"Agribusiness Essential for Food Security: Empowering Youth and Enhancing Quality Products"

Proceedings of the
30th West Indies Agricultural Economics Conference
30th June – 6th July, 2013, Port of Spain, Trinidad

Economic assessment of community-based tourism events in Saint Lucia: A case study of fish fry events in Anse-La-Raye

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Abstract

Tourism has been the second highest employment generator in Saint Lucia in the aftermath of the downturn of the Banana industry in 1999. Coastal livelihoods have now shifted from the Banana industry to the Tourism and Fishing industry. Fish Fry Events (FFEs) in the coastal communities of Anse-La-Raye (ALR), Dennery (DEN) and Gros-Islet (GI) provide economic opportunities and sustainable livelihoods to both the host regions and the regions where input factors are sourced. This paper defines a comprehensive set of monetary benefits and values derived from FFE in ALR. ALR's total economic impact was measured to have been EC\$11,904.30 and EC\$10,811.25 per month for the summer and winter periods respectively with the summer being more elastic than the winter period. Results showed that the economic impact assessment multiplier coefficient for ALR were 1.34 and 1.49 for the summer and winter respectively. FFE is economically significant in ALR year round since it does influence the creation of downstream income and employment and its multiplier coefficients are greater than 1. Furthermore, the number and origin of patrons, resource availability, and length of stay are shown to be the most significant factors that influenced the total economic impact of FFE in ALR.

Keywords: Saint Lucia, economic impact, agrotourism, coastal communities, sustainable livelihood, multiplier.

Introduction

There exist limited extractive resources in the Caribbean, especially within the member countries of the Eastern Caribbean (EC). Accordingly, Caribbean leaders are constantly faced with the urgency to effectively utilize any available resource to generate income and employment for sustaining their economies. Following the loss of preferential markets for bananas in 1999, banana production, which dominated Saint Lucia's exports, fell significantly from approximately 106,000 tonnes in 1996 to 11,000 tonnes in 2011. This resulted in a shift in Saint Lucia's economic foci towards diversifying and transforming the economy (Benfield 2009).

The Saint Lucia Department of Statistics (DOS) 2010 Census recorded a population of 173,720 (DoS 2011a). Saint Lucia has a total land mass of 616 square kilometres, most of which is volcanic and monolithic; it possesses approximately 158 km of coastline and is made up of 10 districts (Figure 1). Saint Lucia's tourism sector became increasingly important as a traditional Sun, Sand and Sea destination from 1999 onwards as well as a cultural heritage tourism and eco-tourism destination. Agrotourism remains an area of underdeveloped potential despite the significant importance of agriculture to the local economy.

Data from the Ministry of Finance, Economic Affairs, Planning & Social Security (MOFEPSS) (2012) indicated that Saint Lucia banana production is continuously experiencing challenges and setbacks. For example, Hurricane Tomas in 2010 caused banana production to decline by 55% between 2010 and 2011. In early 2011, banana production was also greatly affected by the spread of the Black Sigatoka epidemic. Altogether, 1,000 banana farmers abandoned their farms due to the burden of these two major events (MOFEPSS 2012). Many of these disenfranchised farmers turned to other sources of income such as fishing.

Fish landings in Saint Lucia experienced positive growth from 2003 to 2011 with a high of EC$24.8 million recorded in 2011. Revenue from some fish species such as snapper and flying fish declined over the same period. Lobster revenue decreased from 2000 to 2006, but increased thereafter. Revenue from conch landings fluctuated tremendously while revenues from landings of other species increased steadily from 2002 to 2011.

Linking tourism, agriculture and fisheries can create unique economic opportunities. Tourism is the second largest employer in Saint Lucia, accounting for over 42.2% of total employment and the largest earner of foreign exchange (Justin 2013), while the government is the largest employer (Government of Saint Lucia 2013). Figure 2 gives a breakdown of tourist related expenditure in Saint Lucia from 2000 to 2011. The lowest and highest overall amount of revenues collected from tourists were EC$567 million and EC$1517.1 million recorded in 2002 and 2010 respectively. According to the Commonwealth Network 2013, fisheries, agriculture and forestry, contribute 4% to Saint Lucia's GDP in 2011 while and travel and tourism contribute 42.5% (DoS 2011a).

In Saint Lucia, three communities have been engaged in optimizing existing fisheries resource by linking the agriculture, fishing and tourism sectors through the hosting of Fish Fry Events (FFEs) every weekend. According to records from Saint Lucia's Ministry of Agriculture, Lands, Forestry and Fisheries (MALFF) (2012) Anse-La-Raye (ALR) was the first community to have successfully hosted the FFEs. This presented the ALR economy with an opportunity to generate income and employment after the decline of the banana industry.

