

## Livelihoods Analysis of Water Taxi Operators in the Grenadine Islands of St. Vincent and Grenada

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### ABSTRACT

This article summarizes the results of a livelihoods analysis of the water taxi operators in the Grenadine Islands of Grenada and St. Vincent and the Grenadines. The natural resources of the area, including the many beaches, reefs, and cays, especially the Tobago Cays Marine Park (TCMP) are the resource base for their operation. These resources form part of their natural assets according to the definition by the Department for International Development (DFID). Given the importance of the natural resources to the water taxi operators, their potential for environmental stewardship may be realized through the monitoring of the same yachts that they supply. They can ensure, possibly through co-management of the Park, that their natural assets are not undermined by a sector that is poorly regulated. The other livelihood assets are classified into the physical, social, human and financial. The vulnerability context and the livelihood strategies were also assessed. The results show that water taxi operators depend on fishing to supplement their livelihoods, both for subsistence and sale to yachts, especially the latter.

KEY WORDS: Grenadines, livelihoods analysis, strategies, vulnerability, water taxis

### Analisis de Subsistencia de Operadores de Taxis Acuáticos en las Islas Grenadinas de San Vicente y Grenada

Este artículo resume los resultados de un análisis de subsistencia de los operadores de taxis acuáticos en las Islas Grenadinas de Grenada y San Vicente. Los recursos naturales del área, incluyendo varias playas, arrecifes y cayos, especialmente el Parque Marino Cayo Tobago son recursos base para sus operaciones. Estos recursos forman parte de sus bienes naturales en concordancia con la definición brindada por el Departamento para el Desarrollo Internacional (DFID). Dada la importancia de los recursos naturales para los operadores de taxis, su potencial para gerencia ambiental podría realizarse a través de monitoreo de los mismos yates que se sirven de ellos. Podrían asegurar, posiblemente por medio de un proceso de co-manejo del parque, que sus bienes naturales no sean socavados por un sector pobremente regulado. Los otros bienes utilizados para su subsistencia están clasificados dentro de una esfera física, social, humana y financiero. El contexto de vulnerabilidad y las estrategias de subsistencia también fueron evaluados. Los resultados demuestran que los operadores de taxis acuáticos dependen de la pesca como suplemento para subsistir, tanto para la subsistencia misma como producto de venta a los yates, especialmente esta última.

PALABRAS CLAVES: Análisis de subsistencia, estrategias, Grenadinas, vulnerabilidad, taxis acuáticos

### INTRODUCTION

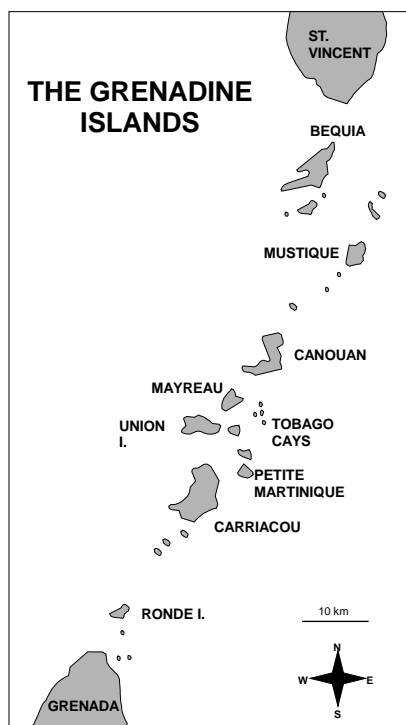
The Grenadine Islands are located between the two mainland states of Grenada and St. Vincent (Figure 1). Their sustainable development has become an important theme in the Grenadines and is being promoted through the establishment of the Sustainable Grenadines Project in 2002. The project recognizes that the people of the Grenadines are dependent on their marine and coastal environment and hence an integrated approach to its sustainable development is paramount.

