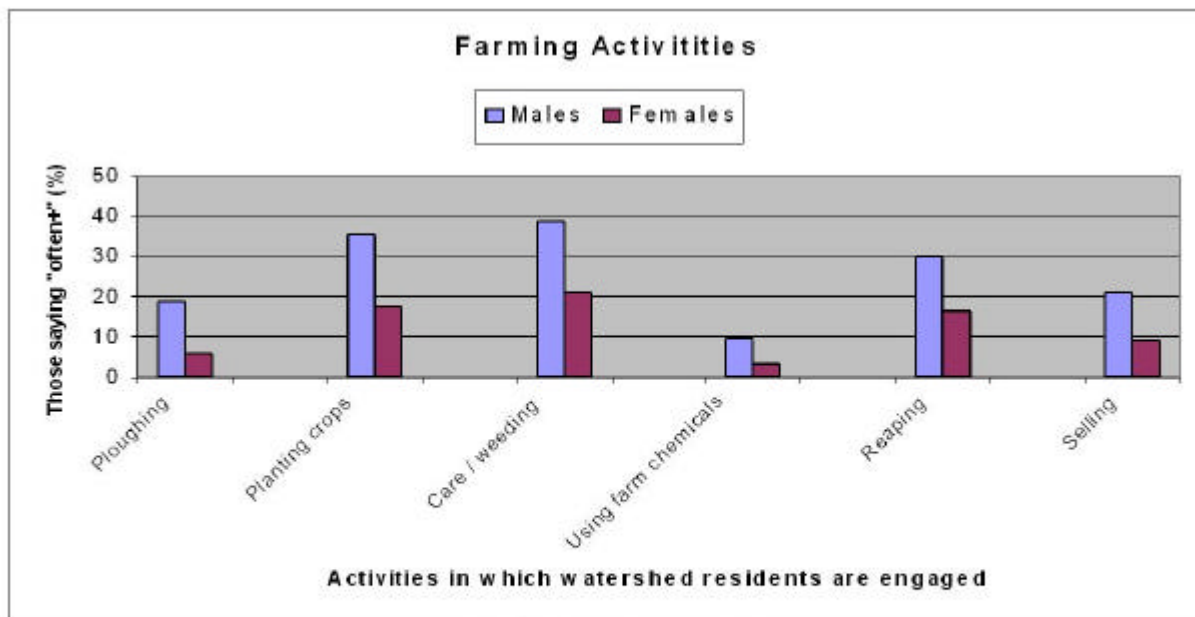


Trying to supply household water needs - Wag Water community

The Rushea hot pepper project in St. James showed women providing strong leadership, technical guidance, a defined market with resulting income.

There is need to involve all sectors of the community in building environmental stewardship leading to sustainability (the youth), use of existing skills and experience (older community members), learning from community

In Pisgah, St. Elizabeth where a constructed wetland was established for the school, it was the women who volunteered their labor and participated in the construction. Men did not participate because there was no clear economic incentive.



Graph from Knowledge Attitudes and Practices Study

The Action Boyz skits and the “It Haffi Legal” campaign were specifically designed to raise awareness among all those living in the watershed. Focused efforts were made to include women, men, young people and the elderly in project activities. Notable success has been made in involving women e.g. the Rushea hot pepper project.

Males tend to participate when economic incentives are clear. Women are more likely to participate when they recognize benefits for themselves and their families,



Young persons learning about the environment

even if income generation is not a principal outcome, as is illustrated by the Water and Sanitation Project at Pisgah All Age School St. Elizabeth. These gender differences have been observed in the Land Management Project in Portland where men dominate and in the Cleaning and Greening of Cambridge Project, in St. James, where women dominate. It is felt that the awareness of women about watershed conservation and environmental stewardship is high but options provided are insufficient.

Participation by the youth less than 25 years of age and older persons, has not been seen on a large scale. Young people need to be involved to influence and engender sustainable change in watershed management. Behavior change among the youth is important for long-term benefit. It is also important to involve older members of the community who have seen environmental degradation and know the consequences first hand.



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Worth a Thousand Words... A Pictorial of the 4th Year

Cambridge Anchor Project



Figure 1 - Garbage filled drain in Cambridge



Figure 2 - Stagnant open sewer in Cambridge



Figure 3 - Hummingbird mascot used in public education and animation for the Cambridge project

Plant a Tree Campaign



Figure 4 - Planting a Cedar seedling in the Great River WMU

Pineapple Anchor Project



Figure 5 - Pineapple demonstration plot showing use of pineapple as barriers along contours

UNEP Conference delegates Tour of Great River WMU



Figure 6 - Delegates from the UNEP conference tour R2RW project activities in the Great River