Normally, FFEs operate between 6:00 p.m. to 2:00 a.m. on weekends. The atmosphere of the FFEs host communities provides a simple festive and relaxing environment that is inviting and hospitable to all patrons[1]. Besculides et al. (2002) postulated that such environments create opportunities for exchange, revitalizing traditions, enhancing the quality of life of the local residents and improving the image of the community. At the FFEs, fish is prepared with spices and cooked in foil on grills. Lobsters, stuffed crabs, conch and prawns are also prepared. The FFEs are complemented with local, regional and international music, sampling of local liquor and side activities such as cultural shows.

Despite the success of Gros-Islet, Anse-La-Raye and Dennery in hosting the FFEs, these events have not been fully marketed as a tourist attraction (Isaac 2010).

Fisheries in Saint Lucia

Fishing is very important to Saint Lucians as it provides them with food (a healthier source of animal protein), facilitates community development, economic stability, wealth and the transfer of cultural and traditional values (intergenerational), and serves as a form of recreation (National Research Council 1999). Fishers can sell on the open market or to the Saint Lucia Fish Market Corporation

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[1] A patron is anyone who attends the FFE who resides both within and outside of the host community. Also, anyone who attends the event from outside the host community will be termed a tourist. Furthermore tourist is divided into local and foreign. A local tourist is anyone who resides in Saint Lucia and lives outside of the FFE host community while a foreign tourist is anyone visiting Saint Lucia for less than three months at any one point in time attending the FFE.

(SLFMC). The SLFMC was set up by the government in 1985, from a US$2.5 million grant from Canada to provide a guaranteed market for both initial and/or surplus[2] landings (Badal 2012). Figure 3 shows that from 1996 to 2001 fish landings increased steadily and peaked at 1967.3 tonnes in 2001. Fish landings fluctuated between 2002 and 2007, increased in 2008 and peaked in 2009, but declined in subsequent years (DoF 2011a).

Anse-La-Raye FFE

Anse-La-Raye[3] is the poorest of the three host communities for FFES. It's population is 1,561; officially, it's labour force is 763 and it's unemployment rate is 33.55% (DoS 2011b). Every weekend a myriad of persons gather at closed off streets in the coastal communities[4] of Anse-La-Raye, Dennery and Gros-Islet. In Anse-La-Raye, FFE is called Seafood Friday (Augustin, pers. comm.). Anse-La-Raye, like the other local communities, has utilised various local communities to exercise its sole responsibility for the development and management of its FFE over the years.

Recently, ALR's FFE have been experiencing some contraction (Augustin, pers. comm.). These contractions may be attributed to declines in the purchasing power of local and foreign patrons resulting from higher prices of seafood and other products sold at the FFE and the increased number of substitute activities along with increased travel cost. Also, the overall fish supply[5] of demersal and certain pelagic fish have been facing steady declines (DoS 2010) and may

negatively impact the FFEs.

It is imperative that FFEs be comprehensively evaluated to clearly identify their impacts. The findings of these evaluations may enhance he justification for additional financial and technical support from government and other funding agencies. An understanding of the economic linkages between sectors associated with the FFEs can assist tremendously in identifying the strengths, weaknesses and areas for further community involvement. Economic impact evaluation may also provide useful support in justifying the funding required for the expansion and enhancement of agrotourism events through the various benefits that are accrued to the local and entire economy.

The extent to which the FFEs are impacting the economy is unknown. Accordingly, this research represents a start in addressing that void.

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Research Justification and Objectives

Recently, rural development has become an integral part of the global discussion by many of the world's leading environmental and food organizations such as FAO. Within the Region, CARICOM has put in place sustainable projects funded by grants from the World Bank (WB) and European Union (EU) to improve rural livelihoods through the use of rural resources. These projects are aimed at improving economic equity among the urban poor and rural population, reducing poverty and implementing viable management plans. Notwithstanding, the private-sector needs to invest and create more sustainable job ventures in rural areas to encourage entrepreneurial development and reduce the high levels of urbanization.

With urbanized development and the decline of the banana sector, many rural residents are shifting their focus to fishing, tourism services and cannabis as a means of generating income for their livelihoods. However, there exists limited economic opportunities along the coastal villages of Saint Lucia despite their potential to create

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[2] Initial landings is fishers' landings from a day's catch after drawings but before any sale of the fish to the public while surplus landings is the difference between fishers' landings per trip and the amount they sold on the open market to the public and drawings.

[3] The impact areas that the geographic boundaries considered as part of the FFE surrounding economy at Anse-La-Raye included the village, St Lawrence, St Lawrence Estate, Au Tabor and Anse-La-Raye.

[4] Within each district in Saint Lucia are bounded areas called communities (villages or towns). The size of each community varies from district to district. That is, the community is defined by a required population or area enclosed.

[5] Fish landings for overall consumption in Saint Lucia.

economic activities. Stand-alone industries such as the FFEs can create tremendous direct and indirect employment opportunities as Saint Lucia's rural economies continue to diversify away from agriculture.

