



**A Brief Rio Grande Stakeholder  
Assessment Report – Concerns  
and Obstacles**





# Ridge to Reef Watershed Project

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## **A Brief Rio Grande Stakeholder Assessment Report - Concerns and Obstacles**

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Prepared for the:

Ministry of Land and Environment  
Mine Monitoring Unit

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# Table of Contents

<b>Preface</b>	<b>iv</b>
<b>Acronyms</b>	<b>v</b>
<b>Background</b>	<b>1</b>
<b>Purpose of Study</b>	<b>1</b>
<b>Methodology</b>	<b>2</b>
<b>Summary of Findings</b>	<b>2</b>
✍ Agency Background	2
✍ Funding	3
✍ Mandate, Responsibilities and Activities Relating to the Rio Grande Area	4
✍ Collaborations Among Agencies	10
✍ Obstacles	11
✍ Concerns	13
✍ Gaps Identified by Agencies in their Work	14
<b>Analysis of Findings</b>	<b>15</b>
✍ Collective Summary	15
✍ Summary of Resource Materials	16
✍ Conclusion	16
<b>Figures</b>	
Figure 1      Percentage Agency Composition in Rio Grande	2
Figure 2      Adequacy of Stakeholder Funding	3
Figure 3      Agency Collaborations	11
Figure 4      Stakeholder Obstacles	12
<b>Appendices</b>	
Appendix I    Scope of Work	18
Appendix II   Stakeholder Questionnaire	21
Appendix III  List of Stakeholder Contracts	24
Appendix IV  Availability of Resource Material	27

## Preface

The Ridge to Reef Watershed Project (R2RW) is a five 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 Contract Results or Components contributing to results under SO2. Component 1 will assist targeted organizations to identify and promote sustainable environmental management practices by resource users. Component 2 focuses on identifying and supporting solutions to improve 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. ARD, Inc is implementing the Ridge to Reef Watershed project.

**The Rio Grande Stakeholders Assessment** represented an attempt to outline the various concerns and obstacles faced by the stakeholders involved within the Rio Grande watershed and an attempt to highlight the various gaps, duplications, strengths, weaknesses and levels of interaction that are present. It is not presented as a detailed study, but instead as a brief overview of the issues that exist according to the input of the various stakeholders.

## Acronyms

CASE	College of Agriculture Science and Education
CDC	Community Development Committees
CWIP	Coastal Water Improvement Project
EAST	Environmental Audit for Sustainable Development
ENACT	Environmental Action Project
GG	Green Globe
GOJ	Government of Jamaica
JAS	Jamaica Agricultural Society
JBDC	Jamaica Business Development Centre
JCDT	Jamaica Conservation Development Trust
MIDA	Micro Investment Development Agency
MLE	Ministry of Land and Environment
NEPA	National Environment and Planning Agency
NHT	National Housing Trust
NRCA	Natural Resources Conservation Authority
NWA	National Works Agency
ODPEM	Office of Disaster Preparedness and Emergency Management
PDC	Parish Development Committee
PPC	Portland Parish Council
PEPA	Portland Environmental Protection Agency
PIOJ	Planning Institute of Jamaica
RADA	Rural Agricultural Development Authority
R2RW	Ridge to Reef Watershed Project
RGW	Rio Grande Watershed Project
SDC	Social Development Commission
SRC	Scientific Research Council
TPDCo.	Tourism Product Development Company
USAID	United States Agency for International Development
UWI	University of the West Indies
UTECH	University of Technology
WRA	Water Resource Authority
DAC	Development Area Committee

## Background

The Ridge to Reef Watershed Project conducted the following analysis and assessment at the request of the Ministry of Land and Environment (Mr. Oral Rainford).

This request was based on a meeting with preliminary Government stakeholders to discuss development concerns in the Rio Grande, Portland held on Wednesday, October 1, 2003 at the Ministry of Land and Environment.

The primary aim of this meeting was to discuss matters related primarily to mining and tourism within the Rio Grande Watershed and to allow mainly government entities with responsibility for various activities to outline their concerns.

From this, a number of issues were highlighted. These included issues relating to soil erosion, flooding, deforestation, inappropriate mining practices, tourism interests, natural geological activities, conflicts between tourism and mining activities, weather pattern and their impact on development activities and development challenges within the watershed.

## Purpose of Study

The central aim of this short-term study was to collect, collate, analyze and document major development concerns of each agency invited to the October 1, 2003 meeting along with others activities within the Rio Grande Watershed., in respect to development.

This preliminary assessment would assist in determining how existing activities could co-exist while highlighting duplication of roles, gaps and the opportunities to collaborate in the use of the natural resources on the Rio Grande.

## Contract Summary

R2RW was asked to undertake the cost of this short-term consultancy based on concerns highlighted. To achieve this goal, a consultant was retained to carry out specific activities according to the purpose of the study. This activity falls under 5.3.3.1 of the R2RW Fourth Annual work plan to provide technical support to Quarry Monitoring Committee in Portland. Ms. Jodi Johnson who recently completed a post-graduate degree in Urban and Rural Natural Resource Management was contracted.

The principal output to be delivered at the completion of this study is a report containing but not limited to:

- ✍ A review of all previous studies done in the Rio Grande Watershed relevant to the purpose of this Scope of Work;
- ✍ Report on the outcome of meetings/interviews held with Agencies and Communities to establish their concerns/involvement;
- ✍ Recommendations for collaboration and co-existing of activities on the Rio Grande. This includes recommendations on the roles of the R2RW Project, the RGWMC, and the NIWMC in regards addressing environmental issues in the Rio Grande Watershed;
- ✍ Preparation of findings in a Draft Report;
- ✍ Presentation of Draft Report to a meeting of State Agencies; and

## ✍ Preparation of a Final Report

Under the terms of the contract, this assignment is not intended to be a detailed research, but an attempt to document the current status of work being undertaken on the Rio Grande and recommendations for the co-existing of activities among agencies. (See *Appendix I* for SOW)

## Methodology

The methodology used to undertake this study includes:

### A. Questionnaire

1. This was developed and implemented with key stakeholders to collect and facilitate the collation of development activities of agencies regarding their role, responsibilities and status of involvement in the Rio Grande.
2. Over a 4-week period, the questionnaires were distributed and contact made with the relevant stakeholders where possible to ensure completion.
3. The completed stakeholder questionnaires were assessed to identify strengths, weaknesses, duplication of roles, gaps, as well as opportunities. The findings were then presented.

*(See Appendix II for the questionnaire used in this exercise)*

### B. An analysis of previous Rio Grande reports/studies within the respective agencies was carried out and noted accordingly.

### C. A draft report was prepared and presented to the committee established by the MLE. Comments were integrated, and the scope expanded.

1. A second draft was presented to the committee as well as circulated to stakeholders.
2. A final draft was then prepared and presented to the R2RW technical team.

## Limitations

The numbers of agencies were expanded twice. It was suggested that the following agencies be contacted and added to the further list of stakeholders interviewed - Jamaica Constabulary Force, Jamaica Agricultural Society, Urban Development Corporation, Portland Chamber of Commerce, National Solid Waste Management Authority and National Water Commission.

This third addition was not possible within the timeframe allocated for the study, and should be taken into consideration for future studies regarding stakeholders in the Rio Grande watershed.

A list of all the stakeholders contacted to complete the questionnaire is presented below:

### ***List of Stakeholder Contacts Successfully Contacted***

- |                            |                        |
|----------------------------|------------------------|
| 1. Agro Expo Farms         | 5. EAST                |
| 2. CASE                    | 6. ENACT               |
| 3. CDC –St. Margaret’s Bay | 7. Forestry Department |
| 4. CWIP2                   | 8. JCDD                |

- |  |                             |
|--|-----------------------------|
| 9. Mining and Quarry Association of Jamaica              | 17. PEPA                    |
| 10. MLE-Mines and Geology                                | 18. PIOJ                    |
| 11. MLE-Mine Monitoring Unit                             | 19. Portland Parish Council |
| 12. Ministry of Tourism - TPDCo./River Rafting Authority | 20. R2RW                    |
| 13. NEPA   | 21. RADA                    |
| 14. NWA  | 22. RGWMC                   |
| 15. ODPEM (northern office)                              | 23. Rupert Miller           |
| 16. PDC  | 24. SDC – Portland          |
|  | 25. UWI                     |
|  | 26. WRA                     |

*(See Appendix III for summary of the agencies interviewed with contact information)*

## **Summary of Findings**

### **Agency Background**

A majority of the stakeholders in the Rio Grande area are National Agencies. The others are local agencies, NGO's and development projects.