The Sustainable Grenadines project provides the basis for the Water Taxi Project considering that the water taxi operators (W Tops) are one of the primary users of the marine environment and are an important component of the socio-economic well being of the people of the islands. The W Tops provide a valuable service by transporting visitors, locals and goods throughout the Grenadines. They are also potential stewards for environmental protection. For these reasons, they were 'identified as a priority during

participatory strategic planning in Phase 1 of the Sustainable Grenadines Project' (CERMES 2004).

The Water Taxi Project (WTP) seeks to assist these 'small-scale operators who are struggling to make a living' (CEC 2005). 'They operate small, open, outboard-powered boats. They are currently largely unregulated. The boats are often poorly equipped. The operators are seldom trained in the skills that are required to operate a passenger craft or a small business and many lack the necessary capacity to provide safe and efficient service' (CEC 2005).

The W Tops have taken a step in moving toward sustainability in that they have come together to form associations. These associations have undertaken a visioning exercise to determine where they want to go in the future (CERMES 2004). This is an initial step in the direction of sustainable livelihoods according to the Department for International Development (DFID) since institutional support is important to sustainability (DFID 1999).



**Figure 1.** Location of the Grenadine Islands

The WTP is being pursued under four major objectives with associated activities as outlined within its Planning-Inception Report (CEC 2005). These objectives include environmental education, customer service training, safety at sea and organisational strengthening. Education plays a vital role in the conservation of the natural resources and building the capacity of the WTops as denoted by the objectives of the WTP.

There has been no research on the livelihood assets, strategies or the vulnerability of the WTops in the Grenadines. Planning for them will require a livelihoods analysis to determine the assets and vulnerabilities of this group as well as the requirements for enhancement. This will inform the development of appropriate inputs that may enhance their livelihoods and also serve as a baseline for assessing changes due to the inputs. The project will focus on the livelihood assets and strategies as well as the evident and perceived stresses and shocks (vulnerability) that have affected or are likely to affect the WTops. The Sustainable Livelihoods Approach (SLA) (DFID 1999) will be used and is discussed in the literature review. However, the entire SLA process will not be undertaken in this project. The vulnerability and livelihood assets and strategies of the sustainable livelihoods framework will be utilised in assessing the WTops. Their livelihoods strategies will also be described and categorized depending on the complexity of the operators.

The aim of this project is to carry out a livelihoods analysis of the WTops in the Grenadine Islands. The

specific objectives that will be pursued are:

- i) To estimate of the number of WTops in the Grenadines,
- ii) To determine the vulnerability context of the WTops
- iii) To determine the livelihood assets of the WTops, and
- iv) To determine the livelihood strategies of the WTops.

## METHODOLOGY

The study proceeded in two stages. The first was a preliminary survey used to establish an inventory of the number of WTops throughout the Grenadine Islands. This was done by visiting each of the islands, recording all the WTops encountered until no more new operators were found. The data was entered and analysed using the Statistical Package for Social Sciences (SPSS). This information was used to produce a preliminary report on the number of operators along with general information on their operation. The preliminary work was conducted in conjunction with a separate study of the environmental practices of WTops.

The second stage was a qualitative in-depth survey that assessed the various livelihood assets and strategies and the vulnerability context of WTops. Nineteen persons from across the Grenadine Islands were interviewed. Four came from Bequia, five each from Union Island and Carriacou, three from Mayreau, and two from Petite Martinique. The only operator from Canouan was unavailable for an interview. These operators were selected based on whom operators and other community members thought were knowledgeable of the water taxi business and those who were willing to share their experiences. Respondents were also identified based on the years of experience in water taxiing as indicated in the preliminary survey.

A major limitation was that the time-frame limited the study to the analysis of the livelihood assets, strategies and the vulnerability context of the WTops as opposed to the full application of the SLA. The transforming structures and processes which relate to issues of governance were not assessed. These, however, may influence the livelihood outcomes of the operators which include income, reduction of vulnerability and more sustainable use of the natural resource base. The time-frame also limited the number of WTops interviewed for the in-depth survey which may have led to a less representative depiction of the livelihoods of the operators given their diversity.