This research measures and analyses the socio-economic impact of the Anse-La-Raye FFE. It aims at deriving monetary and qualitative economic impact evidence that may facilitate the ministries responsible for tourism and fisheries in making more informed decisions. In addition, this would allow further discussion on the economic development and sustainability of rural economies in the country. In the subsequent section there is an intensive literature review on common approaches to measuring economic impacts. This is followed by details of the methodology for data collection and calculation of the ALR FFE economic impact, the findings and discussion of these results. The paper ends with a general conclusion.

Material and Methods

Economic Impact Assessment of Events

For each dollar spent at any event, three measures of its impact can be derived, namely direct, indirect and induced impacts; these together represent the total impact (Miller 2007):

$$\begin{bmatrix} Total \\ Impact \end{bmatrix} = \begin{bmatrix} Direct \\ Impact \end{bmatrix} + \begin{bmatrix} Indirect \\ Impact \end{bmatrix} + \begin{bmatrix} Induced \\ Impact \end{bmatrix}$$
(1)

Direct Impact

This measure captures all money that is spent by patrons from outside the host community throughout the immediate geographical boundaries of the host region, for example, goods and services such as taxi, food/drinks purchased by tourists and tips. Jago and Dwyer (2006) noted that the direct spending would account for an injection into the host communities and determine secondary impacts (indirect and induced). For

this reason, patrons are sub-divided into two categories; residents and tourists. Residents' expenditure is classified as a recirculation of money within the host community because their wealth is already described as belonging to the community whether it is spent at an event or not. Such money would have likely been spent on other goods and services within the host communities if the event were not held (Getz 1987; Crompton 1999).

Vendors and exhibitors normally comprise both residents and non-residents. Purchases by resident vendors will contribute little or no impact to the host area as expenses incurred by these vendors are considered to be a recirculation of money that have been already been accounted for. However, Miller (2007) postulates that the only exception should be made in the case where resident vendors considered in the EIA are restricted from leaving the host community to vend at a concurrent event.

Direct expenditure is accounted for by:

1. Persons who live outside Anse-La-Raye, go directly to the FFE and are not en route to another event.
2. Persons who work in Anse-La-Raye and adjust their work to coincide with the FFE.
3. Residents who chose to go to the FFE instead of leaving the community during the time of the event.

Indirect Impact

This would account for all revenues that are transferred from one local business/vendor to the next for the purpose of hosting the event. This results in the businesses spending and re-spending the money within the host community among themselves. Such re-spending between local businesses will continue until it leaks from the host community. Accordingly, expenses incurred by non-resident vendors in the preparation of the event must be considered as part of the indirect impact of the EIA.

Induced Impact

Induced effect is created when persons who are employed at the FFEs are paid for their services and spend a proportion of their disposal income on themselves or indirectly on local goods and services within the host region (Jago and Dwyer 2006). Also, it captures the dividends, interest and rent paid to local companies (for support services to the FFE's businesses) and in turn is spent on local goods and services after the direct spending (first round of spending). Similar to direct and indirect spending, induced spending will also create a multiplicative effect indefinitely within the host region until all the money leaks out of the host region. Furthermore, depending on the magnitude and significance of an event to an economy, if the event were to be cancelled or terminated, the entire economy of the host region would suffer economically as a result of belt tightening measures exercised by persons who were employed at the FFEs, who are now without employment.

Miller (2007) mentioned that most times non-priced donations and in-kind transactions are normally overlooked as part of the overall economic impact of an event. Also, Mathur et al. (2009) postulated on the basis of previous work done by Crompton (2006), that spending by local residents should be eliminated from the economic analysis because it is very difficult to dissect which part of local residents spending at the host event would have been spent in the area otherwise. Accordingly,

$$\begin{bmatrix} Direct \\ Economic \\ Impact \end{bmatrix} = \begin{bmatrix} Total\,Visitors\,at \\ event\,excluding \\ Local\,Residents \end{bmatrix} \times$$

$$\begin{bmatrix} Average \\ Spending\,per \\ Person \end{bmatrix} \qquad (2)$$

Models to Calculate Multipliers

Multipliers measure the effects of demand increases caused by an injection of money from outside an economic system. Only then can the impact be seen as extra wealth 'generated' by demand increases in particular sectors (Madden 2001). Also, depending on the event under study, if most of the raw materials can be sourced internally the larger would be the economic impact notwithstanding the size of the host community. As in the case of the ALR FFE, the majority of the inputs needed for the preparation and hosting of the event are sourced outside the community. Such inputs range from seafood, seasoning, beverages and poultry.