The list below gives a breakdown of those interviewed by National Agencies, Local Agencies, NGO's, Educational Institutional, Development Projects and Private Mining Entities.

#### ***National Agencies***

1. NEPA
2. MLE-Mines and Geology
3. MLE- Mine Monitoring Unit
4. Ministry of Tourism TPDCo./River Rafting – Authority
5. RADA
6. Forestry Department
7. WRA
8. ODPEM
9. PIOJ
10. NWA

#### ***Local Agencies***

1. Portland Parish Council
2. Portland PDC
3. St. Margaret's Bay CDC
4. Portland SDC

#### ***NGO's***

1. JCDDT
2. PEPA

#### ***Educational Institutions***

1. UWI
2. CASE

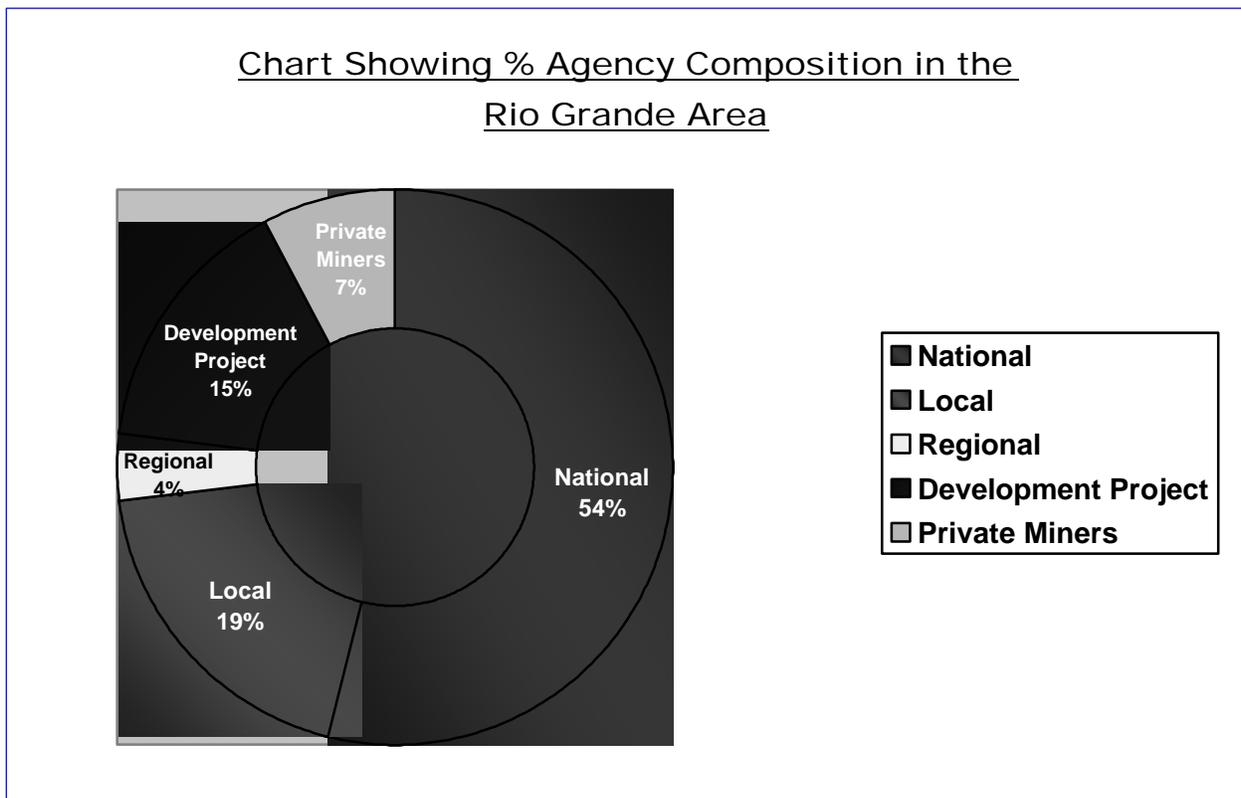
### ***Mining Entities***

1. Rupert Miller
2. David Phillipson - Agro Expo Farms
3. Mining and Quarry Associations of Jamaica

### ***Development Projects***

1. R2RW
2. CWIP2
3. EAST
4. ENACT

**Figure 1** Shows the Percentage Composition of the Agencies Interviewed in the Rio Grande Area



Many of these National Agencies have had the longest standing active role in the Rio Grande Area:

*NB: Some government agencies have changed name*

- Forestry Department (since it's inception) - **65 years**
- WRA (previously Underground Water Authority) – **50 years**
- The Ministry of Tourism (under the River Rafting act) – **34 years**
- PIOJ- **30 years**
- NEPA (previously NRCA) -**31 years**
- MLE-Mines and Geology Division- **17 years**

Of all the National Agencies, the Ministry of Land and Environment through the Mine Monitoring Unit has had the least involvement i.e. just over **2 years**.

On average, involvement outside of these agencies ranges between 4-15 years, with CWIP2 having the least input to date with only 6 months of direct association in the Rio Grande area. SDC specifically, has been involved in the area in excess of forty years.

Of the three mining entities represented Rupert Miller has been mining in the area the longest i.e. 13 years.

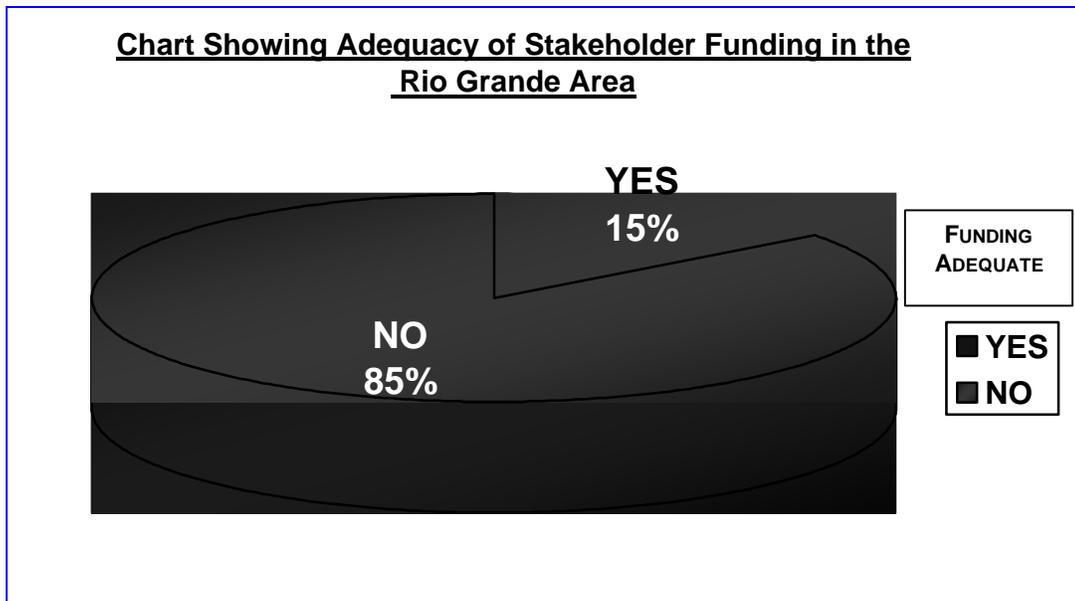
### Funding

With the exception of the development projects, all other stakeholders ranging from National Agencies to the Mining Entities considered their funding for work in the Rio Grande area inadequate.

