



Sustainable financing for ocean and coastal management in Jamaica: The potential for revenues from tourist user fees

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ABSTRACT

This study explores the feasibility of implementing a sustainable funding mechanism for ocean and coastal management in Jamaica. Results show that tourists are more willing to pay for an “environmental tax” than a general “tourism development tax”. The study found that an environmental surcharge of US\$2 per person could generate \$3.4M per year for management with 0.2% rate of decline in tourist visitation. Negative impacts from the imposition of additional taxes on annual tourist visitation rates could be minimised by providing information on how the revenues from the tax will be allocated for management activities.

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1. Introduction

Coral reef ecosystems hug tropical coastlines and offer protection from the pounding of waves and scouring currents on a daily basis but more importantly, protect against the worst ravages of storms and hurricanes. They are able to grow in high-energy environments and reef growth gradually builds up huge limestone structures, which buffer and defend the coastline. In addition reefs also provide the major source of sand, which builds land and replenishes beaches [1]. Coral reef ecosystems are important because they provide people with a source of livelihood, food, recreation, and medicinal compounds and protect the land on which they live. For a small island developing state (SIDS) like Jamaica, the coastal tourism industry is an important economic activity. The Jamaican tourism industry accounts for 32% of total employment and 36% of the country's GDP [2] and is largely based on the sun, sea and sand, the last two of these attributes being dependent on healthy coral reef ecosystems. Coral reefs and their associated ecosystems are however threatened by natural and anthropogenic impacts such as; coastal pollution, rapid coastal development, overfishing and global warming. Mitigating the anthropogenic threats to these natural resources requires management and this in turn is dependent on funding which is often limited or absent in island nations such as Jamaica.

Given the limitations on financing for coastal protection and resource management one can consider the use of alternative mechanisms to generate funding. Given the importance of the ocean and coastal ecosystems to the tourism industry, policy makers can consider using economic instruments such as taxes on resource users such as hotels or tourists to generate the necessary funding. In order to justify imposing additional costs on key stakeholders it is critical that the benefits associated with the resource are understood. These benefits include market and non-market benefits.

The use of non-market valuation techniques as a tool for natural resource management policy is now fairly common across several countries. In many instances these studies are used to support decisions on the implementation of user fees for national parks and marine protected areas [3]. Common to most of these studies is the estimation of consumer surplus or welfare often expressed as willingness to pay (WTP). These studies typically estimate the recreational values associated with beaches, scuba diving and sport fishing. These coral reef studies are typically focussed on one activity for example scuba diving [4,5]. There are very few these studies that attempt to look at contingent market participant values for ecosystem services as a whole.

This study aims to add to the existing literature by testing the impact of using different of payment vehicles on the contingent behaviour (CB) of tourists visiting Jamaica, and also examines the effect of the provision of information on respondents' true WTP [6]. The type of institutional mechanism that ensures the protection (preservation) of the given non-market good may also be important to the respondent's decision framework. This paper also provides a test of the potential effects of different types of

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institutional frameworks on respondents' consumer demand. This study models CB for tourists that receive two slightly different scenarios and formulates hypotheses about how consumer demand may differ across individuals. Based on the results the feasibility of generating revenues for the sustainable financing of ocean and coastal management in Jamaica is discussed.

1.1. Background

Estimating economic values for environmental amenities such as national parks and protected areas has a role to play in conservation [7]. Environmental valuation is important for highlighting valuable resources for protection and identifying ways of capturing the value of national park benefits that visitors receive, for example through user fees, permits and donations [8,9]. The use of appropriate valuation techniques are also important for providing estimates that help to increase management efficiency; and improves the accuracy of damage assessments [10]. Additionally the valuation of recreation services from beaches and coral reefs located within the boundaries of protected areas can also contribute to the formulation of sustainable tourism and natural resource management policy particularly in SIDS with economies dependent on fragile coastal ecosystems [9,11,12].

The body of literature on coral reef ecosystem resource valuation is small when compared to other research areas but in recent years there has been an increase in the attention being placed on this issue. For example studies in the Philippines and the Seychelles [4,12] examined scuba divers WTP for protecting marine parks. Similar studies in Bonaire have also focused on values elicited from divers [8,13]. These studies however were either site specific (marine parks) and/or activity specific (scuba diving). Few valuation studies have examined multi-use areas that support a wide range of recreational and non recreational uses of the natural resources. This is understandable because of the difficulties associated with "valuing" the tourism product or "valuing" a vacation experience.