Youth and the Environment



Figure 7 - Hon Minister Aloun N'dombet Assamba, NEPA CEO Patricia Sinclair McCalla, Executive Director, Jamaica 4-H Lenworth Fulton, Chief of Party Mark Nolan view exhibits at the opening of the Youth and Environment conference

Faith and the Environment Workshop



Figure 8 - Working Group 2 prepare an action plan



Figure 9 - Designated reporter from a working group presents an action plan

Ambassador Cobb in the Rio Grande WMU



Figure 10 - Ambassador Sue Cobb, Leo Douglas, Thera Edwards and Mark Nolan bird watching along the Cuna Cuna Pass trail



Figure 11 - Ambassador Cobb in discussion with Linette Wilks and Mark Nolan at Ambassabeth, Bowden Pen in the Upper Rio Grande



Figure 12 - Ambassador Cobb contributing to the Plant a Tree Campaign in the Rio Grande with assistance from Peter Higgins trail guide and community resident

Hurricane Ivan



Figure 13 - Food for the poor house completely blown over in the Great River



Figure 14 - Broken roadway in the Great River WMU



Figure 15 - Damage plant house at Cedar Grove



Figure 16 - Remains of seedling production at Cacoon Castle



Figure 1 - Roofless meeting shed behind Cambridge Anchor Project office

APM Training



Figure 2 - Gary Forbes demonstrates the victory complete technique of action planning

Phase Out Workshops



Figure 19 - Trevor Spence facilitating at the Great River WMU Phase Out Workshop

Community Clean Ups



Figure 20 - Community Clean Ups jump start stewardship initiatives



Figure 21 - Youth have a vital role to play in community action as seen at the Ginger House community clean up

Rio Grande Land Management Anchor Project



Figure 22 - Everton Parkes and Joe Suah Meet with farmers in Durham

International Environment Days



Figure 23 - Section of the audience at World Wetlands Day at the West Harbour Marina



Figure 24 - Mark Nolan with winners of the art competition held for the design of the watershed sign at Pisgah



Figure 25 - Erection of the Great River watershed sign at Pisgah

Updated Work Plan Gantt Charts Showing Percentage Completion by Task

Tracking Gantt as at September 30, 2004

R2RW Fourth Annual Work Plan (October 1, 2003 to September 30, 2004)

ID	Task Name	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Au	Sep	Oct	No
1	3 Sustainable Environmental Practices in the Great River Watershed														91%
2	3.1 Development of the Great River Watershed Management Committee														98%
3	3.1.1 Finalize and implement the GRW Strategic Plan														94%
4	3.1.1.1 Distribution of Final Plan														100%
5	3.1.1.2 Develop MOUs to implement GRWMC Programs														93%
6	3.1.1.2.1 Develop MOUs with state agencies to implement GRWMC Programs														90%
7	3.1.1.2.2 Develop MOUs with local government agencies to implement GRWMC Programs														90%
8	3.1.1.2.3 Develop MOUs with communities to implement GRWMC Programs														100%
9	3.1.2 Management Activities of the GRWMC														99%
10	3.1.2.1 Regular meetings of the GRWMC														99%
11	3.1.2.1.1 Quarterly meeting of GRWMC														100%
16	3.1.2.1.2 GRWMC Executive Committee														100%
21	3.1.2.1.3 GRWMC AGM														100%
22	3.1.2.2 Production and Marketing Task Force														100%
27	3.1.2.3 Water and Sanitation Task Force														100%
32	3.1.2.4 Compliance and Enforcement Task Force														100%
37	3.1.2.5 Public Awareness Task Force														100%
42	3.1.3 Develop Plan to phase out R2RW support to GRWMC														100%
43	3.1.3.1 Transfer communication database to GRWMC														100%
44	3.1.3.2 Prepare Plan to phase out R2RW support														100%
45	3.2 Improved Production of Pineapple for Sustainable Livelihoods - Anchor Project #1														89%
46	3.2.1 Secure buy-in from stakeholders incl. RADA on anchor project														100%
47	3.2.2 Marketing														52%
48	3.2.2.1 Conduct market analysis for GRW produced pineapples														25%
49	3.2.2.2 Host workshops between producers and potential buyers														80%

Date: Nov 5 '04	Critical		Task Progress		Summary	
	Critical Progress		Milestone		*Rolled Up Task	
	Task		Summary Progress		*Rolled Up Task Progress	

Tracking Gantt as at September 30, 2004

R2RW Fourth Annual Work Plan (October 1, 2003 to September 30, 2004)