The Government of Jamaica (GOJ) and donor funding in this case is the main source of funding. Approximately 60% of these stakeholders depended on the GOJ for financial support and 24% on donor funding respectively.

The development projects obtained funding through United States or Canadian Government assistance via USAID and CIDA, with some contribution from the GOJ. They accounted for 16%.

**Figure 2** Provides a Display of Stakeholder Funding where 85% of those Interviewed Considered Funding Inadequate to Fulfill their Mandate in the Rio Grande Area



## **Mandate, Responsibilities and Activities Relating to the Rio Grande area**

### **a) Summary of Mandate**

The mandate of most National and Local Agencies deals with monitoring, regulating and management of the natural resources within the Rio Grande area, and the utilization of these resources. Aspects covered include river rafting, mining, disaster management, soil and water conservation and management along with community development.

The NGO's, Development Projects and Educational Institutions have mandates pertaining specifically to environmental or watershed management through sustainable development and community development/assistance.

The Mining Entities are concerned with removal of excess riverine material and exploitation of minerals through mining.

*NB: The mandates vary. Some agencies responded according to their involvement in the Rio Grande only. Others responded based on their general mandate.*

### **b) Summary of Responsibilities and Activities**

The primary responsibilities/activities of the stakeholders in the Rio Grande overlap with their mandate (see the table below).

The responsibilities/activities of many National and Local agencies however deal with specific aspects of their mandates which include the issuing of permits and licenses, liaising with community members and the supervision of activities which have a direct environmental or social impact on the Rio Grande area.

Environmental education, conservation efforts and community integration are some of the primary responsibilities/activities of the NGO's, Development Projects and Educational Institutions.

### **c) Comments on Future Plans/Developments**

The future plans/developments of many stakeholders involves the enhancement of existing infrastructure within the Rio Grande according to their mandates, continued monitoring, and the implementation of projects and management plans.

### National Agencies

Agency	Mandate	Primary Responsibilities/Activities in the RGW	Source of Funding	Funding Adequate	Future Plans/Developments
NEPA	<ul style="list-style-type: none"> <li>✍ To achieve balances and environmentally sound land use</li> <li>✍ To reduce the destructive effects of rain due to soil erosion and vegetation loss</li> <li>✍ To promote public awareness of watersheds and watershed related issues</li> </ul>	<ul style="list-style-type: none"> <li>✍ Permits and licenses for developments</li> <li>✍ Wildlife monitoring</li> <li>✍ Public education</li> <li>✍ Monitoring and enforcement of laws and regulations</li> </ul>	GOJ	No	Watershed plan for the RGW management unit along with an Integrated Watershed and Coastal Area Management project
Ministry of Land and Environment	<p>General oversight of nationally directed environmental programs, environmental management, the management of lands and mining/quarrying activities.</p> <p>Accomplished through policy development and monitoring</p>	<i>Same as mandate</i>	GOJ	No	<ul style="list-style-type: none"> <li>✍ Continued monitoring of all mining/quarrying activities</li> <li>✍ General coordination of recently established broad-based group to assist in advancing sustainability within the watershed</li> </ul>
Ministry of Tourism - TPDCo./River Rafting Authority	<p>To regulate and monitor rafting activities on the Rio Grande River</p> <p>At the operational level, the functions of TPDCo. and the Ministry of Tourism and Industry aid the work of the River Rafting Authority</p> <p>The River Rafting Authority has the mandate under the River Rafting Act of 1969 and River Rafting Regulations 1970, to regulate river rafting activities in Jamaica</p>	<ul style="list-style-type: none"> <li>✍ To develop river rafting within the limits of the resource and promote efficient operation</li> <li>✍ To encourage the maintenance of the highest standards of service by raftsmen and other persons who offer service to patrons of river rafting</li> <li>✍ To examine in consultation with such organizations and persons as it considers appropriate, problems affecting the operation of river rafting on the Rio Grande</li> <li>✍ To take all such lawful measures as it may consider likely to assist in carrying out most effectively, the purpose of the act.</li> </ul>	GOJ	No	The Rio Grande rafting trip is to be divested based on a 1998 EIA and Carrying Capacity study

### Local Agencies

Agency	Mandate	Primary Responsibilities/Activities in the RGW	Source of Funding	Funding Adequate	Future Plans/Developments
PIOJ	<ul style="list-style-type: none"> <li>⌘ Social and economic planning</li> <li>⌘ Policy advice to the government</li> </ul>	<ul style="list-style-type: none"> <li>⌘ To interface with donor and interim agencies in regards to funding of projects e.g. CIDA, USAID</li> </ul>	GOJ	No	Only as far as it relates to any projects that require PIOJ input
NWA	Responsible for the management of main roads and flood control	Maintenance of main roads and reconstruction of bridges	GOJ	No	Flood mitigation projects (river training)
<b>Educational Institutions</b>					
UWI- Environmental Management Unit, Department of Geography and Geology	<ul style="list-style-type: none"> <li>⌘ Biodiversity conservation including farmed areas</li> <li>⌘ Land and hazard management</li> <li>⌘ Community development and public education</li> <li>⌘ Small farmer economic projects and niche farming strategies</li> </ul>	<ul style="list-style-type: none"> <li>⌘ Working with the community (especially farmers) to facilitate improved land management practices as well as poverty reduction</li> <li>⌘ Increase conservation of biodiversity on farmed lands</li> </ul>	Donor funding	No	Currently seeking funding to develop appropriate training programs for different stakeholder groups, with different emphases
CASE	To support all watershed activities by allowing faculty members to participate in all activities	Monitoring/following the progress of intervention activities as part of the learning activities of the students	GOJ	No	To form youth organizations and offer satellite education classes
<b>NGO's</b>					
JCDT- (Green Jamaica)	To work effectively as one of the primary organizations in the co-management of the Blue and John Crow Mountains National Park (overlays a large part of RGW)	<ul style="list-style-type: none"> <li>⌘ To manage the Blue and John Crow Mountains through a co-management agreement with the Forestry Department relative to the park being a forestry reserve</li> <li>⌘ Conduct management activities which include conservation/protection e.g. reforestation, enforcement, education, recreation/tourism, sustainable livelihoods and research and monitoring</li> </ul>	Donor Funding	No	Continue to implement park management and buffer zone activities

Agency	Mandate	Primary Responsibilities/Activities in the RGW	Source of Funding	Funding Adequate	Future Plans/Developments
PEPA	To promote the wise use of natural resources and sustainable development within the parish	<ul style="list-style-type: none"> <li>⌘ Environmental education and advocacy</li> <li>⌘ Support of environmental community projects and farmers, fishermen etc.</li> </ul>	Donor Funding	No	<ul style="list-style-type: none"> <li>⌘ Planning and support of new/ongoing environmental projects.</li> <li>⌘ Establishment of coastal/marine protection</li> </ul>
Portland Parish Council <sup>?</sup>			Local Revenue via GOJ	No	<i>Based on R2RW activities passed on to the Parish Council</i>
Portland PDC	<ul style="list-style-type: none"> <li>⌘ To stimulate community participation to receive and disseminate information pertaining to projects</li> <li>⌘ To aid in decision making</li> </ul>	<i>Same as mandate</i>	GOJ	No	-
St. Margaret's Bay CDC	Community development within St. Margaret's Bay relative to any issues/problems that need to be addressed through studies and projects	In addition to the mandate, the CDC must attend meetings with the PDC to obtain feedback relative to any issues arising	Various projects e.g. Ridge to Reef	No	<ul style="list-style-type: none"> <li>- Numerous land and conservation projects along with horticulture to help alleviate erosion.</li> <li>- Employment initiatives for females in the community.</li> </ul>
Portland SDC	<ul style="list-style-type: none"> <li>⌘ Facilitate governance structures</li> <li>⌘ Sensitize and elevate the role and function of Ridge to Reef</li> <li>⌘ Assist the community in identifying and prioritizing projects</li> </ul>	<ul style="list-style-type: none"> <li>⌘ Formation of community organizations where they do not exist and strengthening those already in existence</li> <li>⌘ Facilitate representation of the community groups in the PDC</li> <li>⌘ Assist the community to identify development projects and prioritize these projects</li> <li>⌘ Development of education and governance programs.</li> </ul>	GOJ	No	<ul style="list-style-type: none"> <li>⌘ Working with communities towards development of community groups and strengthening of capacity</li> <li>⌘ Working with R2RW relative to man-made wetlands, improving potable water supply and reforestation projects to help in soil conservation</li> </ul>

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<sup>?</sup> PPC response based on commitment made to R2RW. It does not apply to general PPC mandate and function.