## RESULTS AND DISCUSSION

### Initial Survey of Water Taxi Operators

The group is mostly male with an initial survey revealing that from a total of 100 water taxi boat owners, only three were women. These three women assisted in the operation of the water taxi along with their male partners.

The respondents in this survey ranged in age from 21 to 45 with experience in water taxiing ranging from one year to more than 30 years. WTops in the Grenadines have various motivations for becoming such. They posited reasons such as mere coincidence and the need to survive. Many of them, having been raised around the sea, find it inconceivable to move away from this familiar environment. Others were involved in the tourism industry in hotels prior to water taxiing and having a love for interacting with tourists, saw this as an opportunity to do so whilst being self-employed.

One hundred water taxi owners were found in this survey with some people owning more than one boat. The number of boats engaged in water taxi operations was 118 with approximately 242 persons being involved. Union Island had the largest percentage of water taxis (36.4%) with the majority of these operating from Clifton. Union Island was followed by Carriacou and then Bequia with 27.1% and 15.3% of the water taxis, respectively.

There are two water taxi associations in the Grenadines which together have a membership of 58 persons. The Southern Grenadines Water Taxi Association and the Carriacou and Petite Martinique Water Taxi Association (CPMWTA) account for 33 and 25 operators respectively. There were 26 persons who were not members of either.

The sizes of the boats range from 3.6 m to 15 m with the distribution of these boats normally distributed around a mean size of 5.9 m. The most common boat length was 5.5 m (18 ft). Extreme outliers were seen in Carriacou which tended to have larger sized boats than any of the other islands. The relationship between the horsepower and the mean length of the boats was a positive one, whereby an increase in the mean length of the boat showed a corresponding increase in horsepower. This is expected because a larger boat would require greater power to drive it. Many (31%) of the boats carried engines of 40hp while 18% were 85hp.

The majority (81.4%) of the 118 boats surveyed of the boats were open, partially-decked, locally called cigarette boats. Next were pirogues and flat sterns which were much less common (9.3% and 6.8%, respectively). The majority of the cigarette boats were made of wood and fibreglass.

The total number of boats with one engine was one hundred and eleven (111) and the remaining seven had two engines. Union Island had the highest number of boats with one engine (42 boats), followed by Carriacou (27 boats). Of the total 118 boats, Yamaha accounts for 90% of the engines, followed by Mercury with 3%, while only a few operators used other engine brands: including Evinrude, Johnson, General Motors, Honda, Mariner, and Perkins Diesel.

## Sustainable Livelihoods Survey

*Livelihood Assets – Human capital* — Human capital is defined as the ‘the skills, knowledge, ability to labour and good health that together enable people to pursue different livelihood strategies and achieve their livelihood objectives. At a household level, human capital is a factor of the amount and quality of labour available; this varies according to household size, skill levels, leadership potential, and health status’ (DFID 1999).

Household size varied among the operators. Some of them live alone, some with their immediate family members and others within an extended family arrangement. Several of the operators have children and partners in North America, to whom they provide regular financial support. Few operators incur high costs from ill-health in their household. This is important to their ability to provide adequately for their household and also to the well-being of their operation.

A significant proportion of the operators had no secondary education. Those who completed their secondary education, like the current President of the CPMWTA, are better able to share environmental information with their customers and with those that they may teach about water taxiing. Some of the skills required for water taxiing are not taught in the classroom, but are learned social behaviour, including courtesy, good hygiene, and honesty. ‘Education can take place outside the classroom’ is the position of an operator from Bequia who was taught to read by a woman from the church. Local knowledge is also an important component of the knowledge possessed by WTops.

There are some skills, however, which must be certified where people are involved, especially international tourists. Many of the operators said that they have no formal training in life-saving with many of them claiming to be self-taught. This is an important issue given the fact that when WTops take customers on day-trips, the customers may be in the water at some point, and there is therefore, the possibility of them getting into life-threatening situations that would require life-saving skills.