ID	Task Name	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Au	Sep	Oct	No	
50	3.2.2.3 Investigate opportunities for processing															25%
51	3.2.3 Hire Project Manager for Anchor Project #1															100%
52	3.2.4 Site selection & conduct soil and water analysis															100%
53	3.2.5 Arrangements for planting material incl. opportunities for tissue culture with SRC															100%
54	3.2.6 Public awareness for anchor project 'Improved production of pineapple for sust livelihoods'															100
55	3.2.6.1 Develop video on pineapple production															100%
56	3.2.6.2 Develop & distribute extension materials on pineapple production															100%
57	3.2.6.3 With participants establish linkages bet livelihoods & sus envir practices															100%
58	3.2.7 Demonstrate environmentally friendly production practices															97%
59	3.2.7.1 Establish pineapple demonstration plots															100%
60	3.2.7.2 Demonstrate contour planting on hillsides															100%
61	3.2.7.3 Demonstrate good cultural practices (nutrients supply, spacing, replanting, etc)															100%
62	3.2.7.4 Introduce improved varieties i.e. Smooth Cayenne, Ripley and Sugar Loaf															90%
63	3.2.7.5 Introduce appropriate technology (including tools & equipment)															100%
64	3.3 Production and Marketing in the Great River Watershed															89%
65	3.3.1 Improved Crop Varieties															75%
66	3.3.1.1 Continue to multiply and distribute disease resistant banana/plantain suckers															100%
67	3.3.1.2 Establish demo plots of disease resistant bananas & plantain, collect & analyze data															0%
68	3.3.1.3 Continue to implement and monitor hot pepper development projects															100%
69	3.3.1.4 Support initiatives to promote organic farming potential															100%
70	3.3.1.5 Establish holding bay for seedlings															100%
71	3.3.2 Livestock Improvement															100
72	3.3.2.1 Continue to implement and monitor Goat Improvement Project															100%
73	3.3.2.2 Establish goat stud stations with high quality bucks															100%
74	3.3.3 Plant A Tree Campaign															100

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Critical		Task Progress		Summary	
Critical Progress		Milestone		*Rolled Up Task	
Task		Summary Progress		*Rolled Up Task Progress	

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ID	Task Name	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Au	Sep	Oct	No
75	3.3.3.1 Assess management of program delivery														
76	3.3.3.2 Continue production, sourcing & distribution of seedlings														100%
77	3.3.3.3 Monitor establishment and provide TA on care of plants														100%
78	3.3.3.4 Integrate tree planting with Green Village program														
79	3.4 Cleaning and Greening Cambridge - Anchor Project #2														85%
80	3.4.1 Develop governance mechanism for solid waste management														97%
81	3.4.1.1 Liaise with Parish Council on Anchor project to establish link with local govt. initiatives														
82	3.4.1.2 Contract Project Manager for Anchor Project' Cleaning and Greening Cambridge'														
83	3.4.1.3 Develop community profile and establish 'before status'														
84	3.4.1.4 Conduct mult-stakeholders workshop/s to develop an envir action plan														
85	3.4.1.5 Conduct community training														100%
86	3.4.1.6 Develop and implement reporting and monitoring procedures														100%
87	3.4.1.7 Launch the CDC														
88	3.4.2 Improve land management & sanitation practices														92%
89	3.4.2.1 Develop community action plan														
90	3.4.2.2 Procure receptacles, tools & equip. for clean up and garbage disposal														
91	3.4.2.3 Establish sorting depot in Cambridge														
92	3.4.2.4 Conduct physical clean up and greening activities														100%
93	3.4.2.5 Erect signs														
94	3.4.2.6 Implement alternate sanitation and waste disposal solutions														100%
95	3.4.2.7 Conduct demonstrations of soil conservation best practices														100%
96	3.4.2.8 Conduct field days, workshops & seminars to share best practices														100%
97	3.4.3 Public awareness for anchor project 'Cleaning and greening Cambridge'														65%
98	3.4.3.1 Test participation and comun program with stakeholders at different educ levels														
99	3.4.3.2 Strengthen/establish clubs with environmental mandates														25%