Agency	Mandate	Primary Responsibilities/Activities in the RGW	Source of Funding	Funding Adequate	Future Plans/Developments
<b>Development Projects</b>					
R2RW	<ul style="list-style-type: none"> <li>✍ Improved quality of key natural resources that are both environmentally and economically significant</li> <li>✍ Increased adoption of environmentally sound practices</li> </ul>	<ul style="list-style-type: none"> <li>✍ Development of the RGW management committee</li> <li>✍ Improved land management practices in the RGW (anchor project)</li> <li>✍ Production and marketing activities</li> <li>✍ Water and sanitation activities</li> <li>✍ Public awareness activities</li> </ul>	USAID/ GOJ	Yes	A strategic plan for the RGW with the implementation of an anchor project as outlined in the 4 <sup>th</sup> annual work plan.
CWIP2	Environmental management and Blue Flag coordination on several activities in the Port Antonio area	Solid waste management, sanitation and flood protection	USAID/ GOJ	Yes	Working with the Parish Council on sanitation, solid waste management and drains/gullies.
EAST	To assist the community of Portland to successfully benchmark for Green Globe21 including communities in the RGW	<ul style="list-style-type: none"> <li>✍ Environmental awareness in the community</li> <li>✍ Identify projects to improve economic status</li> <li>✍ Identify projects that are “environmentally friendly” related or in support of the hospitality sector</li> </ul>	USAID	Yes	Upon successful GG 21 benchmarking, efforts will be made to address GG 21 Certification for the area as a destination
<b>Mining Entities</b>					
Mining and Quarry Associations of Jamaica	Competitive development of mineral resources using best practices	Voluntary compliance of members with environmental code of practice	Member donation	No	Introduction of standard for the extraction of sediments from the river and the sea
Rupert Miller	To remove river shingles	<i>Same as mandate</i>	Personal	No	Plant more trees within the watershed boundary

Agency	Mandate	Primary Responsibilities/Activities in the RGW	Source of Funding	Funding Adequate	Future Plans/Developments
Agro Expo Farms – David Phillipson	<ul style="list-style-type: none"> <li>✍ Sculpt and maintain integrity of the riverbanks and river course</li> <li>✍ Remove excess material from banks and riverbed in prescribed areas</li> <li>✍ Remove sandbanks around free standing islands and keep both channels open around islands</li> </ul>	<i>Same as mandate</i>	Personal (via local sales of materials removed)	No	<ul style="list-style-type: none"> <li>✍ To develop an attraction on the island and mainland to include shops, a property tour</li> <li>✍ To move the operation's processing machinery to a site behind the hill available to the rafters</li> <li>✍ Construct a water purification (filtration) plant and establish selected pharmaceutical agriculture</li> </ul>

## **Collaborations Among Agencies**

A majority of the agencies/ organizations work/liaise with at least one other organization within the Rio Grande area.

### ***Agency/Organization with which Most Others Collaborate***

The Portland Parish Council and RADA appear to be the agencies that most the stakeholders collaborate with followed by NEPA, Ministry of Land and Environment and Forestry Department.

### ***Agency/Organization with Most Collaborations***

Ridge to Reef Watershed Project (R2RW) - works with 11 other organizations some of which are not included in the general stakeholder group within the Rio Grande area. e.g. JCDDT and JAS.

Forestry Department, WRA and the Ministry of Land and Environment follow working with between 6 to 7 other stakeholders.

### ***Agency/Organization that Most are willing to Work With***

All organizations are committed to the sustainable development of the Rio Grande area and will work with others is the general response given by most stakeholders.

Outside of this general comment, NEPA, CWIP, the Jamaica Bureau of Standards, SRC and the Police are mentioned as agencies, other agencies are prepared to work with.

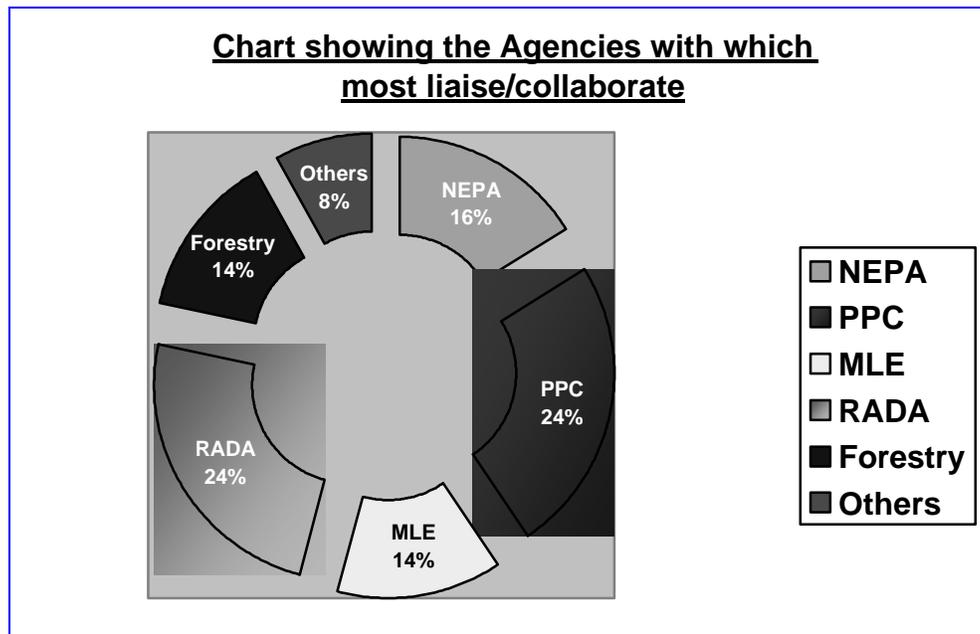
### ***Other Agencies/Organizations that Should be Involved***

UTECH, JAS, Ministry of Youth and Environment, the Environmental Foundation of Jamaica, Sports Development Foundation, all National service providers, Post Master General, NHT and the National Solid Waste Management Authority are some of the organizations not currently included as stakeholders in the Rio Grande area mentioned.

*Most stakeholder contacts made reference to agencies/organizations already involved in the Rio Grande area. This reflects an inadequate line of communication between the stakeholder groups i.e. agencies are not fully aware of the specific mandates and activities that other agencies are responsible for within the Rio Grande. This has therefore lead to the assumption that some organizations are absent or inactive.*

NB: Other liaisons involve community groups

**Figure 3 Agencies by their Levels of Collaboration**



### Obstacles

Not surprisingly, all stakeholder contacts refer to one or more obstacles that they face in fulfilling their responsibilities within the Rio Grande Area.