*Livelihood Assets – Social Capital* — Social capital is defined as the ‘the social resources upon which people draw in pursuit of their livelihood objectives. These are developed through networks, connectedness, membership of more formalized groups, and relationships of trust, reciprocity, and exchanges that facilitate cooperation (DFID 1999).

There is a strong social network in the Grenadines, wherein many of the operators have relatives within their community, elsewhere on the island on which they live and throughout the Grenadines as a whole. Despite this integration throughout the Grenadines, many operators said that their relatives would not be able to provide assistance to them. In many cases the operators stated that they were

independent and did not have to rely on relatives, while others conceded that their relatives simply did not have the ability to help. 'Everybody is struggling to make a living' said one operator.

Based on the preliminary survey, disregarding the 18 WTops from Bequia in this analysis since there is no association there, 61% of the WTops belonged to water taxi associations. This is seen as a positive step in building the capacity of WTops, as such a group may contribute to the enhancement of the social and human capital of the operators. Operators cited various reasons for membership of such an association. One WTO hopes to see 'improved communication among operators which could ensure greater safety at sea'.

*Livelihood Assets – Natural Capital* — Natural capital refers to 'the natural resource stocks from which resource flows and services (e.g. nutrient cycling, erosion protection) useful for livelihoods are derived. There is a wide variation in the resources that make up natural capital, from intangible public goods such as the atmosphere and biodiversity to divisible assets used directly for production' (DFID 1999).

WTops utilise the many beaches and cays throughout the Grenadines as natural capital for their businesses. Some operators have pre-packaged various activities to include day-trips with stopovers along the way at the various islands. The TCMP is one of the most popular sites or day trips and for soliciting business from yachts.

A diversity of activities is offered in these packages including snorkelling, swimming, bird watching, and diving around the cays and wrecks. On request, the trip may include lunch which the operators may prepare on the beach; barbeque-style or sandwiches. One operator from Union Island has established a business which entails transporting customers to his restaurant in Chatham Bay from hotels or from their yachts. He has been able to secure business from international yachting companies the Moorings and Sunsail. WTops have suggested that it is time that they benefit more from the many cruise ships that come to the area. They argue that they receive little business, and in the case of Mayreau, it is only to transport visitors from Saline Bay to Salt Whistle Bay.

Locals require transport from one island to another and may also make the occasional excursion. Given the irregularity of a formal ferry service between the islands of Grenada and St. Vincent and the Grenadines, WTops play an important role in providing this service. Some people go from Carriacou, for example, to take the mail boat from Union Island. When they return from their trip they also require transportation back to Carriacou with their goods. These trips cross national maritime boundaries.

WTops from the Grenada Grenadines experience no difficulty in crossing the boundary between jurisdictions to visit the various attractions. One operator said that it is inconvenient to stop while doing his job to seek clearance

from the immigration department. One operator from Carriacou shared that 'the authorities would be overwhelmed on a daily basis' because of the frequency with which he and other operators go to Union Island.

*Livelihood Assets – Physical Capital* — Physical capital 'comprises the basic infrastructure and producer goods needed to support livelihoods. Infrastructure consists of changes to the physical environment that help people to meet their basic needs and to be more productive, whereas producer goods are the tools and equipment that people use to function more productively (DFID 1999).

WTops beach and stern anchor at the beaches and cays mainly because moorings are too few, or totally absent in some places. At the islands, they use the jetties provided by the governments along with privately owned jetties, for example, those at Lambi's Guesthouse in Clifton, Union Island and Frangipani in Bequia. The government-owned jetties are generally appropriate, but a few of them are in need of repair or improvement. These include the Ashton jetty, which has a gaping hole at its end, and the Clifton jetty, which does not have fenders for small boats. A few of the private jetties are also thought to be in a state of disrepair and are thus hazardous to use.