Various Input-Output (I-O) and Computable General Equilibrium Models can be used for calculating economic impact multipliers. The most preferred I-O models were that of the IMPLAN Pro Model, Michigan Tourism Spending and Economic Impact Model (MITEIM), RIM II and the Money Generation (MGM2) Model (Miller 2007; Jago, Leo, and Dwyer 2006). Miller (2007) outlined that the IMPLAN Pro Model provides estimates of total regional sales, employment and earnings from various events. Crompton, Lee and Shuster (2001) expressed that IMPLAN Pro produces three different multipliers, namely; revenue, employment and personal income to facilitate the measurement of the economic impact assessment. In using the IMPLAN Pro Model to calculate the employment multiplier the following should be noted:

a) The model does not explicitly distinguish whether jobs are full-time or part-time and the number of hours worked by an employee.
b) The model considers every employee operating at maximum efficiency.
c) Lastly, as the employment multiplier is derived, it reflects the impact of overall employment. That is, for any increase in the level of revenues, it assumes that employment must expand, to meet any

increases in patrons' spending.

The MITEIM model subdivides visitors' spending into categories such as vehicle expense, gambling, clothing, sporting goods, admissions & fees, gas & oil, local transportation, restaurants & bars, overnight fees, souvenirs and other expenses (Miller 2007). This allows for emphasis to be placed on the money spent on categories that account for either deeper or lesser spending impact on the economic activity. The weaknesses within the MITEIM model lie in the fact that it produces annual multipliers, which are based on the assumption that industry activity is ongoing year round.

Computable General Equilibrium (CGE) Models rely on a set of mathematical equations formulated from key production and consumption relationships of industries within the economy, which are solved simultaneously. Dwyer (2006) suggested that the relationships modelled ensure that each market (goods, production and foreign currency) operates in an equilibrium state. The economic models stem from a closed system to capture income-spending patterns. Income-spending patterns and relationships allow for changes in prices and incomes and the determination of consumer demand for each good. Further, production volumes are subjected to operations within the confines of the good's production functions.

Analytical Design: Sampling Frame and Sampling Technique

The methodology adopted in this study represented a mix of primary and secondary research. The secondary research comprised collection of relevant fisheries data, census data and national data from the Saint Lucia Department of Fisheries (DoF) and Department of Statistics (DoS). The primary research consisted of a random survey of patrons, face-to-face and telephone interviews with vendors, fishers and organizers as well as focus group meetings with the fishers and vendors. Introductory

letters were sent to the Saint Lucia DoF and DoS to request relevant fisheries, census and national data. Also, correspondence was maintained via email and telephone between the researcher and the above mentioned ministerial departments throughout the duration of the study.

Survey of Patrons

The patrons sample size was calculated so as to satisfy a 95% confidence interval and ±5% margin of error[6]. In the summer, for a population of 455, the estimated sample calculated was 207. In the winter, for a population of 345, the estimated sample size was 167. The surveys were carried out from August 1, 2012 to March 31, 2013 to capture variability in fish landings, the high and low tourist seasons and the high period for local/domestic tourism. This period was also chosen so as to avoid other competing events such as Lent (when festivities are significantly reduced); the Saint Lucia Jazz Festival (late April to mid-May) and Carnival (thirds week of July). The data collection period was divided into two Phases such that Phase 1 ran from August 1 to November 30, 2012 while Phase 2 ran from December 1, 2012 to March 31, 2013.

The Patron Questionnaire focused on questions relating to their behavioural characteristics, expenditure patterns and perceptions. The researcher conducted a pilot test of the Patron Questionnaire at the Anse-La-Raye Seafood Friday to evaluate the wording (clarity), length, logic flow and conciseness of the questions. Patrons were randomly approached and questioned to find out whether they were at the latter part of their visit at the ALR FFE to determine their eligibility to participate in the survey. This was accomplished by enumerators administering on-site face-to-face interviews in multiple locations rather than focusing solely on populated areas. However, no questionnaires

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[6] Based on the above conditions surrounding selecting a sample size, a sample calculator from http://www.surveysystem.com/sscalc.htm was used in calculating the proposed samples.

were administered to patrons at the end of the FFE. This was done to allow patrons their right to leave the FFE community without any interruptions because they may not have the patience, may be intoxicated or may be more focused on finding transportation to get home - all of which may affect the quality of data. Surveys were carried out primarily in English. However, there were cases where the interviewers who were native speakers of French Creole (patois) and English had to use their French Creole skills to bring clarity to specific respondents.

It should be noted that the FFEs are un-gated events where patrons are free to come and go as they wish using multiple entry and exit points; much unlike gated events where patrons' numbers can be determined from tickets sales count, gate count, box office orders and/or based on the area's capacity (Crompton, Lee and Shuster 2001).

The number of patrons attending the FFE per month was calculated from the proportion of attendees (both residents and tourists) sampled and the estimate of the total attendees (N) based on counts derived from aerial snapshots. In the survey, the patrons' count was found by using both aerial and ground counting techniques such as a grid[7] every 2 hours from the commencement of FFE until the peak hours.