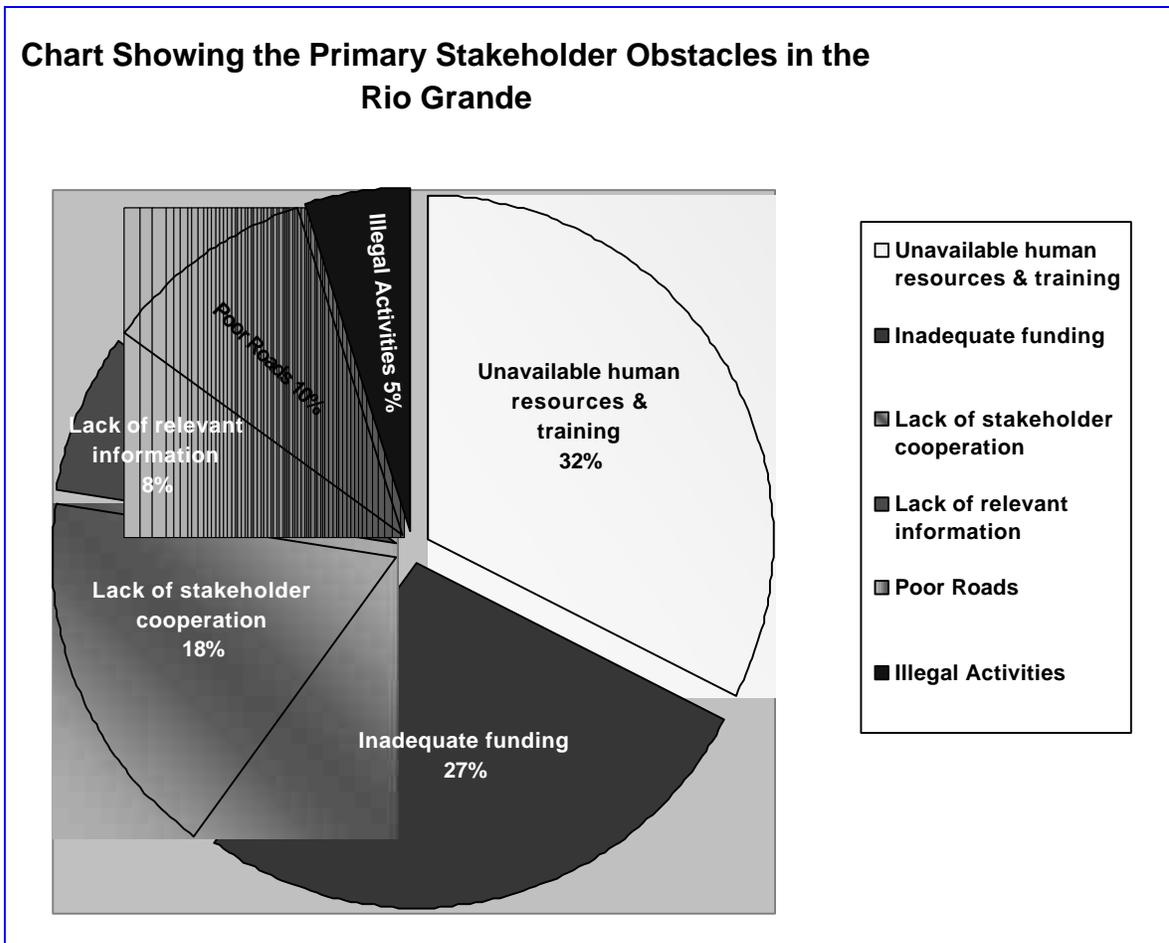
Some of the obstacles and concerns are agency specific and can be identified based on the number of stakeholders who share a general view.

The table below lists the obstacles agencies active in the Rio Grande encounter. The figure at the end of the obstacle represents the number of agencies listing the same problem. “**Others**” represents only one agency listing that obstacle.

Obstacles	
✍	Unavailable Human Resources and inadequate training (13)
✍	Inadequate Funding (12)
✍	Lack of necessary cooperation between some stakeholders (7)
✍	Poor road conditions (4)
✍	Lack of relevant information/data (3)
✍	Illegal activities in the Rio Grande e.g. sand mining, rafting, squatting (2)

Others	
✍	No governing policy for the management of rivers such as the Rio Grande and river rafting
✍	Conflicting legislation between agencies
✍	Pollution of rivers/streams and solid waste management
✍	Government reform process not at level to support certain stakeholder activities
✍	Inadequate hazard data to assist in mitigation measures
✍	Lengthy time periods for project approval causing citizens to loose interest
✍	General reluctance to accept new ideas among some groups
✍	Low level of education and environmentally income generating activities in the area for the surrounding community

**Figure 4 Obstacles Highlighted**



## Concerns

Outside of the obstacles mentioned, there are some primary concerns highlighted by a number of stakeholders. These are listed below:

<b>Concerns</b>
✍ Need for greater Sustainable land management practices (10) -deforestation with apparent soil erosion, frequency of landslides, land development in flood prone areas, hazard mitigation relative to flooding and the sustainability of livelihoods
✍ Water supply issues (2)
✍ Need for improvement in manpower resources for land husbandry practices (2)
✍ Conflict between some stakeholders e.g. sand mining and tourism (2)
✍ Flooding- especially as it relates to flood damage to roads and bridges (2)
✍ Sewage and solid waste disposal (2)
✍ Need for improvement in lines of communication between agencies (2)
<b>Others Individual Concerns</b>
✍ The need to recognize mining and quarrying as legal and beneficial activities
✍ Need for communities to realize the long-term benefits/advantages of projects
✍ Institutional incapability's which prohibit sufficient involvement in the Rio Grande
✍ Lack of sustainable livelihoods of the people living in the watershed
✍ Lack of relevant information to adequately address critical issues
✍ Lack of infrastructure
✍ Disregard of terms and conditions set out in mining and quarry licenses
✍ Poor Road conditions
✍ The lack of sustainability of projects initiated by any donor agencies
✍ Beach erosion
✍ Lack of employment for women in certain communities
✍ Lack of adequate social infrastructure e.g. health facilities, post office
✍ Illegal wildlife harvesting e.g. Giant Swallowtail butterfly
✍ Bird Shooting

***Views to address these concerns include:***

✍ Adoption of sustainable practices.

For example through:

- Increased agro forestry techniques with farmers, planting more trees
- Improved land use planning and management including donation, delineation of '**no development areas**'
- Enforcement of laws relative to squatting

✍ A lengthy Public Education Campaign.

✍ Public forums.

✍ Regular broad-based open community meetings.

✍ Development of a proper watershed policy to include rivers.

✍ Improved stakeholder collaboration.

✍ Fix the roads.

✍ Establishment of a structured mechanism at the local level to quickly and easily resolve disputes.

✍ A proper development proposal which outlines the clear role and function of each stakeholder in the RGW.

✍ Adequate funding.

✍ River training.

✍ Improved technical training in the areas lacking.

✍ Establishment of recycling projects.

**Gaps Identified by Agencies in Their Work**

A number of gaps in the RGW institutional framework have been identified by the relevant agencies/organizations. However, these are few and for the most part overlap with the obstacles and concerns already highlighted.

***Among the gaps listed are:***

✍ Inadequate communication and collaboration between stakeholder groups (specifically interagency).

✍ Lack of sharing information between agencies.

✍ Absence of an overall river management policy.

✍ Need to coordinate sanitation and solid waste solutions.

- ✍ Need to integrate the RGW in all the parish plans.
- ✍ Lack of project sustainability within the RGW.
- ✍ Agencies also saw some duplication in their operations. These include:
  - Projects over the years entering the RGW with similar objectives studying areas that have already been studied.
  - Policies are duplicated or overlap within many agencies.

## Analysis of Findings

### Collective Summary

The study identified strengths and weaknesses as well as duplication of roles and gaps among agencies operating in the Rio Grande.

The dialogue box below provides a summary of this.

