KALAM -International Research Journal
Faculty of Arts and Culture
South Eastern University of Sri Lanka
Volume X Issue 2, 2016

Assessment of Potentiality of Ecotourism in Sri Lankan Context: An Analytical Study of Econometric Basis

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Abstract

This study aimed to statistically measure the potentiality of resources of Ecotourism on Gross Domestic Product of Sri Lanka and to direct the policy makers to appropriately identify the resources of ecotourism contributing to Gross Domestic Product of Sri Lanka. The data used in this study were collected from Sri Lanka Tourism Development Authority and Annual Report of Central Bank of Sri Lanka from the period of 1983 to 2013. The variables used in this study were CTR, ZGR, BGR, BMICHR, WPR, ETR and RGD**P.** CTR, ZGR, BGR, BMICHR, WPR, and ETR were used in this study as the independent variables. RGDP is used as the dependent variable in this study. The quantitative methodology used in this study was based on the econometric analysis using the Statistical Software of E-Views, Minitab and MS Excel in collaboration with the parametric analyses. The time series econometric techniques such as Augmented Dickey Fuller (ADF) for unit root test, Johnson co-integration test for the long run relationship, Granger causality test for causal relationships between the variables and Residual test for best regression model were used in this study. There was a positive relationship between BGR, BMICHR, CTR, ETR and RGDP and an inverse relationship was found between RGDP, WPR and ZGR. The value of R-squared was 0.9637 and Durbin-Watson statistic was 0.6365. The residual was stationary along with all the other variables. The Granger causality test showed the different way causal relationships between all the variables. This study prominently suggested for the government and policy makers to keep on focusing on the economic policies to be designed for the promotion of ecotourism industry as one of the prospective sources for economic growth and development in Sri Lanka.
Keywords: Ecotourism, Gross Domestic Product, Cointegration, Spuriousness, Stationary

Introduction

The varied and rich ecotourism potentials in Sri Lankan context are very much analytical. Government of Sri Lanka has accepted ecotourism as a niche segment of Sri Lanka Tourism and guidelines for ecotourism development have been formulated in three areas, i.e., location, site development and operations. Construction of eco resorts and eco-lodges, identifying potential and available areas for eco-tourism programmes, and encouraging eco-tourism activities around privately-owned resources are prioritized areas to support the eco-tourism objectives (Sri Lanka Tourist Board, 2003). Public sector institutions derive revenue from tourism in variety of ways such as

tourism development levy, embarkation tax, Income of Tourism Development Authority, entrance fees to cultural triangle, Wild life parks, Museums, Botanic gardens, BMICH etc. In 2013, the revenue collected from the listed sources amounted to Rs 5,526.6 million as compared to Rs 4,872.6 million collected from the same sources in the previous year. This was an increase of 13.4 per cent. Out of the total revenue collected in 2013, the top three contributors were; embarkation taxes – Rs.1, 604.8 million, cultural triangle entrance fees – 1,330.7 million and Tourism Development Levy 1,014.2 million. The Wild Life Parks, the Zoological gardens, and Botanical Gardens also contributed considerable amount recording 424.8 millions, 480.7 million and 279 million respectively (SLTDA, 2013).

Theoretical Background

Ecotourism means responsible travelling to fragile, pristine, and usually protected areas that strives to be low impact and (often) small scale. It aims to educate the traveler, to provide funds for conservation, to directly benefit the economic development and political empowerment of local communities, and to foster respect for different cultures and for human rights. Ecotourism is held as important by those who participate in it, so that future generations may experience aspects of the environment relatively untouched by human intervention (Honey 2008).

In Sri Lanka, ecotourism is defined as responsibility in travelling to natural and cultural areas that conserves the environment of such areas and sustains the well-being of local people, with the objective of conservation and restoration of natural resources, promoting the community involved in tourism development, promoting investment on conservation of ecological resources and utilization of ecotourism as a tool for conservation and rural development (Gunasinghe, 2011). Thus, ecosystems with different species of flora and fauna are vital for the functioning of global life-supporting systems. Sustainable use of natural ecosystems while maintaining their diversity is major requirements for sustainable tourism. Thus, National Eco-tourism Policy of Sri Lanka emphasizes the following areas:

1. Tourism development and marketing should highlight the country's distinctive religious traditions, cultural and historic and attractions, and its natural beauty and diversity.
2. Tourism development should promote the conservation and enhancement of Sri Lanka’s natural environment and its historical, social and cultural avoiding any harmful effects.
3. Tourism should result in optimal economic benefits to Sri Lanka's economy by way of maximum net foreign exchange income spreading of development through the country and creating significant employments for Sri Lankans.
4. A program of community education, consultation and active participation should be ensured (Sri Lanka Tourist Board, 2003)

Literature Review

Gunasinghe (2011) identified the vitality of Conservation of Biodiversity and Sustainability of the Tourism Industry of Sri Lanka using descriptive analysis with the support of the secondary sources. He found the future of the tourism of Sri Lanka and its contribution to uphold large number of people involving in tourism depends on the

conservation and wise management of her biodiversity, which is the most valuable asset of tourism of Sri Lanka. And also, he concluded that tourism should be recognized as a natural resource dependent industry and poorly managed tourism led to erosion of bio-diversity, which in turn would adversely affect the tourism industry.

Rangika T. Perera (2011) aimed to develop an empirical model to correctly identify pre-trip informational search behaviors of eco-travelers as well as define market segments based on traveler behavior relating to information search related to Sri Lanka's forest-based tourist destinations using structural modeling approach. He examined the causal relationships among information sources characteristics, costs of information search, information searching, information processing, pre-trip destination image, and travel-related search outcomes found in forest-based tourism. He empirically found that a significant mediation effect of information processing on information search behavior.

Daminda Sumanapala, et. al. (2012) studied about preliminary inquiry into the nature of ecotourism in Sri Lanka, to make it more effective, at the local level using the primary data. They found the significant problem faced by all these agencies such as the lack of knowledge on ecotourism and their aspects. And also they concluded that some agencies had good potential to do or assist the ecotourism practice but they had not proceeded beyond this stage.

Jürgen Breuste and Sunimal Jayathunga (2010) evaluated ecotourism activities in different biomes and comparison of representatives of biomes with ecotourism activities taking place using secondary sources. They found that the forest and wetland biomes were more vulnerable for the threat as these biomes were highly utilized for nature-based tourism in the country of Sri Lanka at present.

Kumari, et. al. (2010) integrated five indicator indices *viz*., wildlife distribution index (WDI), ecological value index (EVI), ecotourism attractiveness index (EAI), environmental resiliency index (ERI), ecotourism diversity index (EDI) to identify and prioritize the potential ecotourism sites in West District of Sikkim state in India using secondary sources. The analytical hierarchical process and geographic information system were effectively used by them for identification of the potential ecotourism sites (PES). They used the primary variables for generating various indices such as landform, elevation, land use/forest cover, vegetation diversity, density and endemism, wildlife (mainly birds and butterflies), tourism attraction features and the infrastructure facilities. Finally, they concluded that by adopting the ecosystem approach of ecotourism development, which could adopt tourism as a means to protect the environment and, in turn, sustain biodiversity.

Assenov and Ratnayake (2007) aimed to identify the policy challenges to ecotourism development and to propose improvements in the existing ecotourism policy, regulations and practices in Sri Lanka using primary and secondary sources. They found with the identification of the policy challenges and propose practical measures for policy formulation and implementation, and for positioning Sri Lanka as an ecotourism destination.

Rangana Sri Shalika Wadippuli Arachchi (2015) aimed to explore the construction of the meaning of eco resort concept by Sri

Lankan eco resort hoteliers; and investigate the differences between the Sri Lankan eco resort hoteliers' interpretation and the international standard using qualitative research approach constituting of interviews and observations and interpretive paradigm. They found through their analysis that the practice of the eco resort concept had been misused by the hoteliers in Sri Lanka. They had been unable to classify the eco tourists and identify the market and customer segment clearly.

Manu, et. al. (2012) studied to ascertain the livelihood enhancement opportunities brought in the wake of ecotourism development in Sirigu, Ghana using primary and secondary data. They concluded with the findings that Sirigu community-based ecotourism project had gained a considerable dint of success and also presented challenges for other community-based ecotourism destinations as it had a moderately strong infrastructural base and diversified tourism related income generating activities that were offered as a package to visitors from which revenue was derived to enhance the livelihood of the community members.