Empirical Framework

This analysis seeks to extend the previous literature by formulating algebraic expressions to measure economic impact. Based on Stynes (1999) and as highlighted by Gelan (2003, 413-415), a system of equations will be modelled to arrive at the total economic impact S of FFE patrons.

Let
$$S_j = N \Sigma_i S_i \alpha_{i,j} \qquad (3)$$

where:

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[7] Gridding is sub-dividing the FFE's main stage area into equal blocks to simplify counting of total patrons' number.

S_j represents total spending on each expenditure category j (beverage, seafood, supplements and other expenses)

N represents total number of tourists

S_i is group i's share of total visits

$\alpha_{i,j}$ is the average spending of a tourists on each expenditure category j.

Total spending for the impact is thus defined by $S = V_e \Sigma_j \lambda_{v,j} + L_s \Sigma_j \lambda_{l,j}$ (4)

where:

S is the total spending at FFE that would be considered for the total economic impact assessment calculation

$\lambda_{v,j}$ are average nightly spending in each expenditure category j per tourist

$\lambda_{l,j}$ are average nightly spending in each expenditure category j per resident

L_s represents the total number of residents to be considered as part of the economic assessment calculation

V_e represents the total number of tourists to be considered as part of the economic assessment calculation.

Further let
$$V_e = \phi V \qquad (5)$$

$$L_s = \psi L \qquad (6)$$

where:

V is the total number (population) of tourists attending FFE per night

L is the total number (population) of residents attending FFE per night

ϕ is the proportion of tourists that will be considered for the economic impact study.

ψ is the proportion of residents that will be considered for the economic impact study.

In addition, let:

$$\lambda_{v,j} = \Sigma \beta_{v,j}/\eta_v \qquad (7)$$

$$\lambda_{l,j} = \Sigma \beta_{l,j}/\eta_l \qquad (8)$$

where:

$\beta_{v,j}$ represents the amount of nightly expenditure incurred by tourists under the each spending category.

$\beta_{l,j}$ represents the amount of nightly expenditure incurred by residents under the each spending category.

η_v represents the total number of tourists who took part in the survey

η_l represents the total number of residents who took part in the survey

Substituting equations 5 to 8 into equation 4 produces the following equation:

$$S = \phi V[\Sigma \beta_{v,j}/\eta_v] + \psi L[\Sigma \beta_{l,j}/\eta_l] \qquad (9)$$

At this time, a capture rate is multiplied by equation 9 to give equations 10 and 11 which would be the total adjusted direct impact spending for the assessment. This will be done to exclusively omit the cost of any products (raw materials) that were produced from imported raw materials and bought by patrons at the FFE; this is consistent with the modality of allowing only the retail margins of FFE vendors to be counted towards the economic impact.

$$E = \sigma S \qquad (10)$$

$$E = \sigma(\phi V[\Sigma \beta_{v,j}/\eta_v] + \psi L[\Sigma \beta_{l,j}/\eta_l]) \qquad (11)$$

where:

E represents the total adjusted direct total spending that will be considered in the calculation of the economic impact assessment

σ is the capture rate

$$\sigma = \frac{\text{value adddded margin on imported goods} + \text{locally produced final goods}}{\text{total spending by patrons}}$$

Value Added Sales Multiplier

Input-output models are the preferred measures used in finding multiplier values within the literature. However, this research will not utilise any I-O model because Saint Lucia does not have an I-O model. In addition, I-O models have been found to be time consuming and complex, while assuming constant returns to scale and fixed technical coefficients and unlimited resources (Taylor et al. 1993; Lee 2006). A Type II Value Added Sales Multiplier would be the only multiplier employed in this research because it will be clearer, concise and comprehensive to calculate in the absence of an I-O model. Type II multipliers considered both the indirect and induced impacts. Type III multipliers would not be used to derive the induced effect as these account for households as exogenous to the economy contrary to being seen as a sector of the economy (Stynes 1997, 16) For example, if an employment multiplier were to be applied in this research this would produce misleading employment values because these values would have resulted from the assumption that all employees occupy full-time positions and that businesses ran by FFE vendors and organizers have no spare capacity. All the employment opportunities held within the context of FFE are on a seasonal or part-time basis. Accordingly, any employment impact value calculated from the employment multiplier would be interpreted as creating more full-time positions; when in fact employment will only respond by increasing part-time hour worked by existing workers or the creation of full-time opportunities. With that being said, a few extra hirings may be sought but not as high as the numbers an employment impact value would suggest.