Date: Nov 5 '04	Critical		Task Progress		Summary	
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ID	Task Name	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Au	Sep	Oct	No
100	3.4.3.3 Conduct competitions and special activities - mural, quiz, debating, etc														80%
101	3.4.3.4 Develop and distribute enviro kits														100%
102	3.5 Water and Sanitation Activities in the Great River Watershed														88%
103	3.5.1 Water & Wastewater intervention														75%
104	3.5.1.1 Complete implementation of community Mafoota Car wash & laundry														75%
105	3.5.2 Solid Waste Management Interventions														100%
106	3.5.2.1 Host solid waste seminar with NSWMA & MBMP														100%
107	3.5.2.2 Provide support to community solid waste management initiatives e.g. composting														100%
108	3.5.3 Water Quality Monitoring on the Great River														100
109	3.5.3.1 Analyze implications of results from water quality monitoring program														100%
110	3.5.3.2 Make recommendations for simplified water quality monitoring program														100%
111	3.5.3.3 Use water quality information to guide land management and W&S initiatives														100%
112	3.6 Other Public Awareness Activities														98%
113	3.6.1 Obtain consensus from WMCs, anchor project managers & partners on PA strategy														100%
114	3.6.2 Enhance environmental awareness through community drama (Action Boyz)														100%
115	3.6.3 Promote GRW Green Village Stewardship program														100%
116	3.6.4 Participate in fairs, expos and community environmental fora														100%
117	3.6.5 Design baseline and mid-point indicators for new and existing educ strategies														50%
118	3.6.6 Plan and implement 2nd Youth & the Environment Forum														100%
119	3.6.7 Plan and implement seminar on Religion and the Environment														100%
120	3.6.8 Provide enviro kits to youth and community organizations														100%
121	3.7 Gender Considerations in the Great River Watershed														100%
122	3.7.1 Evaluate gender in R2RW and plan with partners use of a gender equity approach														100%
123	3.7.2 Demonstrate how the gender equity process promotes SWM														100%
124	3.7.3 Provide annual gender report of project activities														100%

Date: Nov 5 '04

Critical



Task Progress



Summary



Critical Progress



Milestone



*Rolled Up Task



Task



Summary Progress



*Rolled Up Task Progress



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ID	Task Name													Oct	No	
		Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Au	Sep	Oct	No		
125	Component 1A Benchmarks														✖	9/30
126	Plan to phase out R2RW support to GRWMC developed														✖	9/30
127	Improved pineapple production practices demonstrated														✖	9/30
128	Cambridge CDC implementing activities to address solid waste management														✖	9/30
129	Eight communities educated on waste management issues														✖	9/30
130	Three initiatives to enhance public awareness of priority issues implemented														✖	9/30
131	Six communities educated through community drama														✖	9/30

Date: Nov 5 '04	<p>Critical </p> <p>Critical Progress </p> <p>Task </p>	<p>Task Progress </p> <p>Milestone </p> <p>Summary Progress </p>	<p>Summary </p> <p>*Rolled Up Task </p> <p>*Rolled Up Task Progress </p>	
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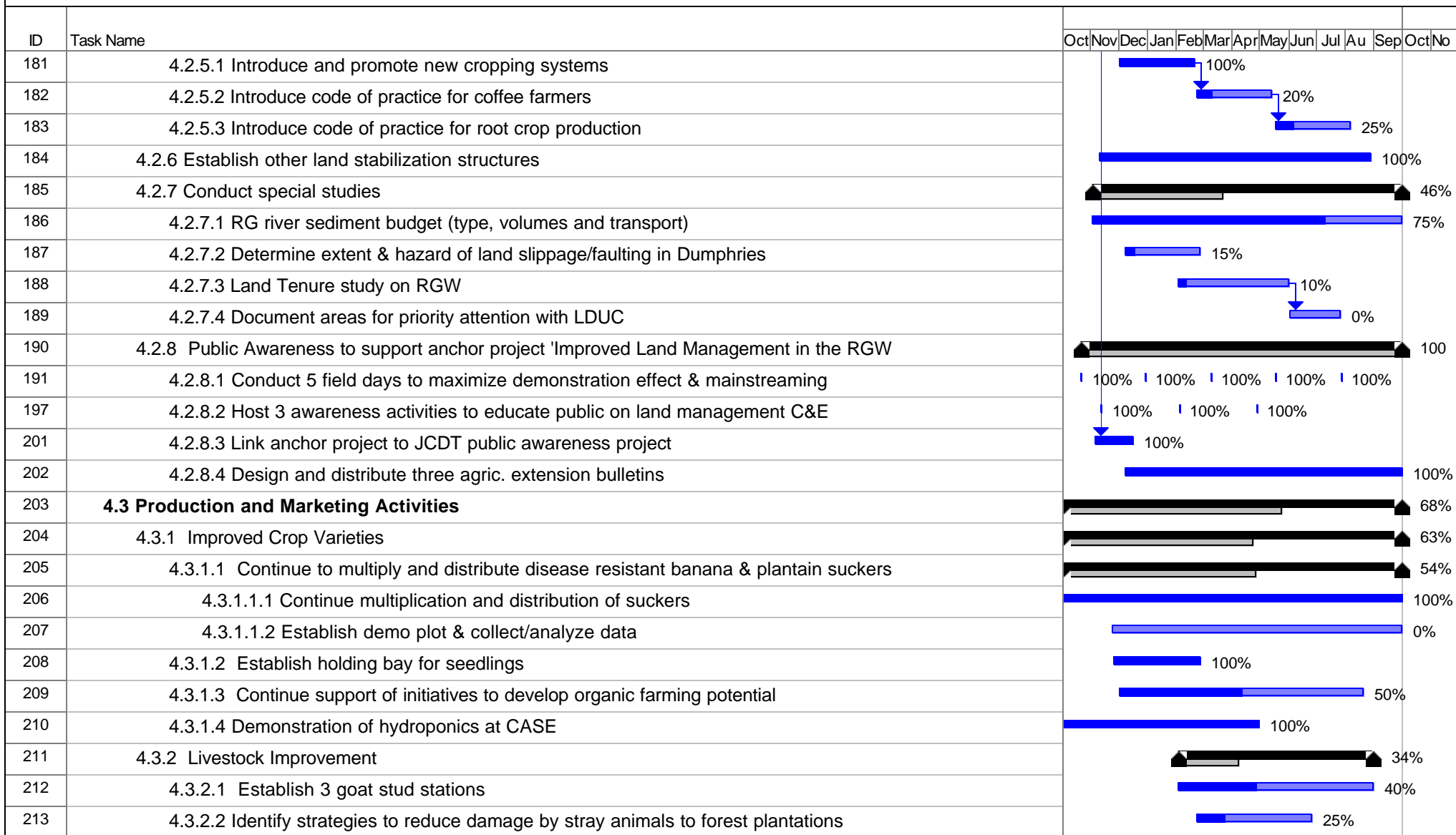
R2RW Fourth Annual Work Plan (October 1, 2003 to September 30, 2004)