Sudusingha Liyanage Jothirathna Fernando1, Noresah Mohd Shariff (2013) examined and identified the potentiality of ecotourism development in the coastal wetlands in the southern coastal belt of Sri Lanka, and also identified the issues and challenges of the ecotourism development in coastal wetlands of Sri Lanka with the help of extensive and comprehensive literature reviews on ecotourism. They concluded that Even though Sri Lanka's ecotourism had many prospects it was confronted with several issues and challenges that threatened its sustainable and responsible growth. Undoubtedly, environmental issues were the most crucial of these challenges given the peculiarity of Sri Lanka's geographical location in a tsunami risk zone.

Rathnayake (2014) estimated ecotourism potential at Horton Plains (HPNP) and Kawdulla (KNP) National Parks in Sri Lanka applying two catalogues using Wilcoxon Signed rank Test (WSR) proposed by Wilcoxon (1945) was applied in comparing the ecotourism potential of two study sites and framework proposed by WTO/UNEP (1992). He concluded that the ecotourism potential ratings at HPNP and KNP were 83 and 79 out of 110 marks respectively and statistically proved that ecotourism potential at these both sites were not same. Although these two sites were totally different and located in two different climatic and topographical zones, there could be an inherent ecotourism potential. And also, that potential could be useful in recreational planning in these national parks.

Arachichi (2009) explored the perception of the meaning of eco resort concept by Sri Lankan eco resort hoteliers and investigated differences between the Sri Lankan eco resort hoteliers' interpretation and the international standard using qualitative approach. He found that the practice of eco resort concept had been misused by the hoteliers in Sri Lanka as pointed out by the tourism professionals. But, they were not purposefully doing it. It was due to lack of understanding of the concept.

Rangana Sri Shalika Wadippuli Arachchi, et. al. (2015) investigated differences between the Sri Lankan eco resort hoteliers' interpretation and international standards using qualitative approach with the support of Interpretive Paradigm. They found that eco tourists' needs of eco resorts had not been addressed properly by the eco resort hoteliers. When the main guests were

dissatisfied, there was a possibility of long term dropping of the business. Thus, what they were starting to experience currently. It had created dissatisfaction to eco tourists who were moving away from the Sri Lankan eco tourism market to other destinations.

Kanchana Wickramasinghe (2011) identified main problems and issues that demand policy level interventions in developing forest-based ecotourism in Sri Lanka, and identified the existing management approaches to forest-based ecotourism, followed by a review of strengths and weaknesses of each approach to provide key policy implications and recommendations in promoting ecotourism as a sustainable tool for forest conservation in Sri Lanka using comprehensive qualitative assessment. He found that the key constraints and challenges in adopting ecotourism for sustainable forest management as, lack of awareness and understanding on the concept, inadequate coordination, non-compliance to principles and poor interpretation services.

Objective of the Study

1. To statistically measure the potentiality of resources of Ecotourism on Gross Domestic Product of Sri Lanka
2. To direct the policy makers to appropriately indentify the resources of ecotourism contributing to Gross Domestic Product of Sri Lanka.

Methodology

From the literatures reviewed in this study, it is understood and identified that all the previous studies are analytical with the qualitative methodology. But, the quantitative approach is used in this study to fulfill the objectives of this study. Cultural Triangle Revenue, Zoological Garden Revenue, Botanical Garden Revenue, BMICH Revenue, Wildlife Park Revenue, Embarkation Tax Revenue, and Gross Domestic Product of Sri Lanka are the variables used in this study. Gross Domestic Product is the independent variable and the rest of the variables are independent. The annual data for the period from 1983 to 2013 of tourism sector in Sri Lanka are used in this study. The appropriate data used in this study are collected from Sri Lanka Tourism Development Authority (SLTDA) – Annual Statistical Report and Annual Report of Central Bank of Sri Lanka (CBSL) from the period of 1983 – 2013. The variables of CTR, ZGR, BGR, BMICHR, WPR, ETR and GDP are transformed into the Natural Logarithms to measure the percentage changes in the model. Since the ecotourism led-growth hypothesis is about contribution of tourism to the economic growth, real GDP is included to represent the economic growth. Accordingly, the model is fitted as follows:

$$Y = f(CTR, ZGR, BGR, BMICHR, WPR, ETR) \quad \text{(1)}$$

Where,

ln*RGDP* = Natural logarithm of Real Gross Domestic Product

ln*CTR* = Natural logarithm of cultural triangle revenue

lnZGR = Natural logarithm of zoological garden revenue

lnBGR = Natural logarithm of botanical garden revenue

ln*BMICHR* = Natural logarithm of BMICH revenue

ln*WPR* = Natural logarithm of wild park revenue

ln*ETR* = Natural logarithm of embarkation tax revenue

The error term with the conventional statistical prosperities. Coefficients of the model