Each community will possess its own multiplier value because respective communities all have different levels of linkages and leakage structures. MacPherson (1997, 15) shared the same views as Crompton (1999), expressing further that rural multipliers are generally closer to 1 in comparison to urban multipliers which are substantially greater than 1. In the case of FFE in ALR, the multiplier would be heavily

influenced by imports due to the high level of imports needed for the hosting of the FFE in ALR. Furthermore, work done by Wassily Leontief during the 1930s who pioneered multiplier modelling, assumes that average and marginal I-O coefficients are equal. Accordingly, a Ratio Type II sales multiplier will be used in this study. Hence, the use of a value added sales multiplier as an average coefficient as seen in equation 14 below in calculating multipliers for this study. Also, an *apriori* multiplier value of greater than 1 is expected if FFE is to be considered to be significantly important for creating further income and employment opportunities within the host community drawing on the interdependence that exist among local businesses within ALR.

$$\mu = \frac{TS}{DS} \qquad (14)$$

where:

μ represents the value added sales multiplier
TS represents total monetary contribution as a result of FFE on the host community (which is the sum of induced, indirect and direct spending).
DS is the direct spending (with leakages being accounted for in this total) of patrons at FFE (Jago, Leo, and Dwyer 2006).

Total Economic Impact = Total Adjusted Direct Impact Spending × Value added Sales Multiplier

Total Economic Impact of FFE = $\sigma[\phi V(\Sigma_j \beta_{v,j}/\eta_v) + \psi L(\Sigma_j \beta_{l,j}/\eta_l)]\mu$ (15)

The value of the multiplier will account for the indirect and induced effects. Also, the multiplier was multiplied to the adjusted direct impact spending rather than the total spending to avoid inflating the total economic impact and to account solely for that extra economic value attributed to the hosting of FFE (Stynes 1997, 19).

Results and Discussion

Survey Outcomes

Table 1 shows the number of patron questionnaires that were distributed, the total number of respondents and response rate. The values in parentheses indicate the number of foreign tourist respondents who took part in the survey.

Local Economic Impact of Anse-La-Raye FFE Framework

Analytical Review of Findings

Patrons Profile: The gender profiles were 41.49% males/ 58.51% females during the summer and 58.14% males/41.86% females during the winter. A total number of 188 and 129 patrons were interviewed out of the sample sizes of 209 and 182 during the summer and winter periods respectively resulting in response rates of 89.95% and 70.88% respectively (Table 1). These changes may have resulted from a higher proportion of foreign tourists visiting FFE in the winter, namely 24.03% as compared to 14.89% in the summer; local tourists accounted for 52.13% and 48.84% respectively and residents of the FFE area accounted for 32.98% and 28.68% respectively. There was a one year difference between the average age of patrons during the summer and winter periods, 32 and 31 years respectively (Table 2a).

ALR FFE Local Economic Impact

The discussion here is limited to an overview of the economic impact assessment of Anse-La-Raye's FFE with key focus on the calculation of the multiplier, capture rate and total spending at the ALR FFE. The information that was collected on the patrons' spending pattern included expenses on seafood, beverage, seafood supplements and other goods and services (Table 2b). The

following assumptions were made in implementing the methodology for local economic impact (a) vendors operate from a fixed production function (b) one month's patrons count at FFE for the summer would be the same for all other months falling in the summer period of FFE, and the same for the winter months and (c) there is a direct relationship between the residents and tourist numbers who took part in the survey and that of the population. These assumptions were deemed necessary because FFE is a year round event. Also, it is expected that patrons attending the FFE during the summer or winter period would demonstrate similar spending behaviours and patterns. All research quotations, prices and other monetary references were stated in Eastern Caribbean (EC) 2011/2012 dollars.

The capture rates of 53.91% (summer) and 42.52% (winter) were calculated for the respective seasons (Table 3). These rates suggest that even though all FFE patrons' spending will be accrued by the local region, only 53.91% and 42.52% of that spending by patrons during the summer and winter months respectively would actually be accounted for as money which was solely generated from FFE by the efforts of local businesses/vendors in the supply of final goods and services for FFE. That is to say, 0.54 and 0.43 of every $1 spent by patrons during the summer and winter months respectively would be retained in FFE region to generate income and employment for ALR. 46.09% and 57.48% of patrons' spending would be leaked out of ALR before any FFE employee or employer starts spending the FFE revenues in ALR for the purchases of goods or services during the summer and winter months respectively. Most times these immediate leakages would account for payments of credit purchases of goods or services made by businesses/ vendors or placed in a provisional account for the restocking of imports for the next hosting of the FFE. Therefore, this amount of patrons' spending cannot be circulated in the community and would have no impact on the

multiplier coefficient and economic opportunities for ALR.

Multiplier values of 1.34 and 1.49 were calculated for ALR during the summer and winter periods respectively (Table 3). This means that for every $1 of patrons' spending at FFE, $0.34 and $0.49 of further income will be generated within the local economy during the summer and winter months respectively before this dollar is completely used up within the local economy and/or leaked out of the region by local businesses or residents who need to use that money to purchase goods or services from outside the local economy. After applying multiplier values for the summer and winter periods of 1.34 and 1.49 to the direct sales effect of $8883.81 and $7,255.87 respectively, ALR experienced ripple effects in its local economy through inter-business linkages which resulted in a further increase of $3030.50 and $3555.38 respectively in indirect income.