ID	Task Name	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Au	Sep	Oct	No
132	4 Sustainable Environmental Practices in the Rio Grande Watershed														78
133	4.1 Development of the Rio Grande Watershed Management Committee														97%
134	4.1.1 Develop RGW Strategic Plan														100%
135	4.1.1.1 Develop Scope of Work & define contents of Plan														100%
136	4.1.1.2 TA to develop Plan														100%
137	4.1.1.3 Present Plan at facilitated seminar														100%
138	4.1.1.4 Incorporate feedback and publish Plan														100%
139	4.1.2 Management activities of the RGWMC														100%
140	4.1.2.1 Regular meetings of the RGWMC														100%
141	4.1.2.1.1 Quarterly meetings of the RGWMC														100%
146	4.1.2.1.2 RGWMC Executive meetings														100%
151	4.1.2.1.3 RGWMC AGM														100%
152	4.1.2.2 Land & Conservation Task Force														100%
157	4.1.2.3 Water & Sanitation Task Force														100%
162	4.1.2.4 Compliance & Enforcement Task Force														100%
167	4.1.2.5 Public Awareness Task Force														100%
172	4.1.3 Develop plan to phase out R2RW support to RGWMC														84%
173	4.1.3.1 Transfer communication database to RGWMC														75%
174	4.1.3.2 Prepare plan to phase out R2RW support														100%
175	4.2 Improved Land Management in the RGW - Anchor Project #3														79%
176	4.2.1 Secure buy-in from stakeholders on anchor project														100%
177	4.2.2 Hire Project Manager for Anchor Project #3														100%
178	4.2.3 Approve/implement three community agroforestry projects														100%
179	4.2.4 Implement RGW tree planting initiative														100%
180	4.2.5 Introduce and promote environ. friendly cropping practices														48%

Date: Nov 5 '04	Critical		Task Progress		Summary	
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	Task		Summary Progress		*Rolled Up Task Progress	

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ID	Task Name	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Au	Sep	Oct	No
214	4.3.3 Enterprise Development														100
215	4.3.3.1 Explore and lend support to agro-processing opportunities														100%
216	4.3.3.2 Foster and promote eco-tourism initiatives														100%
217	4.4 Water & Wastewater interventions														51
218	4.4.1 Implement water harvesting and sanitation project at Coopers Hill Primary School														35%
219	4.4.2 Implement water supply projects														63%
220	4.4.2.1 Windsor														0%
221	4.4.2.2 Comfort Castle														100%
222	4.4.2.3 Cornwall Barracks														80%
223	4.4.3 Solid Waste interventions														7%
224	4.4.3.1 Collaborate with NSWMA community sorting centre based on Cambridge experience														50%
225	4.4.3.2 Collaborate with NSWMA on garbage collection in Upper RGW														0%
226	4.4.4 Water Quality Monitoring														70
227	4.4.4.1 Collaborate with CWIP2 Re water quality monitoring program for Portland														100%
228	4.4.4.2 Identify/hire TA for water quality monitoring program for the RGW														100%
229	4.4.4.3 Conduct sampling and analyze water quality data														40%
230	4.5 Other Public Awareness Activities														100
231	4.5.1 Share lessons learned in GRW with participants in RGW														100%
232	4.5.2 Work with CWIP2 and EAST projects to promote Portland as a green destination														100%
233	4.5.3 Participate in fairs, expos and community environmental fora														100%
234	4.5.4 Plan and implement community education program for the lower Rio Grande Valley														100%
235	4.5.5 Provide enviro kits to youth and community organizations														100%
236	4.6 Gender Considerations in the Rio Grande Watershed														100%
237	4.6.1 Evaluate gender in R2RW and plan with partners use of a gender equity approach														100%
238	4.6.2 Demonstrate how the gender equity process promotes SWM														100%