There are three steps to analyze the data: the stationary property of each time series data of the variables is first tested using Augmented Dickey-Fuller in our methodology. Secondly cointergration test is performed to identify the existence of the long run relationship between the variables. Error correction mechanism and Granger Causality test are performed in the third stage to find the short run relationship and causal relationship between ecotourism and economic growth. The data analyses are executed with the use of E-Views, Minitab and Excel statistical software.

Empirical Results and Finings

Regression results: In this model, the value of R-squared (0.96/96.37 percent) is very high. The value is more than 60 percent. Inside variables/factors can influence the dependant variable by 96.37% and the dependant variable can be influenced only by 0.63% - not good fitted variables. Therefore, it means the model is nicely fitted or the data used in this model is nicely fitted. F-statistic and corresponding probability value is 106.44% and less than 5% respectively. As a result, there is no serial correlation. Therefore, all the variables are prominent to explain the model. It means all the independent variables can jointly influence the dependent variable. It is one of the very good sign of the model. ETR is only significant but others are not. It means other variables can't individually influence the dependent variable.

The estimated coefficient of BGR (Botanical Garden Revenue) indicates that 1% change of increase in BGR will increase RGDP only by around 0.12% and BMICHR will increase RGDP by 0.014%. 1% increase in CTR will increase RGDP by around 0.23% and ETR will increase RGDP by around 0.51. Thus, ETR is mostly significant in contributing for economic growth in Sri Lanka. In the meantime, the WPR and ZGR are inversely related with RGDP. As a result, those two components of ecotourism in Sri Lankan context are insignificant in determining economic growth in Sri Lanka.

Residual Test: Heteroscedasticity test

Corresponding probability value of Observed R-squared is 18.5% which is more than five percents. Thus, the residual is not heteroscedastic. Therefore it is homoscedastic. A critical assumption of the classical linear regression model is that the disturbances u_i (residual) have all the same variances, □□ .If this assumption is not satisfied, there is heteroscedasticiy. In the presence of heteroscedasticiy, the variances of OLS estimators are not provided by the usual OLS formulas. But if the usual OLs formulas are used, the *t* and *F* tests based on them can be highly misleading, resulting in erroneous conclusions.

Residual Normality test

Test of model adequacy should precede tests of hypothesis. Such test is known as normality test which is used to find out whether error tem follows the normal distribution. The normality test of residual is given in the following figure - 1:

Figure - 1

The corresponding P-value of Jarqure-Bera Statitstic is more than 5% (41.21%). Therefore, the residual of this model is normally distributed. It is also desirable.

Unit Root test (Augmented Dickey Fuller Test)

Under a univariate analysis, the first step in our methodology is to determine whether the variables are stationary or non-stationary. If a series is found as non-stationary, all the regression results are suffering from the problem of spurious regression. Therefore, the regression results may be leading to wrong conclusion and findings. It leads to meaningless and biased results. In case of Augmented Dickey Fuller Test, a problem of autocorrelation may be created. To tackle/deal with the problem of autocorrelation, Dickey Fuller developed a test called Augmented Dickey Fuller (ADF Unit Root test) Unit Root Test that are performed on both the level and the first and second differences of the variables (i.e., intercept only, trend and intercept, no trend and no intercept). It means three models such as the model with intercept only, the model with the trend and intercept and the model with no trend and intercept, are used and must be satisfied to come to a decision about Unit Root testing/Stationary or Non stationary (Wooldridge Jeffrey, 2006). The results of Augmented Dickey Fuller test are shown in the following table (Table - 1).

Table – 1: The results of ADF test

At the second difference, RGDP is perfectly stationary and BGR is partially stationary at none along with its level form and also at first difference along with none. BMICHR variable is stationary at First difference at all the level but it is partially stationary at level along with none. CTR is stationary at 2nd difference along all the level and ETR is partially stationary at all the levels. WPR is stationary at 2nd difference along with all the level forms and ZGR is stationary at its level form (at all the models). The variable WPR does not have any problem of spuriousness at its level form – L (0). And also the variable BMICHR does not face any problem of spuriousness at the first difference at all the conditions. As a result, all the variables can be used in this time series model at different conditions to avoid the problem of spuriousness/ meaninglessness/ senselessness.