The total patrons' spending per month for FFE is estimated to have been EC$20,831.75 and EC$20,817.39 during the summer and winter months respectively with an estimated EC$16, 478.97 and EC$17, 064.60 respectively being attributed directly to the calculation of the local economic impact measurement. The winter total spending is greater than the summer total spending because of the expected rise in foreign tourists at the FFE, and the higher average spending of EC$73.15 and EC$56.65 recorded for during the summer and winter months respectively. It should be noted that higher quality of inputs have to be sourced during the winter to meet the expected rise in foreign tourists and cater premier seafood such as lobster, turtle and snapper.

Vendor Discussion

Prior to the decline of FFE, fishers were more prepared and willing to sell the primary FFE's product (fish) to FFE vendors. This is no longer the case, as less seafood is demanded by those FFE vendors due to a myriad of factors. Currently, FFE vendors have to set up informal contracts with fishers in order to gain first

preference to sourcing seafood for FFE. Furthermore, vendors can no longer get seafood at reasonable or discounted prices due to the practice among fishers of setting the price of their catch based on cost benefit considerations; the recorded decrease in the number of fishers and the recorded increase in the fishers' operating cost resulting from the introduction of the Value Added Tax (VAT)[8] (Augustin, pers. comm.).

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[8] Which was implemented in October 2012 as part of the International Monetary Fund's (IMF) restructuring recommendation for Saint Lucia.

Conclusion

Tourism and agriculture, fisheries are vital industries to the rural economy, and by extension, the national Economy of Saint Lucia. FFE in communities such as Anse-La-Raye exploits the synergies among these industries and provide economic monetary contributions to its local economy. Results show that Anse-La-Raye's economy benefits tremendously from the hosting of FFE. This was evident as ALR's FFE resulted in multiplier coefficients of 1.34 and 1.49 for the summer and winter periods respectively. Therefore, if FFE were to be discontinued or decline further, other industries within ALR would be stretched to create employment for a greater number of persons would are willing to work in ALR.

Furthermore, it must be worth noting the magnitude of the EIA measures of $11,904.3054 and $10, 811.25 that satisfy almost an entire economy of just under 1000 people as compared to this same figure being sufficient for a few or single household in an urban area like Rodney Bay, Gros-Islet. These estimated EIA values serve to raise awareness on areas which would aid in economic development through the alleviation of poverty and the need to encourage agrotourism. Therefore, FFE needs to be further strengthened through improved support from the government, private sector or individual investors.

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Table 1: **Actual Sample Size for the Patron Survey by Phase /Season**

FFE Site (ALR)	Distributed	Returned/Completed Responses			Response Rate
		Tourist	Resident	Total	
Summer	209	126 (28)	62	188	89.95%
Winter	182	94 (31)	37	129	70.88%

Table 2a: Anse-La-Raye Total Economic Impact Assessment Subcomponent Factors

	Summer	Winter
Average Age	32	31
Total number of Patrons (N) at FFE per night	455	345
Number Residents (L)	150	99
Number of Tourist (V) per night	305	246
Percentage of residents who stayed in area to support home FFE (ψ)	61.73%	70.27%
Percentage of residents who attended FFE with no alternatives (1 - ψ)	38.27%	29.73%
Percentage of tourists attendees who primarily attended FFE (φ)	82.54%	83.7%
Percentage of tourists attendees who primarily attended FFE (1 - φ)	17.46%	16.3%
Total survey response	188	129
Number of tourists who took part in the survey (η$_v$)	126	94
Number of residents who took part in the survey (η$_l$)	62	37
Average attendance per month	1.68	1.99
Percent of residents attending FFE per night	32.97%	28.68%
Percent of tourists attending FFE per night	67.02%	71.32%
Percent of attendees budgeted for FFE	69.68%	54.33%

Table 2b: **Anse-La-Raye Total Economic Impact Assessment's Monetary Factors**

|	Summer (EC$)	Winter (EC$)
Total spending from survey	8606.68	7,931.50
Total spending by tourists ($\beta_{v,j}$)	7137.90	6876.50
Average spending by tourists($\lambda_{v,j}$)	56.65	73.15
Total spending by residents ($\beta_{l,j}$)	1468.78	1055.00
Average spending by residents($\lambda_{l,j}$)	23.69	28.51
Adjusted Total Spending		
($\lambda_{v,j} \times \eta_v$) + ($\lambda_{l,j} \times \eta_l$)	8606.68	7931.5
Spending on seafood	4620.18	4751.5
Spending on beverage	2652	1355.5
Spending on other	683.5	958.5
Spending on meat	951	866
Imported goods value added (ω)	11,230	8852
Induced + indirect spending	7,050	10,200