Date: Nov 5 '04	Critical		Task Progress		Summary	
	Critical Progress		Milestone		*Rolled Up Task	
	Task		Summary Progress		*Rolled Up Task Progress	

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ID	Task Name													Sep	Oct	No	
		Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Au					
239	4.6.3 Provide annual gender report of project activities																
240	Component 1B Benchmarks																
241	RGW Strategic Plan prepared																✗ 9/30
242	Plan for phase out of R2RW support to RGWMC developed																✗ 9/30
243	Three new agroforestry projects aproved/implemented																✗ 9/30
244	Three water harvesting and sanitation projects completed																✗ 9/30
245	Two exchange visits to GRW conducted																✗ 9/30
246	Annual gender report prepared																✗ 9/30

Date: Nov 5 '04	Critical		Task Progress		Summary	
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	Task		Summary Progress		*Rolled Up Task Progress	

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ID	Task Name	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Au	Sep	Oct	No
247	5 Enhancing Compliance and Enforcement														67%
248	5.1 Compliance and Enforcement - Nationally														69%
249	5.1.1 Sensitization of magistrates, other court personnel & senior agencies personnel														96%
250	5.1.1.1 Conduct seminar for judges and other court personnel														96%
251	5.1.1.1.1 Complete preparation & distribution of CD of magistrates seminar														90%
252	5.1.1.1.2 Plan and conduct seminar for lay magistrates, deputy clerk of courts & attorneys														100%
253	5.1.2 Training of enforcement officers														96%
254	5.1.2.1 Develop training curricula & manuals with MIND, ENACT & NEPA on envr laws														100%
255	5.1.2.2 Training curricula & materials for course 'intro to envr & planning laws'														95%
256	5.1.2.3 Develop training curricula & materials for course targeted at community leaders														95%
257	5.1.2.4 Deliver training courses at the national level														95%
258	5.1.3 Identify baseline on environmental cases convicted in court														50%
259	5.1.4 Develop & distrib. pocket guide to envr laws in Ja														12%
260	5.1.4.1 Printing & distribution of 1000 additional copies														100%
261	5.1.4.2 Revise and complete 2nd edition of Pocket Guide														20%
262	5.1.4.3 Printing and distribution of 2nd edition														0%
263	5.1.5 Promote, develop and disseminate popular materials on C & E														85%
264	5.1.5.1 Continue distrib of C & E posters with NEPA Pub ED														80%
265	5.1.5.2 Dev & distribute a 2004 calendar using the C & E posters														100%
266	5.2 Compliance and Enforcement in the Great River Watershed (GRW)														83%
267	5.2.1 Partnership and Coordination														62%
268	5.2.1.2 Plan & implement strategic workshop on C&E with regional managers of agencies														100%
269	5.2.1.3 Formalize role of Compliance & Regional Services Div of NEPA in CETF														50%
270	5.2.2 Watershed level envr training and sensitization program														50%
271	5.2.2.1 Conduct training of C&E officers														50%

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ID	Task Name	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Au	Sep	Oct	No
272	5.2.2.2 Conduct training of community leaders in envir & planning laws and advocacy														50%
273	5.2.3 Cleaning and greening of communities and 'hotspots'														100%
274	5.2.3.1 Identify hotspots														100%
275	5.2.3.2 Conduct community meetings to obtain support, buy-in & leadership														100%
276	5.2.3.3 Implement community clean-up programs in 5 communities														100%
277	5.2.4 Fostering community enforcement														100%
278	5.2.4.1 Conduct training, compile & distrib info kits, visits to demo projects														100%
279	5.2.4.2 Promote envir friendly land management practices														100%
280	5.2.4.3 Encourage community leaders to monitor envir conditions in their areas														100%
281	5.2.4.4 Encourage reporting of envir offenses by community members to authorities														100%
282	5.3 C&E in the Rio Grande Watershed														42%
283	5.3.1 Partnership & coordination														37%
284	5.3.1.1 Formalize role of Compliance & Regional Services Div of NEPA in CETF														40%
285	5.3.1.2 Explore opportunities for enhancing C&E with new municipal police														25%
286	5.3.1.3 Support NEPA to develop a mechanism for reporting envir breaches and actions taken														30%
287	5.3.2 Watershed level envir training and sensitization program														50%
288	5.3.2.1 Conduct training of C & E officers														50%
289	5.3.2.2 Conduct training of community leaders in envir & planning laws and advocacy														50%
290	5.3.3 Quarry Monitoring Committee														33%
291	5.3.3.1 Provide TA & resources to establish a Quarry Monitoring Committee in Portland														100%
292	5.3.3.2 Develop a database/inventory of current licenses and permits														0%
293	5.3.3.3 Disseminate info on C & E procedures of all related agencies														0%
294	5.3.4 Disaster mitigation														52%
295	5.3.4.1 Liaise with ODPEM on disaster mitigation issues and strategies for Portland														0%
296	5.3.4.2 Undertake inventory of existing equip & procure additional alert equip														0%