Strengths	Weaknesses
<ul style="list-style-type: none"> <li>✍ Development projects are providing well needed funding in certain critical areas.</li> <li>✍ Multiple collaborations (where they exist) e.g. R2RW, appears to yield a greater coverage and management of certain issues within the Rio Grande area.</li> <li>✍ There are continual efforts to improve conditions throughout the watershed within some agencies.</li> <li>✍ Despite a conflict of interests, the miners within the area appear to provide a beneficial service through removal of excess sediments in certain sections along the Rio Grande.</li> <li>✍ Some are also involved in environmental rehabilitation activities e.g. Mr. Rupert Miller who has been planting trees in the area for a number of years.</li> </ul>	<ul style="list-style-type: none"> <li>✍ Funding and lack of adequate human resources is greatly hampering the activities of some stakeholders and their ability to operate efficiently to generate change and improvement in various aspects of the Rio Grande management and development as a resource.</li> <li>✍ Collaboration is lacking among agencies. Most are unaware of what others are doing or are not clear on other stakeholders involved in the watershed. Misperceptions therefore exist relative to the actual activities taking place in the RGW according to each agency.</li> <li>✍ Many national stakeholders lack reports on certain critical areas within the watershed. This is supposedly as a result of lack of adequate funding and human resources.</li> </ul>

Opportunities	Duplication of Roles and Gaps
<ul style="list-style-type: none"> <li>✍ There is room for the involvement of other agencies that are not currently apart of activities in the Rio Grande such as those mentioned and suggested by some stakeholders e.g. The SRC and Bureau of Standards (as pointed out by the SDC) along with JBDC and MIDA (as pointed out by the Ministry of Industry and Tourism).</li> <li>✍ Opportunities exist for further research and economic development of the natural and human resources within the watershed through these agencies</li> <li>✍ Greater collaboration is possible among agencies through the exchange and utilization of reports and other resources to increase efficiency and improve communication.</li> </ul>	<ul style="list-style-type: none"> <li>✍ There exists more of a complementary relationship between the agencies that were successfully contacted within the Rio Grande area relative to their roles, which leaves little room for duplication; where one agency falls short, this is addressed by another.</li> <li>✍ Based on the mandates presented by the agencies, the lack of duplication seems advantageous as it allows for a greater coverage of the various issues within the watershed, thereby limiting the functional burden of each individual stakeholder. (Taking into consideration the fact that some agencies are more equipped with certain facilities than others)</li> <li>✍ This in turn has reduced the existence of gaps among agencies to a large extent.</li> </ul>

### Summary of Resource Materials

Reports regarding the Rio Grande are limited and lacking in many agencies.

Those located were prepared mainly by or with the aid of the Development Projects and are available at these organizations in electronic form or as hardcopies. Some agencies were unable to locate their reports due to misplacement or improper filing.

The most recent report was written in 2003 with the oldest dating back to 1998. However, there are reports that were written before this that could not be found.

The general topics covered include waste and disaster management, water quality, sustainable development and stakeholder evaluation. (*See Appendix IV – Availability of Resource Material*)

### Conclusion

The recommendations provided below are formulated based on comments from the stakeholders or observations from the consultant. They reflect steps that can be taken in the future and presently to improve conditions in the Rio Grande.

### Recommendations

- ✍ Greater financial input from the GOJ is necessary– this has been voiced by many of the stakeholders and is the most obvious solution to many issues arising relative to stakeholder obstacles.
- ✍ Improved lines of communication between the various stakeholders in the Rio Grande must be enhanced/facilitated to strengthen the overall improvement and development of conditions in the watershed.
- ✍ It is evident that funding and the availability of adequately trained staff within agencies are aspects that need to be addressed given the broad-based impacts that it has on other areas.

- ✍ The magnitude of the conflict between the tourism and mining sector cannot be adequately captured within the framework of the assessment instrument. The large number of stakeholders interviewed who introduced their individual issues also detracts from this conflict.
- ✍ A separate mechanism should therefore be used to sufficiently address this matter.

## Scope of Work

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<b>RIDGE TO REEF WATERSHED PROJECT (R2RW)</b> <b>SCOPE OF WORK</b>
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<b>Title:</b>	Assessment of the Status, Roles, and Responsibilities of State Agencies, NGOs, CBOs and Projects involved on the Rio Grande Watershed
<b>Consultant:</b>	Jodi Johnson
<b>Supervisor:</b>	Technical: Hugh Graham, Watershed Management Specialist, Oral Rainford, Director, Mine Monitoring Unit, MLE, Trevor Spence, GNRS Contract: Mark Nolan, Chief of Party
<b>Duration:</b>	17 days October 15 – November 30, 2003

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### Background

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 United States Agency for International Development (USAID). Three distinct, but interrelated activities, associated with improving the management of Jamaica's watersheds, will be carried out to form a synergy of interventions contributing to the achievement of the USAID Strategic Objective 2 (SO2) – Improved quality of key natural resources in selected areas that are both environmentally and economically significant.

The Rio Grande Watershed in Portland is one of two targeted watershed areas in Jamaica for R2RW project activities. This river is world famous for its rafting activities. More recently sand quarrying has been taking place both upstream and down stream.

Concerns relating to the competing use of the Rio Grande have led to a recent visit of three senior Cabinet Ministers, and several technical personnel, and a follow-up meeting of State Agencies chaired by the Director of the Mine Monitoring Unit in the MLE. The meeting discussed a raft of issues, including soil erosion; flooding; deforestation; inappropriate mining, agricultural, construction and waste management practices; natural geological activities; conflict between tourism and mining activities; weather pattern and their impact on development activities; and general development challenges and the need for sustainable development within the watershed and particularly along the Rio Grande. This Group decided to meet again on October 28, 2003. R2RW was asked to undertake the cost of a short term consultant to collect, collate, analyze, and document the major development concerns of each agency invited to the October 1, 2003 meeting in respect to development activities within the Rio Grande Watershed, in order to see how existing activities could co-exist. This Report is to be completed and distributed before the next meeting. This activity falls under 5.3.3.1 of the R2RW Fourth Annual Work Plan to provide technical support to the Quarry Monitoring Committee in Portland.

## Purpose

The purpose of this Scope of Work (SOW) is to conduct a preliminary assessment to collect, collate, analyze, and document the major development concerns of each agency invited to the October 1, 2003 meeting in respect to development activities within the Rio Grande Watershed. This should highlight duplication of roles, gaps, as well as opportunities to collaborate and for the co-existence of activities.

## Activities

To achieve this goal, a Consultant will be retained to carry out the following activities:

1. Meet with Oral Rainford, Director of the Mine Monitoring Unit of MLE to confirm the process to be undertaken. A list of the organizations and agencies to be contacted are listed in Appendix 1 below;
2. Prepare an assessment instrument that will collect and facilitate the collation of development activities of agencies regarding their role, responsibilities, and status of involvement on the Rio Grande;
3. Conduct interviews with relevant State Agencies, NGOs, CBOs, and Projects actively involved in the Rio Grande Watershed. Appendix 2 contains a list of environmental projects in Portland;
4. Identify and review all previous studies done in the Rio Grande Watershed relevant to the Purpose of this Scope of Work. Prepare an annotated bibliography of studies reviewed;
5. Analyze reports and findings from interviews/meetings highlighting strengths, weaknesses, duplication of roles, gaps, as well as opportunities to collaborate and make recommendations;
6. Prepare a Summary Report on 1-5 above, and present draft to Meeting on October 28, 2003; and
7. Prepare Final Report that includes input on (6) above.

## Outputs

The principal output to be delivered at the completion of this consultancy is a **Report** containing but not limited to:

1. A review of all previous studies done in the Rio Grande Watershed relevant to the purpose of this Scope of Work.
2. Report on the outcome of meetings/interviews held with Agencies and Communities to establish their concerns/involvement
3. Recommendations for collaboration and co-existing of activities on the Rio Grande. This should include recommendations on the roles of the R2RW Project, the RGWMC, and the NIWMC in regards to addressing environmental issues in the Rio Grande Watershed.
4. Preparation of findings in a Draft Report
5. Presentation of Draft Report to a meeting of State Agencies, and

## 6. Preparation of a Final Report

### Personnel

R2RW nominates Ms. Jodi Johnson as the consultant for this SOW. Ms. Johnson has recently completed a postgraduate degree urban and rural natural resource management in the Faculty of Pure and Applied Sciences, UWI, Mona. Ms. Johnson has satisfactorily completed an assignment under the R2RW Project to update a database of Watershed Management Projects in Jamaica.