Operators usually pull up their boats on the beach or take them to their homes. The fisheries complex in Clifton, Union Island serves as a haul-up site for those who mainly operate from Clifton. During storm events, operators pull their boats as far inland as possible to reduce damage to them. The Ashton WTops have developed a jetty by building it up on the discarded conch shells. This serves as a drop-off point for passengers especially when the small jetty is in use. This shows pro-activeness on the part of the Ashton operators, seeing the need for the infrastructure although lacking the legal authority to create such a structure.

Physical capital also extends to boat ownership and the type of equipment that WTops carry on-board. Boats may be built by WTops or purchased either within the Grenadines or from as far as the United States of America. There are boat builders throughout the Grenadines with Bequia, Union Island, Carriacou, and Petite Martinique cited as places from which boats were both purchased and custom built. Many of the operators purchased their boats from their savings, with a few of them gaining assistance through loans. An operator from Carriacou stated that he was able to build his boat 'piece by piece' as he obtained the funds. A WTO from Union Island is also a boat builder and recently built his own boat while using someone else's boat to carry out his operation. Many operators use the beach to both build and maintain their boats.

Other physical capital includes the emergency equipment and supplies that the WTops carry on-board. WTops generally possessed anchor lines, tools for repair at sea, water, lights, and in most cases, life jackets. Many operators did not have day and night time flares and first

aid kits. These are important safety items, especially the flares. Although the WTopps usually have life jackets, passengers are seldom asked to wear them. This diminishes the value of the investment, particularly given the small size of the boats, the high speed at which they often travel and the minimal skills-level of the operators in life saving. Other equipment may include steering wheels, cables, and a Global Positioning System (GPS) unit; owned by the most established WTO from Carriacou.

WTopps vary with respect to their personal physical assets. About equal proportions own their home, rent their home, and reside on family property. Many of the homes are of concrete with only a few being a combination of wood and wall. The ability to own their own land and home was not uniform across the entire group. Some have been able to own their own home and land solely through water taxiing, while others have had to depend on other livelihood activities to achieve this. Some operators used their land for subsistence farming.

Access to basic amenities was good, with all the operators having electricity and piped water that is collected in tanks from the roofs of their homes. The majority have indoor plumbing with a few having outdoor toilet facilities.

Fuel stations are neither common in the Grenadines nor easily accessible by boats and thus, WTopps carry their tanks on land to get their fuel. Operators from the Southern Grenadines often utilise the only fuel station accessible to boats, located on the jetty in Petite Martinique. This allows for direct filling of tanks, but is inconvenient for those who must travel from Union Island.

*Livelihood Assets – Financial Capital* — Financial capital ‘denotes the financial resources that people use to achieve their livelihood objectives. The definition used here is not economically robust in that it includes flows as well as stocks, and it can contribute to consumption as well as production. However, it has been adopted to try to capture an important livelihood building block, namely the availability of cash or equivalent, which enables people to adopt different livelihood strategies’ (DFID 1999).

Operators either buy or build their boats along with the necessary equipment from their savings. WTopps were able to secure loans from the bank to cover either the boat or the engine and in some cases, both. The average boat costs US\$5,000 (US\$800 to \$29,000) while the average engine costs US\$6,000.00 (US\$600 to \$15,000). WTopps strongly believe that saving money is important given the certainty of very little business in the low tourist season. There are some operators who prefer to save their money at the credit union. Others keep their cash at home and may even ‘bury it to keep it safe’ as one operator put it. One operator drew the analogy that ‘a boat is like a sinking ship, the more money you pour into, the heavier it gets and the further it sinks’. This is based on his experience as a WTO with the constant maintenance of the engine and the bi-annual

refurbishment of the boat.

The major daily operating costs relate to the gasoline and oil consumed for the water taxi operation. The cost of preparing food for customers when requested is incurred by some operators. Few operators could give an accurate account of how much they spend. Many could estimate, however, the cost of gasoline and oil for daily operation and in some cases for a trip to the Tobago Cays. According to one operator from Carriacou, his boat (6.5 m long) uses up to 75 L of gas per day costing up to US\$60.00 and four bottles of oil which cost US\$5.00 each.

