

# Policy Brief

## HIGHLIGHTS

### 1.1

#### **ECOSYSTEM SERVICES**

Cockpit Country provides valuable services including, plants, animals, cultural artifacts, water supply and natural products.

### 1.2

#### **BAUXITE MINING**

The Jamaican Government and Conservation Groups have been debating the best use of Cockpit Country. To mine or not to mine has to be based on proper information.

### 1.3

#### **NATURAL RESOURCE VALUATION**

The economic value of non-market resources such as ecosystem services and environmental quality can be used to make decisions about managing natural areas like Cockpit Country.

### 1.4

#### **STUDY**

Over 2,000 persons were randomly surveyed across the island of Jamaica. A Contingent Valuation survey was used to collect data to estimate the economic value preserving the ecosystem services of Cockpit Country.

### 1.5

#### **VALUE OF COCKPIT COUNTRY**

This study shows that the value of maintaining the Cockpit Country in its current state is approximately Jamaican \$2.6 billion per year (US \$29.8 million). The Jamaican population has a high consumer surplus associated with preventing a decline in the environmental quality of Cockpit Country.

## Ecosystem Service Valuation of Cockpit Country

### Introduction

Cockpit Country is one of two large remaining areas of primary forest in Jamaica and is a last refuge for many of Jamaica's endemic plants and animals. It is an island-within-an-island, surrounded by a sea of agriculture and rural communities. Cockpit Country provides essential ecosystem services including water filtration, carbon storage, wildlife habitat, recreational opportunities and scenic beauty. Ecosystem services are the direct or indirect contributions that ecosystems make to human well-being.

Jamaica's Cockpit Country is recognized nationally and internationally for its unique biodiversity, its cultural heritage, and for the ecosystem services it provides to central-west Jamaica. This ecosystem is under imminent threat from bauxite mining and limestone quarrying. In the past, the Government of Jamaica (GoJ) has not considered indirect costs such as loss of biodiversity, risks to

ecosystem services and costs to communities, in its decision process, which emphasizes short-term, foreign exchange benefits.

One way to improve decision-making is to develop an economic case for the conservation of Cockpit Country. Part of this process is the use of non market valuation techniques to estimate values for ecosystem services for locations such as Cockpit Country. Non-market valuation techniques are extensively applied over a wide range of goods and services and their use as a tool for natural resource management policy is now fairly common across many countries.

### Study Objectives

This study aims to contribute to, and inform the policy and decision making process in Jamaica for natural resource management.

The purpose of this ecosystem service valuation study was to measure Cockpit Country Ecosystem service values using a recognized non-market valuation technique. The estimates of value



can then be used to guide decisions as to the optimal use of the area. This report used a recognized stated preference valuation survey method, the Contingent Valuation Method (CVM), to estimate the economic benefit or consumer surplus: that is, the value of maintaining the Cockpit Country in its current state.

### Study Findings

We used a Contingent Valuation survey to collect original data in order to estimate aesthetic and non-use values of our study area. We conducted an in-person household survey of the general population of Jamaica between the months of October and December 2011.

Econometric estimation of the household survey data allowed for the estimation of per person willingness to pay for preserving the environmental condition of Cockpit Country. Based on the estimated per person willingness to pay values we can then derive an aggregate total value for the population of Jamaica who are of voting age. We assume that this corresponds to the current voters list that has 1,612,065 eligible voters. Aggregate value was obtained by multiplying this number by the estimated per person economic values.

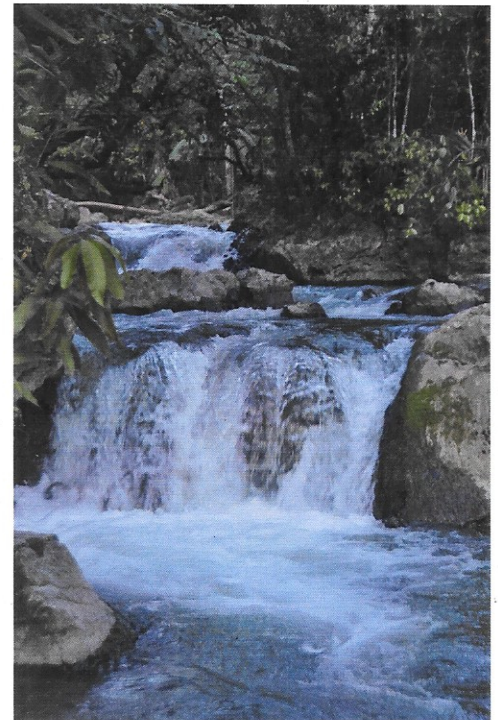
Based on our analysis we estimated values for preserving Cockpit Country at a minimum of J\$1,600 per person per year (maximum \$2,500). Using the minimum per person value, the aggregated national value of maintaining the Cockpit Country in its current state is approximately **J\$2.6 billion** per annum (**US \$29.8 million**). This value would accrue in perpetuity if the ecosystem services of Cockpit Country were preserved.

### Conclusions

It is important to note that the island-wide administration of this valuation survey was being done for the **very first time** in Jamaica.

We believe that based on the policy context (bauxite mining versus forest conservation) the use of a non-market approach shows that the long term benefits of maintaining ecosystem services are greater than the short term economic gains of extracting a non-renewable mineral resource.

This study demonstrates an approach that could be used as part of the policy framework for resource protection and sustainable management of important ecosystems and natural resources in a developing country.



#### STUDY TEAM

**Peter E.T. Edwards**  
Lead Investigator

**Michael Schwartz**  
Project Manager

**Contributors**  
Owen Evelyn and Susan Koenig

**Funding**  
This study was conducted with the aid of a grant from the John D. and Catherine T. MacArthur Foundation.

**Contact Information**  
Windsor Research Centre,  
Sherwood Content PO

windsor@cwjamaica.com