Table 3: Anse- La-Raye's Total Economic Impact Assessment Calculation
(All prices are in EC$)

|	Summer	Winter
Proportion of Tourist (V_e) for impact study	252	206
Proportion of Residents (L_s) for impact study	93	70
Total patrons' spending (S) per night	$16,478.97	$17,064.6
Capture rate (σ)	0.53908	0.425221
Total adjusted direct spending (DS)	$8883.81	$7,255.87
Multiplier (μ)	1.34	1.49
Total Economic Impact per week	$11,904.3054	$10, 811.25

Figure 1: **Map of Saint Lucia and the Caribbean**
Source: Adapted from Google Images, 2012
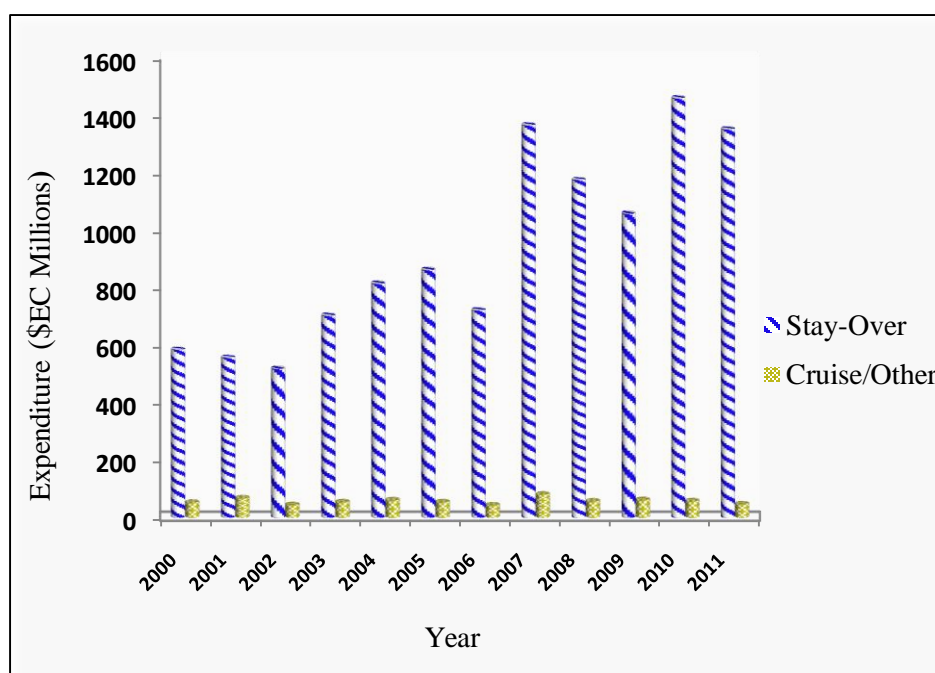
Figure 2: Tourist Arrivals and associated Expenditure, 2000 – 2011
Source: Saint Lucia Tourist Board, 2012
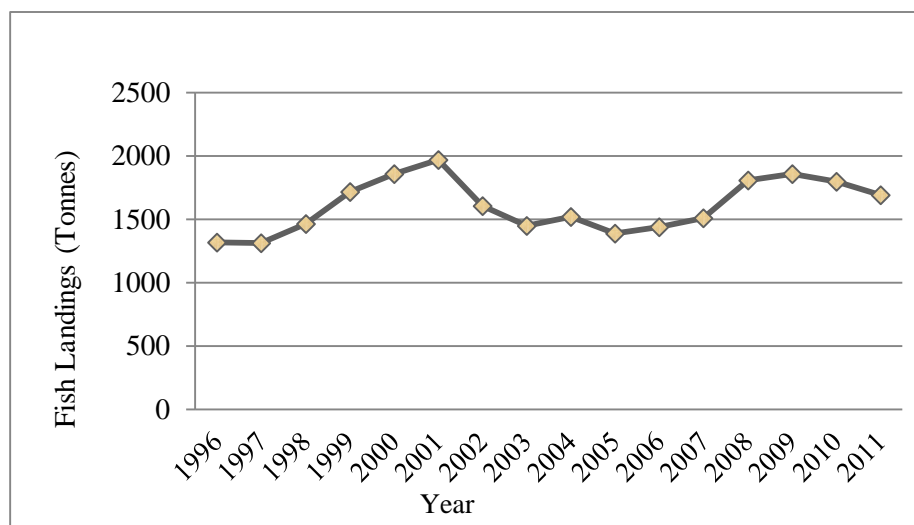
Figure 3: Quantity of Fish Landings in Saint Lucia, 1996-2011
Source: Department of Fisheries, Saint Lucia, 2012