The majority of the engine repairs are carried out in mechanic shops across the Grenadines. Operators, especially from Bequia, may take their boats to St. Vincent for maintenance and repairs. The range of repairs and their associated costs vary considerably depending on the severity of damage to the boat or the engine. Most WTopps refurbish their boats yearly by painting and re-fiber-glassing. One operator contended, however, that if the engine and the boat are well taken care of, there will be lower maintenance costs. He said ‘it depends on how you take care of you boat’. This sentiment was echoed by every operator. An operator from Union Island, for example, has his boat serviced in Ashton every six months at a cost of US \$260.00 each time. His boat is painted once a year in Petite Martinique at a cost of US \$450.00. Some operators repair and maintain their own boats.

Many operators do not have insurance for their boats: liability or boat loss. This is due to the difficulty in getting insurance for wooden boats. However, two operators do have their boats insured. One is among the largest boats which has passed the inspections of the Grenada Port Authority. The premium is US \$5,000.00 each year. In addition, he is required to pay US\$100.00 in tax each year on his operation.

### **Livelihood Strategies**

Livelihood strategies is the ‘the overarching term used to denote the range and combination of activities and choices that people make/undertake in order to achieve their livelihood goals’ (DFID 1999). In the Grenadines, complexity defines the livelihoods of WTopps. They are involved in other livelihoods activities that are both boat-related and otherwise (Figure2). This complexity may be defined as livelihood diversification.

The relative importance of water taxiing as an income-earning activity varies among operators and may range from being a pastime to a means of survival. Its importance depends on the skills and other capital that individuals may possess. Of their income, the majority originates from business with visitors, ranging from 25% up to 100%. The average percentage of income earned from visitors was 70%, with locals accounting for approximately 20% and the sale and transport of goods for 10%.

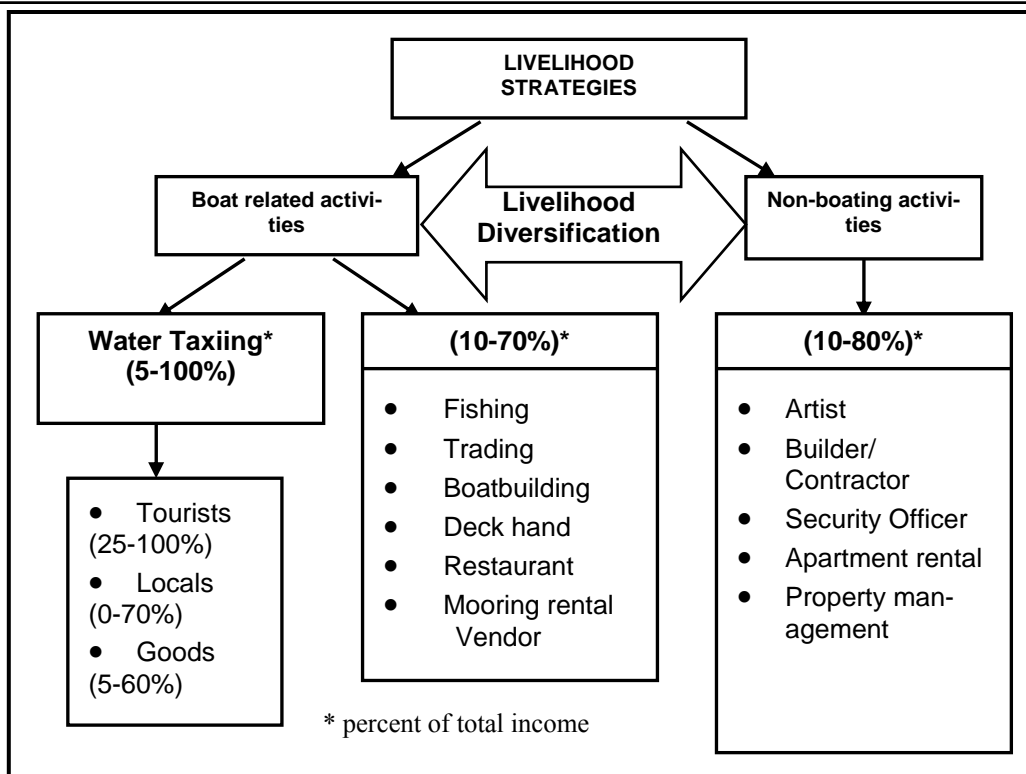


Figure 2. Livelihoods strategies of water taxi operators in the Grenadines.