Granger Causality Test

To describe the Granger Causality test, the often asked question macroeconomics is asked: Is it one variable causes other variable/s. Found cases can be distinguished under this test: 1. Unidirectional causality, 2. Converse unidirectional causality, 3. Feedback or bilateral causality, 4. Independence, and Multivariable causality (Damodar N. Gujarati, 2004). Vector Autoregression (VAR) model is used to test the multivariable causality. This model (Consisting of two variables) is estimated as follows:

$$RGDP1t = \alpha + \sum_{j=1}^{k} \beta\, jRGDPt - j + \sum_{j=1}^{k} \gamma j\, BMICHRt - j + u1t \ldots\ldots\ldots\ldots (3)$$

$$BMICHRt = \alpha' + \sum_{j=1}^{k} \theta\, jRGDPt - j + \sum_{j=1}^{k} \gamma j\, BMICHRt - j + u2t \ldots\ldots\ldots\ldots\ldots (4)$$

At optimal lag 2, BMICHR can cause RGDP and RGDP can cause BMICHR. Therefore, there is a two way causal relationship between the two variables. WPR can only cause RGDP not vice versa. Therefore, there is a unidirectional relationship between the variables. RGDP can only cause ZGR not vice versa. BGR can only cause BMICHR but not vice versa. There is a two way relationship between ETR and BMICHR and also between ZGR and BMICHR. ZGR can only cause CTR and ZGR can only cause ETR.

Johansson Cointegration test

To test the cointegration of the variables and long run relationship/ association ship of the model/variables, Johansson Cointegration test is used. The results of the Johansson Cointegration test are described in the following table (Table - 02).

Table – 02: Johanson Cointergaration test

From the Johanson Cointergation test, all the variables are having long run relationship and eventually moving together ensuring the close relationship between the variables. Trace test indicates that there is cointergration between the variables at 0.005 levels. It means there is one co-integrated equation at 5% level. And also the value of Maximum Eigen is greater than Critical value. Therefore, according to the Max-Eigen test, all the variables are connected with the long run associationship. Thus, VECA model can be run.

Conclusions

The main objectives of this study are to statistically measure the potentiality of resources of Ecotourism on Gross Domestic Product of Sri Lanka and to direct the policy makers to appropriately indentify the resources of ecotourism contributing to Gross Domestic Product of Sri Lanka. It is found from the statistical results that the elements of ecotourism such as BGR, BMICHR, CTR, and ETR are directly related with RGDP whereas WPR and ZGR are inversely connected to RGDP. The contribution of ETR compared to BGR, BMICHR and CTR is greater in influencing the dependent variable, RGDP in Sri Lankan context. But all these variables are statistically significant to determine economic growth in Sri Lanka in the long run. The results of the Granger Causality test show that there is a two way causal relationship between the RGDP and BMICHR. And also the causalities such unidirectional, bidirectional, converse unidirectional, multivariable and independent relationships are resulted from this study.

RECOMMENDATIONS

The policy makers of tourism industry in Sri Lanka should be vigilant about the elements of ecotourism which is paving the way to economic growth in the varied magnitude of their own. One of the significant elements in the ecotourism is ETR which is not found instrumental by the policy makers in the Sri Lankan context. As such, it should be taken into their account while designing policies in promoting ecotourism in Sri Lanka. Not only ETR but other significant variables also must be taken into their consideration. It is vividly evident that the inversely related variables

such as WPR, and ZGR with the dependent variable, RGDP should be seriously/immediately taken into account of their present ecological status.

Reference

Arachichi (2009), Perception of the Eco Tourism Concepts and its Practices in the Hotel Industry: The Case in Eco Resorts in Sri Lanka, Wayamba Journal of Management 3 (2), Available at: wjm.sljol.info/article/download/7442/5749/ (Accessed on 25th of November 2015).