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		Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep		Oct
297	5.3.4.3 Conduct training in disaster awareness and use of equipment														0%
298	5.3.4.4 Undertake public awareness campaign on envir laws e.g. building codes														100%
299	Component 2 Benchmarks														
300	Seminar to educate lay magistrates and deputy clerks of the courts held														✘ 9/30
301	Curricula and training materials for training of enforcement personnel developed														✘ 9/30
302	Training seminar for community leaders in C&E held														✘ 9/30
303	Pocketsize field guide finalized, distributed and in active usage														✘ 9/30
304	Portland Quarries Monitoring Committee established and addressing mining issues														✘ 9/30
305	Baseline of environmental court cases established														✘ 9/30

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ID	Task Name	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov
306	6 Institutional Strengthening and Capacity Building for Watershed Management														
307	6.1 Strengthening of the SWB														
308	6.1.1. Team building in Branch (2 Retreats)														
311	6.1.2 Finalize equipment specs and procurement														
312	6.1.3 Update SWB watershed database														
313	6.1.3.1 Explore use of LDUC info for SWB Database														
314	6.1.3.2 Incorporate data from KAP survey														
315	6.1.3.3 Update Watershed ranking														
316	6.2 Training for Skill Development														
317	6.2.1 Design and implement course in meeting management														
318	6.2.2 Design and implement course in writing skills														
319	6.2.3 Design and implement course in rapid appraisal techniques for watershed status														
320	6.2.4 Design and implement course in facilitation skills														
321	6.2.5 Design and implement course in fund raising														
322	6.3 LWMC Development														
323	6.3.1 Continue skill building training courses														
324	6.3.2 Study to develop linkage between LWMCs and PDC														
325	6.3.3 Continued networking of LWMCs - 2 workshops														
326	6.3.4 Exchange visits between and within watersheds														
327	6.3.5 Ensure the WPA revision clarifies role of LWMCs														
328	6.3.6 Articulate incentives for LWMC e.g. community competitions														
329	6.4 Policy and Legislation														
330	6.4.1 Watershed policy														
331	6.4.1.1 Finalize content of policy														
332	6.4.1.2 Presentations to NIWMC and NRCA Board														

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333	6.4.1.3 MLE Submission to cabinet			90%											
334	6.4.1.4 Launch policy														
335	6.4.2 Watershed Protection Act														15%
336	6.4.2.1 Monthly series of focus group consultations														25%
337	6.4.2.2 Conduct Regulatory Impact Assessment Study (RIAS)														25%
338	6.4.2.3 Retain consultant (retired judge) to lead process														0%
339	6.4.2.4 Preparation of draft regulations under new Act														0%
340	6.5 NIWMC Activities														85%
341	6.5.1 Tours of GRW & RGW to highlight interventions under anchor projects														100%
342	6.5.2 Develop mechanism to incorporate LWMC input into the NIWMC														50%
343	6.5.3 Retreat (based on Council consensus) to determine focus next 2-3 yrs														100%
344	6.5.4 Participate in NIWMC working groups														100%
345	6.5.5 Develop website for NIWMC														60%
346	6.6. "Improved Sanitation Management Practices" - Anchor Project #4														60%
347	6.6.1 Review and document cost effectiveness of sanitation technologies														50%
348	6.6.2 Setup and monitor simulated systems at CASE														70%
349	6.6.3 Establish linkages with anchor project 'Cleaning and Greening Cambridge'														70%
350	6.6.4 Mainstreaming of constructed wetland technology														65%
351	6.6.4.1 Formulate local design criteria for constructed wetland systems														50%
352	6.6.4.2 Make presentations to special interest groups (architects, engineers, contractors)														100%
353	6.6.4.3 Make presentation on constructed wetland technologies to National Sanitation Task Force														0%
354	6.6.4.4 Plan & host workshops for MOH, MOE, and Parish Councils on constructed wetland technology														100%
355	6.6.4.5 Make submission for NEPA approvals on demo wetland systems & hand over to beneficiaries														0%
356	6.6.4.6 Provide info to agencies responsible for developers manual, builders code, etc														40%
357	6.6.5 Public Awareness to support anchor project #4														57%