### Level of Effort & Proposed Schedule

This assignment is not to be considered a detailed research, but an attempt to document the current status of work being undertaken on the Rio Grande and recommendations for the co-existing of activities. 14 days are therefore considered adequate to undertake this exercise.

Activity	Level of Effort	Tentative Schedule
Conduct meeting/s	1 day	Oct 15
Prepare an assessment instrument	1 day	Oct 16-22
Conduct interviews with State Agencies and relevant NGOs and CBOs	5 days	Oct 16-23
Identify and review all previous studies done in the Rio Grande Watershed relevant to the Purpose of this Scope of Work	3 days	Oct 16-24
Analyze reports and findings from interviews/meetings	2 days	Oct 16-24
Prepare a Summary Report and present draft to Meeting on October 28, 2003	2 days	Oct 22-28
Prepare Final Report	2 days	Oct 31
Make presentation to Multi stakeholder workshop	1 day	Nov. 18
Total Level of Effort	17 days	Oct 15-Nov 30

## Stakeholder Questionnaire

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### Rio Grande, Portland

1. a) Name of organization/agency: \_\_\_\_\_

Please tick whether the organization/agency is:

National    Regional    Local    NGO    Development Project

b) Contact Information for the relevant location/s (address, telephone, fax, email etc.)

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

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

2. Briefly state the mandate of your organization/agency in relation to the Rio Grande Watershed (RGW).

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

3. a) What is the organization's/agencies main source of funding?

\_\_\_\_\_

b) Do you consider this funding adequate?

Yes    No

4. How many years has your organization/agency been involved in the RGW?

\_\_\_\_\_

5. Please state the organization's/agency's primary responsibilities/activities in the RGW.

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6. Does your organization/agency work/liase with any other organization within the RGW? *(if yes please specify)*

Yes  No

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7. a) What obstacles does your organization/agency face in fulfilling its responsibilities/activities within the RGW?

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b) Are there any 1) **gaps** and 2) **duplications** within the RGW institutional framework that you think need to be addressed? *(if yes please specify)*

Yes  No

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8. a) What are your organization's/agency's most pressing concerns in the RGW?

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b) In what ways could these concerns be addressed?

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9. a) What other organization(s)/agency(s) do you think should be involved in the sustainability of the RGW?

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b) What other organization(s)/agency(s) would you be willing to work with towards the sustainability of the RGW?

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10. Please state any future plans, developments or activities that your organization/agency has for the RGW.

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11. Please list any completed reports/current studies underway within your organization/agency regarding the RGW.

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## Rio Grande Stakeholder Contact Information

Agency/Organization	Contact	Address	Telephone	Fax
CASE	Capt. J.P Lamey	P.O BOX170 Port Antonio Portland	993-5436-8	993-5546
Environmental Management Unit – UWI	Professor Elizabeth Thomas Hope	Department of Geography and Geology UWI, Mona Kingston 5	702-4152	977-6029
Forestry Department	Danny Simpson	173 Constant Spring Road Kingston 8 Or 20 Folly Road Port Antonio Portland	924-2667/8  993-3843	924-2626  993-3731
JCDT	Suzanne Otuokon	29 Dumbarton Ave. Kingston 10	960-2828/9	960-2850
Mines and Geology Division	Clinton Thompson	Hope Gardens Kingston 6	927-1936-40	977-1204
Ministry of Industry and Tourism	Althea Johnson	64 Knutsford Blvd. Kingston 5	920-4926-30	920-4944
Ministry of Land and Environment	Oral Rainford	16a Half-Way-Tree Rd.	926-8715, 920-3273, 3406, 4081, 9117	929-7349
National Environment and Planning Agency (NEPA)	Thera Edwards/ Basil Forsythe	Portland Office 6 Smatt Road, Port Antonio Portland Or NEPA Kingston Office 10 Caledonia Avenue Kingston 5	715-6932-3  754-7550	  754-7594
NWA	Roger Smith	140 Maxfield Avenue Kingston 10	926-3210	926-2572

Agency/Organization	Contact	Address	Telephone	Fax
ODPEM	Paul Saunders Allison Gordon	12 Camp Road Kingston 4 odpem@cwjamaica.com	928-5111	928-5503
PIOJ	Hopeton Peterson	10 Grenada Way Kingston 5	906-4386/ 4483	
Coastal Water Improvement Project (CWIP)	Scott McCormick Louis Daley	5 Oxford Park Avenue Kingston 5	754-3910-2	906-2684
EAST	Hugh Cresser	c/o JHTA 2 Ardenne Road Kingston 10	926-3635/6	929-1054
ENACT	Maurice Swaby	c/o NEPA 10 Caledonia Ave Kingston 5	754-7556	
PEPA	Harvey Webb	6 Allan Avenue Port Antonio Portland	993-9632	715-3705
Portland Parish Council	Faye Newville	1 Gideon Avenue Port Antonio, P.O Portland	993-2665, 993-2765	993-3188
Portland Parish Development Committee	Sybil Rendall	Shop # 29 Village of St. George 2-4 Port George Street Port Antonio Portland	715-5465	715-5466
Ridge to Reef Watershed Project (R2RW)	Hugh Graham, Trevor Spence	5 Oxford Park Avenue Kingston 5  Or NEPA Office 6 Smatt Road Port Antonio Portland	754-7598, 754-3910-2	906-2684
Rural Agricultural Development Authority (RADA)	FA White	Parish Office Folly Road Port Antonio Portland  Or RADA – Hope Gardens Kingston 6	993-2763, 993-2687  977-1158-62	993-3751  927-1592, 970-4660

<b>Agency/Organization</b>	<b>Contact</b>	<b>Address</b>	<b>Telephone</b>	<b>Fax</b>
SDC	Ralph Falloon	5 Smatt Road Port Antonio Portland	993-2644	-
St. Margaret's Bay CDC	Mrs. Vivene Sharington Bailey	St. Margaret's Bay All Age School  St. Margaret's Bay Community  Portland	913-3155	-
<b>Quarry Operators</b>				
Agro Expo Farms	David Phillipson, Michael Mangaroo	11 Leighton Road Kingston 5 Or Burlington Estate St. Margaret's Bay Portland	926-8719 381-2116 993-5226 993-5594	926-8733
Mining and Quarrying Association of Jamaica	Anthony Morgan	21 Norbrook Drive P.O Box 1731 Kingston 8	925-4473	925-4473
Rupert Miller	Rupert Miller	Folly Road Port Antonio	993-2148 993-2824 361-1728	715-6112

## Availability of Resource Material

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✍ Robinson, Rowe, Khan, 2003. **Preliminary Assessment of Beach Erosion at St. Margaret's Bay, Portland, Jamaica, Final Report**

This document was prepared in response to a request from the Ridge to Reef Watershed Project (R2RW) to investigate reports from some citizens of St. Margaret's Bay, Portland who were concerned at the extent of beach erosion in the eastern part of the township, which was leading to damage and destruction to buildings.

The primary objective of the investigation was to establish whether erosion was significant, to determine the causes of the erosion and to develop an action plan for addressing the problem.

It was concluded from the investigations that significant erosion had indeed occurred along this beach, affecting buildings near the shoreline.

Contains aerial photographs of the area, tide, wind and wave data, plates, satellite imagery, plates and figures

**Keywords:** St. Margaret's Bay, beach erosion, sand mining

**Available at:** the Ridge to Reef Watershed Project

✍ Robinson, Rowe, Khan, 2003. **Beach Erosion at St. Margaret's Bay, Portland, Jamaica, Report to the Citizens**

This document served as the follow-up to the preliminary report submitted earlier in the year and outlines the results of a scientific study of the St. Margaret's Bay beach erosion to find out the severity of the problem, the reason the beach was eroding and to work out possible ways of dealing with the erosions. The study also looked at similar erosion taking place at Orange Bay and represents the findings of the study based on meetings held with the residents.