Assenov. I and Ratnayake. P.U (2007), Towards Sustainable Ecotourism in Sri Lanka:The Role of the Tourism Management Organisaitons, Available at: http://www.conference.phuket.psu.ac.th/proceedings/psu_open_week_2008/data/tourism/4_8 (Accessed on 25th November 2015)

Daminda Sumanapala, Sarath Kotagama and Suranga Silva (2012), A preliminary inquiry in to constraints to the effective implementation of ecotourism practices at the local government, Proceedings of the International Forestry and Environment Symposium 2012 of the Department of Forestry and Environmental Science, University of Sri Jayewardenepura, Sri Lanka, Available at: http--journals.sjp.ac.lk-index.php-fesympo-article-viewFile-1021-259 (Accessed on 25th November 2015).

Damodar N. Gujarati, (2004), Basic Econometrics, New Delhi, Tata McGraw-Hill Publishing Company Limited, P: 697.

Gunasinghe, K.G.S. (2011), Conservation of Biodiversity and Sustainability of the Tourism Industry of Sri Lanka, Economic Review: Feb./March 2011, P:32, Available at: http--dl.nsf.ac.lk-bitstream-handle-1-14197-ER-36(11-12)_27.pdf-sequence-2 (Accessed on 25th November 2015)

Jürgen Breuste and Sunimal Jayathunga (2010), Representatives of nature conservation and ecotourism in different biomes of Sri Lanka, Hercynia N. F. 43 (2010): 257– 276, Available at: http--public.bibliothek.uni-halle.de-index.php-hercynia-article-viewFile-42-44. (Accessed on 25th November 2015).

Kanchana Wickramasinghe (2011), Ecotourism as a Tool for Sustainable Forest Management in Sri Lanka, Institute of Policy Studies of Sri Lanka (IPS), Available at: www.researchgate.net-file.PostFileLoader.html-id..assetKey... (Accessed on 25th November 2015)

Kumari. S, M.D. Behera & H.R. Tewari (2010), Identification of potential ecotourism sites in West District, Sikkim using geospatial tools, *Tropical Ecology* 51(1): 75-85, 2010, International Society for Tropical Ecology, ISSN 0564-3295, Available at: http--tropecol.com-pdf-open-PDF_51_1-Jour.09 (Accessed on 25th November 2015).

Manu, Isaac, Kuuder, Conrad-J.Wuleka (2012), Community-Based Ecotourism and Livelihood Enhancement in Sirigu, Ghana, International Journal of Humanities and Social Science Vol. 2 No. 18; October 2012, Available at: http--www.ijhssnet.com-journals-Vol_2_No_18_October_2012-12

Rangana Sri Shalika Wadippuli Arachchi, Mohd Shukrı AB. YAJID, AND Ali Khatibi (2015), A Comparison of Eco-Tourism Practices of Sri Lankan Hoteliers' with Reference to the International, Tourism, Leisure and Global Change, volume 2 (2015), p.TOC- 155, Available at:

www.igutourism.com-article-download-14595-9437 (Accessed on 25th of November 2015)

Rangana Sri Shalika Wadippuli Arachchi (2015), Ecotourism Practices in Sri Lankan Eco Resorts: A Supplier Perspective, Journal of Tourism and Hospitality Management, October 2015, Vol. 3, No. 9-10, 169-180, Available at: http- www.davidpublisher.org-Public-uploads-Contribute-55dc2595b244b (Accessed on 25th of November 2015).

Rangika T. Perera (2011), Effects of Ecotourism Per -Purchase and external INFORMATION SEARCH BEHAVIORS AND Strategies ON Forest-Based Ecotourism Travel Decisions in Sri Lanka, Dissertation of PhD, Available at: http--etd.lsu.edu-docs-available-etd-04252011-172401-unrestricted-Rangika_diss.pdf (Accessed on 25th of November 2015).

Rathnayake, RMW (2014), estimating Ecotourism Potential at Horton Plains and Kawdulla National Parks in Sri Lanka, Journal of the Department of Wildlife Conservation 2014-2:15-28, Available at: journals.dwc.gov.lk-index.php-wildlanka-article-download-20-8 (Accessed on 25th of November 2015).