The sale of goods is important for some operators ranging from 5% to 60% of their income within water taxiing. They not only supply yachts, but fishing boats from Martinique, hotels, and restaurants with a variety of seafood, including lobster, red hind, and snapper. Some operators set up vending points, for example on the beaches in the Tobago Cays which are manned by their spouses while they solicit sales from the yachts.

Water taxiing and fishing are often linked as income-earning activities, because the physical capital required for water taxiing and fishing are largely transferable. Fishers have said that they become involved in water taxiing because they can sell their catch to the yachts, restaurants, hotels, and locals. The physical assets are largely, but not entirely transferable, therefore, many of the boats originally built for fishing are not properly equipped with emergency equipment and supplies and are not fit for passengers given their size. Like the fishers, many operators who do not depend solely on water taxiing, use their boats to supplement their income especially in the low season. They are also involved in non-boating activities when water taxiing is not lucrative.

#### Vulnerability Context

Natural disasters and international events both have an impact on the livelihoods of the people of the Grenadines with the WTops being no exception. The major type of natural disaster affecting the WTops has been hurricanes, particularly given the lack of appropriate storage for boats

during such events. International events and trends such September 11th and rising oil prices were also recognised by two operators in Carriacou as potential threats to the livelihoods of WTops.

Hurricanes are considered a major threat to the livelihoods of WTops especially in the wake of Hurricane Ivan in 2004 and Hurricane Emily in 2005, which affected the area in two consecutive hurricane seasons. A macro-socio-economic assessment was carried out for Grenada and although it was based on the fisheries sub sector, the results were applicable to water taxis considering that many WTops are fishers as well as the fact that the two groups utilise similar physical capital. The report highlighted that ‘the 2,200 fishermen in the sector lost engines, hulls, fishing gear, safety equipment, communicating facilities, and housing’. Damages were estimated at US\$2,163,207 (OECS 2004).

Global increases in oil prices have increased prices at the pump in Petite Martinique from US\$3.00/gallon in September to US\$4.50/gallon in October. WTops see the rising oil prices as an issue since their operation costs will also rise putting them further out of the reach of business with visitors and locals.

WTops believe that a fall in tourist arrivals would have a significant impact on the viability of their business as a whole. An operator stated that ‘the business has not been the same since September 11th, 2001’. He believes that ‘government needs to invest more in marketing the islands if WTops are to make a living from tourism’. He has

invested in marketing on the internet for his business, but this is not aggressive enough to lure visitors to the island.

### CONCLUSION

WTops are important marine resource users in the Grenadines through their daily interactions with the marine environment, marine protected areas, and fishing. This study provides a better understanding of the strategies and challenges facing them in pursuing their livelihoods. They use diversification to cope with uncertainty and to take advantage of a range of opportunities. This must be accommodated in efforts to engage them in stewardship and management.

The water taxi project can contribute to the enhancement of livelihoods of WTops through capacity building activities. There are some areas however which require awareness education, training and further research. These include:

- i) A full sustainable livelihoods study to address the areas omitted in this study,
- ii) Educational awareness of the impacts of poor garbage disposal on the health of marine organisms and the marine environment to improve the human and natural capital of the operators:
- iii) Training in life-saving so as to improve the proficiency of operators,
- iv) Training to foster mutual respect and trust among operators so as to reduce conflicts among operators,
- v) An economic study to determine the viability of water taxiing, and
- vi) A Knowledge-Attitude-Perception (KAP) study at the end of the project to determine the impact of the WTP

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