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		Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Au	Sep			
358	6.6.5.1 Plan and host technical workshops on sanitation technologies in RGW & GRW													100%		
359	6.6.5.2 Link anchor project to Green Village Award Program													100%		
360	6.6.5.3 Assist communities with sanitation components of Action Plans (e.g. Green Village)													50%		
361	6.6.5.4 Continue River Action campaign incorporating sanitation technologies													100%		
362	6.6.5.5 Disseminate info on sanitation technologies through mass media													10%		
363	6.7 Transfer Approaches, Methodologies and Lessons to Key Partners and Stakeholders													91%		
364	6.7.1 Document successes and achievements through case studies (including grant activities)													100%		
365	6.7.2 Showcase achievements & transfer lessons learned (seminar)													0%		
366	6.7.3 Infuse lessons learned into relevant partners and stakeholders													75%		
367	6.7.4 Implement special studies													100%		
368	6.8 Public Awareness													88%		
369	6.8.1 Publish quarterly newsletter													100%		
370	6.8.2 Complete distribution of posters													95%		
371	6.8.3 Issue regular press releases													100%		
372	6.8.4 Expand media opportunities (Radio, TV, Print)													100%		
373	6.8.5 Presentations at public events e.g. JIEP Speakers Forum													100%		
374	6.8.6 Finalization of public education kits													100%		
375	6.8.7 Develop & disseminate information on constructed wetland technologies at the national level													25%		
376	Component 3 (Institutional Strengthening) Benchmarks															✘ 9/30
377	Constructed wetland technology promoted and adopted for use															✘ 9/30
378	GPS Units procured for SWB															✘ 9/30
379	PubEd kit developed, produced & distributed															✘ 9/30
380	Three training courses held															✘ 9/30
381	Watershed policy finalized															✘ 9/30
382	Two LWMC networking workshops held															✘ 9/30

Date: Nov 5 '04	Critical		Task Progress		Summary	
	Critical Progress		Milestone	✘	*Rolled Up Task	
	Task		Summary Progress		*Rolled Up Task Progress	

Tracking Gantt as at September 30, 2004

R2RW Fourth Annual Work Plan (October 1, 2003 to September 30, 2004)

ID	Task Name	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Au	Sep	Oct	No
383	Four newsletters published												★	9/30	

Date: Nov 5 '04	Critical	Task Progress	Summary
	Critical Progress	Milestone	*Rolled Up Task
	Task	Summary Progress	*Rolled Up Task Progress

Tracking Gantt as at September 30, 2004

R2RW Fourth Annual Work Plan (October 1, 2003 to September 30, 2004)










ID	Task Name	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Au	Sep	Oct	No
384	7 R2RW Project Management														100
385	7.1 Grant Management														100
386	7.1.1 Refine grant criteria for anchor projects														100%
387	7.1.2 Continued screening of grant applications by WMCs														100%
388	7.1.3 Approve/ Implementation of eight new grants														100%
389	7.1.4 Regular monitoring of grant activities														100%
390	7.2 Staffing														100
391	7.2.1 Implement new organizational structure from internal review														100%
392	7.2.2 Enhance precision of Scopes of Work for STTA														100%
393	7.2.3 Staff Team building and information sharing														100
394	7.2.3.1 Weekly Admin meetings														100%
395	7.2.3.2 Monthly technical team meetings														100%
396	7.3 Management Arrangements														100
397	7.3.1 Implement Recommendations from the Internal Review														100%
398	7.3.2 Project coordination meetings														100
399	7.3.2.1 NEPA Senior Management Meetings														100%
400	7.3.2.2 Project Implementation Meetings														100%
401	7.3.2.3 Interagency Steering Committee meeting														100%
404	7.3.2.4 Portland Coordination meetings														100%
409	7.3.3 Refine indicators in Performance Monitoring Plan														100%
410	7.3.4 Fourth Annual Work Plan published														100%
411	7.3.5 Semi Annual and Annual Reports published														100%
414	Project Management Benchmarks														100
415	All grants monitored twice per year														✗ 9/30
416	Eight new grants implemented														✗ 9/30

Date: Nov 5 '04	Critical		Task Progress		Summary	
	Critical Progress		Milestone	✗	*Rolled Up Task	
	Task		Summary Progress		*Rolled Up Task Progress	

Tracking Gantt as at September 30, 2004

R2RW Fourth Annual Work Plan (October 1, 2003 to September 30, 2004)

ID	Task Name													Sep	Oct	No	
		Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Au					
417	New staffing structure implemented and functional														✘		9/30
418	Eight Project Implementation Committee meetings held														✘		9/30
419	On time submission of work plan and semi annual reports														✘		9/30

Date: Nov 5 '04	Critical  Critical Progress  Task 	Task Progress  Milestone  Summary Progress 	Summary  *Rolled Up Task  *Rolled Up Task Progress 
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