SLTDA (2013), Annual Statistical Report, Research and International Division

Sri Lanka Tourist Board (2003), Ecotourism development strategy of Sri Lanka, at: http--dl.nsf.ac.lk-bitstream-handle-1-14197-ER-36(11-12)_27.pdf-sequence-2 (Accessed on 25th November 2015)

Sudusingha Liyanage Jothirathna Fernando1, Noresah Mohd Shariff (2013), Wetland ecotourism in Sri Lanka: Issues and challenges, GEOGRAFIA OnlineTM Malaysian Journal of Society and Space 9 issue 4 (99 - 105), 2013, ISSN 2180-2491, Available at: http--www.ukm.my-geografia-images-upload-10ok.geografia-okt2013-fernando&noresah-edam (Accessed on 25th of November 23015)

Figure 1

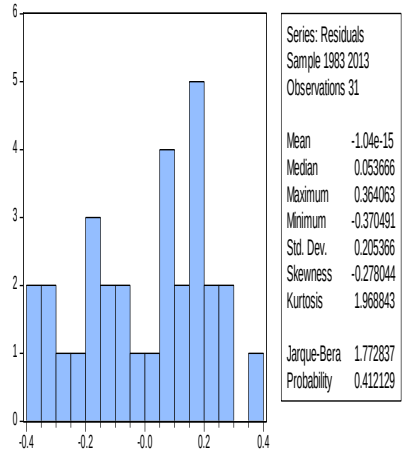

Table 1.

Variable	ADF test	Intercept/ constant		Trend and Intercept		None/Neither intercept nor trend		Overall Decision
		Test statistic value	Test Critical Value (5%)	Test statistic value	Test Critical Value (5%)	Test statistic value	Test Critical Value (5%)	
RGDP	Data Level	4.71	2.96	1.09	3.56	9.62	1.95	Can't not be decided
	First Difference	2.96	2.96	5.31	3.57	0.36	1.95	Can't not be decided
	2nd Difference	8.55	2.97	8.38	3.58	8.59	1.95	Stationary
BGR	Data Level	1.29	2.99	3.49	3.61	3.48	1.95	Can't be decided
	First Difference	1.75	2.99	0.80	3.62	2.07	1.95	Can't be decided
	2nd Difference	1.98	2.99	2.53	3.62	1.76	1.95	Non-stationary
BMICHR	Data Level	2.22	2.96	0.28	3.56	3.47	1.95	Can't be decided
	First Difference	4.04	2.96	5.07	3.57	3.47	1.95	Stationary
CTR	Data Level	4.06	2.96	2.28	3.56	5.01	1.95	Can't be decided
	First Difference	2.50	2.96	3.30	3.57	0.29	1.95	Non-stationary
	2nd Difference	9.15	2.97	9.29	3.58	9.13	1.95	Stationary
ETR	Data Level	3.07	2.99	0.65	3.56	4.36	1.95	Can't be decided
	First Difference	2.22	2.96	3.76	3.61	0.93	1.95	

	2nd Difference	4.29	3.00	4.01	3.63	1.59	1.95	Can't be decided Can't be decided
WPR	Data Level First Difference 2nd Difference	4.00 2.60 7.51	2.96 2.96 2.97	2.31 3.35 5.76	3.56 3.57 3.58	7.54 7.54 7.54	1.95 1.95 1.95.	Can't be decided Can't be decided Stationary
ZGR	Data Level	5.28	2.99	5.37	3.62	5.23	1.95	Stationary

Table 2

Dependent Variable: LOG(RGDP)
Method: Least Squares

Date: 12/09/15 Time: 22:39
Sample: 1983 2013
Included observations: 31

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	5.295698	1.925296	2.750589	0.0111
LOG(BGR)	0.123679	0.222057	0.556967	0.5827
LOG(BMICHR)	0.014969	0.075489	0.198294	0.8445
LOG(CTR)	0.230096	0.210937	1.090827	0.2862
LOG(ETR)	0.517923	0.207450	2.496617	0.0198
LOG(WPR)	-0.063729	0.035114	-1.814898	0.0821
LOG(ZGR)	-0.000433	0.152795	-0.002837	0.9978

R-squared	0.963781	Mean dependent var	13.54815
Adjusted R-squared	0.954727	S.D. dependent var	1.079106
S.E. of regression	0.229607	Akaike info criterion	0.090781
Sum squared resid	1.265261	Schwarz criterion	0.414585
Log likelihood	5.592892	Hannan-Quinn criter.	0.196333
F-statistic	106.4408	Durbin-Watson stat	0.636550
Prob(F-statistic)	0.000000		