In Jamaica, there was a World Bank study that looked at the values associated with the coral reef ecosystem in Montego Bay. This study primarily examined the valuation of Montego Bay's coral reefs as a biotechnology resource [14]. As part of the larger study, a semi random intercept survey of visitors and residents was conducted, welfare values were assessed for the reefs in the Montego Bay Marine Park. The main focus of the study was to provide a valuation of biodiversity with respect to the potential for bio-prospecting of coral reef resources. This study focuses on recreational uses of the resource and will therefore attempt to capture the wide range of resource users such as; beach goers, snorkelers, glass bottom boaters and SCUBA divers. This study therefore examines the coastal ecosystem benefits for the entire island of Jamaica.

1.2. Coral reef ecosystems and tourism

Jamaica is primarily a "Sun, Sea and Sand" destination and therefore the primary recreational activities of visitors include sun and sea bathing on the beaches. The recreational users of the coastal resources are primarily: beach goers, snorkelers, scuba divers, and glass bottom boaters [15]. The majority of the tourist towns are located primarily along the north coast of the island and supports several hotels and other attractions on the coast. Over the last three years, the number of hotel rooms in Jamaica has been increasing at a rapid rate, with the room stock primarily associated with large and more luxurious developments along the island's North Coast. This is expected to continue and to increase at an average of 4600 rooms per year, bringing Jamaica's room stock to 75,000 by 2015 [16].

It is important to understand that Jamaica's tourism product over the last 15–20 years has largely been driven by the "all inclusive" vacation concept [17,18]. An "all inclusive vacation" can be defined as a total service package where the visitor pays one fee that covers accommodation, meals, drinks and recreational activities at a hotel or resort. Quite often the visitor is often not encouraged to leave the resort and thus spends their entire vacation within the boundaries of the property. One could say therefore that the tourism industry actually markets the "resort" as the destination instead of the total island. The typical tourist therefore spends much of their time sunbathing and engaging in watersports related activities. The island is primarily marketed as a "couples" or romantic destination and hotels typically offer wedding, honeymoon and anniversary packages. There are however a few large hotel chains that cater to family oriented vacationers. The large resorts, hotels as well as coastal attractions such as dolphinarium and water parks in generally maintain the aesthetics of their beaches and surroundings. However the overall protection and management of the coastal resources are not the tourism industry's primary concern.

Montego Bay, Ocho Rios and Negril are three of the islands premier tourist destinations and are all located in the north and northwestern coast of the island of Jamaica (Fig. 1). The coastal waters surrounding these towns are designated as protected areas are co-managed by NGO's and the National Environment and Planning Agency (NEPA). It is important to note that coastal tourism towns and cities have similar characteristics. They are bounded by relatively large coastal areas used by multiple groups, including fishers, divers, snorkelers, swimmers, and other recreational users. They are all impacted by a wide range of anthropogenic issues, including sewage, solid waste disposal and deforestation, as well as activities associated with its direct use, such as hotel development, watersports activities and fishing. Hotels and other attractions may sometimes be situated outside of the boundaries of the marine protected areas but many of their watersports related activities such as snorkelling and diving occur within the boundaries of the relevant parks and protected areas.

In Jamaica there are two officially designated marine parks, these are the Montego Bay Marine Park (MBMP) and the Negril Marine Park. These parks are co-managed by central government along with NGO's namely the Montego Bay Marine Park Trust (MBMPT) and Negril Coral Reef Preservation Society (NCRPS), respectively. The Ocho Rios Marine Park has not been officially designated and so the environmental advocacy and "on the ground" activities are undertaken primarily by two NGO's, Friends of the Sea (Ocho Rios) and the Northern Jamaica Conservation Association (NJCA). It is important to note that while NGO's have direct responsibility for the areas within their respective park boundaries the National Environment and Planning Agency (NEPA) has authority for all coastal resources around the island.

1.3. National policy for resource management

The Government's primary natural resource management institution is the National Environment and Planning Agency. NEPA's coastal zone management activities extend along the entire Jamaican coastline and are directly relevant to the major tourism towns and cities located on the north coast of the island. Going from West to East these include the towns of Negril, Montego Bay, Falmouth, Runaway Bay, Ocho Rios and Port Antonio (Fig. 1). In many instances NGO's such as MBMPT and NCRPS work in tandem with NEPA to carry out monitoring and management activities.

The Forestry Department, Fisheries Division, National Environment and Planning Agency, and Jamaica National Heritage Trust

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