Contains a map and aerial photographs of the area, satellite imagery, plates and figures

**Keywords:** St. Margaret's Bay, beach erosion, sand mining

**Available at:** the Ridge to Reef Watershed Project

✍ Kerr, Carman and Cunningham, 2002. **Rapid Rural Appraisal of the Rio Grande Watershed**

The RRA was conceptualized to serve as a baseline document and represents an integrated profile of the Rio Grande Watershed Management Unit documenting natural resources as well as environmental, social and economic features. It also identifies ecological and socio-economic problems and presents critical assessments of the current situation in the watershed. The study represents one of the initial activities of the Ridge to Reef Watershed Project in the Rio Grande Watershed.

Contains: maps, graphs, summary tables/matrices, plates

**Keywords:** Rio Grande Watershed, human settlement, watershed management

**Available at:** the Ridge to Reef Watershed Project

✍ R2RW, 2002. Draft Rio Grande Watershed Stakeholder Workshop Report

The details of this report stem from a chronology of activities that resulted in the identification of eight strategic directions with illustrative examples of corresponding action plans to improve environmental management. The stakeholder workshop represented urban and rural communities, private sector interests, and public sector agencies covering the Rio Grande Watershed area.

Contains: diagrams, summary tables/matrices

**Keywords:** Rio Grande Watershed, stakeholder assessment, watershed and environmental management

**Available at:** the Ridge to Reef Watershed Project

✍ CWIP, 2001. Field Assessment of Selected Communities in and Around Port Antonio

The central focus for this report was to utilize a Rural Rapid Appraisal approach to assess Port Antonio and its environs with a primary goal to explore:

- ✍ Community histories
- ✍ Existence of community groups
- ✍ Community leadership
- ✍ Community resources
- ✍ Agency linkages with communities, both government and non-government, and their specific involvement in community awareness of general and environmental issues affecting them

Contains: diagrams, tables

**Keywords:** Port Antonio, community assessment

**Available at:**

✍ CWIP, 2001. Port Antonio Stakeholder Workshop Report

The objective of the report was to identify the environmental challenges and corresponding opportunities for programming interventions within the Port Antonio Area. It was designed to also formulate realistic priority environmental action plans and it summarizes the participatory methodologies utilized in conducting the planning exercises and the subsequent findings emerging from the two-day activity.

In addition to identifying the eight environmental strategic directions, the workshop established illustrative priority actions, key activities, and stakeholder roles and responsibilities for each.

Contains: diagrams, summary tables/matrices

**Keywords:** Port Antonio, stakeholder assessment, environmental management

**Available at:** the CWIP Project

- ✍ CWIP, 2001. Guidelines for Implementing Coastal Water Quality Monitoring Program to Port Antonio

This report was intended, through facilitated discussions with a Task Force of the Port Antonio Parish Development Committee to explore, develop, and agree on strategies for CWIP's entry into the Port Antonio area. Some of these discussions have focused on sensitizing the participants to the concept and rationale of a water quality monitoring program, to obtain in a preliminary manner, an idea of the community's interests and needs.

Contains: maps, diagrams, tables

**Keywords:** Port Antonio, coastal water management

**Available at:** the CWIP Project

- ✍ CWIP, 2002. Sampling Guidelines, Protocols, and Procedures for the Port Antonio Water Quality Monitoring Program

The document is primarily concerned with the various methods that can be employed relative to water quality monitoring as demonstrated through CASE.

Contains: tables

**Keywords:** Port Antonio, water quality monitoring

**Available at:** the CWIP Project

- ✍ CWIP, 2002. Waste Generation Analysis for Port Antonio

This analysis report is based on the development of a solid waste management project for the area of Port Antonio through CWIP in collaboration with UNDP/LIFE.

The purpose of the project was to provide an effective garbage management system for the town of Port Antonio and its environs. To effectively implement the project, information was required to guide the stakeholder planning process particularly in terms of the types and quantity of waste and appropriate collection and containment strategies. The report outlines the findings of a consultancy re the waste generation analysis for Port Antonio.

Contains: tables, plates, and diagrams

**Keywords:** Port Antonio, waste management

**Available at:** the CWIP Project

- ✍ CWIP, 2002. Port Antonio Coastal Water Quality Monitoring Program Sustainability Plan

The document outlines the primary goals of the sustainability plan which included to-

- ✍ Establish baseline data for agreed upon and selected water quality parameters;
- ✍ Identify the key sources of Port Antonio's coastal water pollution;
- ✍ Determine the nature and extent of these impacts on coastal water quality;
- ✍ Assist in the design and implementation of critical intervention strategies to minimize the negative effects of this pollution;
- ✍ Share water quality data with stakeholders in a community outreach program and assist in the education of private citizens, commercial and agricultural interests as well as industrial pursuits to minimize the negative effects of their combined activities on the coastal zone;
- ✍ Compile a standardized, regularly updated information source, which is readily available for instruction, comparison, and analysis policy development to all interested parties.

The parameters measured were salinity, conductivity, Total Suspended Solids, Total Oxidized Nitrogen (Toxin), Ammonium (NH<sub>4</sub><sup>+</sup>), Soluble Reactive Phosphorus (SRP), Fecal Coli forms

Contains: tables and diagrams

**Keywords:** Port Antonio, water quality monitoring

**Available at:** the CWIP Project

- ✍ Environmental Science and Technology Limited (Estech), 1998. Environmental Impact Assessment and Carrying Capacity Study on River Rafting in the Lower Rio Grande Valley.

This EIA report was based on a study commissioned by the Ministry of Tourism regarding mining activities at Burlington and Berry dale in the Lower Rio Grande Valley. The findings highlighted certain hazards as it related to mining and the impact it had on the overall tourism sector (especially rafters) within the area.

Contains: maps, diagrams, plates and aerial photos

**Keywords:** Rio Grande Valley, river rafting, environmental management

**Available at:** the Ministry of Tourism, NEPA, and MLE

- ✍ ODPEM, 2000. Vulnerability Reduction Programme for the Rio Grande Valley.

The document was implemented through the Mitigation, Planning and Research Division of the ODPEM and covers the establishment and output of various aspects of the Vulnerability Reduction Programme which was implemented as a result of the vulnerability to various hazards which exist within the Rio Grande valley.

**Keywords:** Rio Grande Valley, hazard management

**Available at:** ODPEM

- ✍ Massa, Eaton, Spence (via collaboration with the PPC and PDC), 2000. The Parish of Portland: A Sustainable Development Profile.

This is a comprehensive document outlining the concept of sustainable development as it relates to the parish of Portland and highlights background data and issues relating to governance, history and culture, the environment and human impacts, social structure and economic conditions within the parish.

It fulfils two key goals concerning *an expansion of people's access to information on the parish to enable informed local planning and development decision making along with the establishment of a knowledge management framework for the parish within which information can be compiled and added on an on-going basis.*

Contains: maps, diagrams, plates and aerial photo, websites, tables, figures

**Keywords:** Portland, sustainable development

**Available at:** ENACT, the Ridge to Reef Watershed Project

**Further Reports Available At:**

- ✍ JCDT:
  - 1) A Community Assessment Report
  - 2) Various Community Education Project Reports
  
- ✍ UWI:
  - 1) *Final Report of the First Phase of the People, Land Management and Environmental Change Project (PLEC)*
  - 2) E. Thomas-Hope, B. Spence (2000). *Household Structure, agro-diversity and agro-biodiversity on small farms in the Rio Grande Valley, Jamaica. PLEC News and Views, No. 15*
  - 3) E. Thomas-Hope, B. Spence (2002). *Promoting agro-biodiversity under difficulties: The Jamaica PLEC Experience. PLEC News and Views, No. 19*
  
- ✍ MLE: Conflict Between Mining and the Tourism/ Environmental Lobby on the Rio Grande, Portland
  
- ✍ Forestry: The FAO/Netherlands Government Agro-forestry Project (1994-1998)
  
- ✍ NWA: *North Coast Highway Segment 3- Feasibility Study- Rio Grande Bridge*



