THE RELATIONSHIP BETWEEN GEOMORPHOLOGY OF THE WATERFALL AND POTENTIALITY OF ECOTOURISM

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Abstract - The Duvili Ella waterfall lies near the foothills of Sabaragamuwa and it comes under the reserve of the semi arid forest area, including a variety of medicinal plants and natural beauty of the tourist destination in Sri Lanka. In considering the Sri Lankan geomorphology, it is obviously seen that there is a potentiality for tourism close by waterfalls. Among the formation of waterfalls, Duvili Ella can be considered as a rare formation. A National Ecotourism Policy Plan is being formulated to promote Sri Lanka as a unique ecotourism destination. Sri Lanka Tourism Development Authority hopes to gain sustainable profitability through natural, cultural and human resources, and to the optimum visitor experiences. The proper ecotourism management plan can develop the socioeconomic and infrastructure facilities of the host country on the basis of the regional natural resources. . In this study, focuses the resources of the natural environment based on the geomorphology of the waterfalls in the vicinity of the Duvili Ella waterfall at Kaltota in Ratnapura District. It is quite clear that this is a new profile which has been investigated with the potentiality of developing such a national heritage. This paper explores the identifications of potential resources to develop the nature based tourism destination at the Duvily Ella waterfall in Rathnapura District in Sri Lanka. The methodology is based on the field experiment, observations, focus group discussions and spatial changes and resources potentiality were analyzed using remote sensing and GIS techniques. The Duvily Ella waterfall and the surrounding environment have tremendous potential resources for the development of Eco based tourism in Sri Lanka, as a consequence of physical changes of the natural environment.

Keyword - Waterfall, Geomorphology, Ecotourism, Resources, GIS

I. INTRODUCTION

Ecotourism involves visiting natural areas with the objectives of learning, studying or participating in activities that do not bring negative effects to the environment; whilst protecting and empowering the local community socially and economically (Cristina, 2004). This provides local economic benefits to the host country such as, employment opportunities, infrastructural improvement, rural and urban productions and natural resource for tourism activities. Ecotourism brings closer to rural local market due to low cost mechanisms (Healy, 1994) and can provide foreign exchange and economic rewards for the preservation of natural systems and socioeconomic development of tourism destination. Ecotourism has a strong interrelationship with sustainable tourism, which considers the environmental friendly economic activities (Bunruamkaew& Murayama, 2011; Gray, 2003). Evaluation of ecotourism is a proper way to develop the field of tourism in a given region with conservation of the environment and concern of economic factors (Ryngnga, 2008).

In this context, ecotourism development has become a main research stream as a strategy for sustainable development in the tourism field. Researchers demonstrate that the development of tourism requires a paradigm shift in the development of ecotourism based on environmental friendly activities (Bukley, 2003; Mobaraki et al., 2014; Kumari et al., 2010; Bunruamkaew& Murayama, 2011; Weaver, 2001). Therefore, a study of the best potential location for any new waterfall ecotourism seems to demand.

Duvili Ella is a naturally Evoluted nature based system with 40 meter height beautiful waterfalls located close to Kaltota, Balangoda Sri Lanka. It has been identified as one of the most unusual waterfalls in Sri Lanka due to the physical formation of early geological history. For, 'Duwili' in the Sinhala language is Ella, and Dust means waterfall. Due to the bulk of water of waterfall is falling down through the deep slope the dust like drops of water emanating from the spray is the origin of the name Duwili Elle. This paper explores the identifications of potential resources to develop the nature based tourism destination at the Duvily Ella waterfall in Rathnapura District in Sri Lanka.

II. RESEARCH METHODOLOGY

This study used two methods as ground based direct observation and questionnaire analysis used to find the potentiality of the waterfall for the development of ecotourism. Data used in this study can be divided into two ways; the spatial data and the non spatial data. Field data were collected through face to face interview with an expert in this field and households who live near to the waterfall using the questionnaire as a research instrument. In order to determine the potential of ecotourism, community based studies were carried out involving the people in the surrounding area of this waterfall. The sample of the population was drawn to the best representation for more generalized results. A total of 112 respondents was selected using random sampling and using questionnaires designed to access, view and situations experienced in the local and foreign community. Out of the 112 respondents, 58 or 52% are from Kalthota area, 42 or 37.5% of Balangoda

area and 18 or 16% are from foreign countries. In addition, other related primary data sources form hotel owners were used to analyze the non-spatial data.

III. RESULTS AND FINDINGS

This study was based on the basic fundamentals of environmental sustainability approach for the development of ecotourism sustainability in the partial nature based wetlands. This approach can be used to enhance the sustainability of nature based waterfalls with more responsibilities (Weaver, 2008). Focusing on this approach Lawton and Weaver (2009) pointed out five main characteristics; markets (local products, human resources and road network), attractions (aesthetic [biodiversity]), cultural values, accommodation (infrastructure) and economic status (foreign and local exchange and benefits for employees) should be given with a more significant in the ecotourism processes. This research design was about prioritizing with hydrological, geological, biological, nature based and socioeconomic sectors of the study area.

Duwili Ella is unique in many respects. Unique especially in the captivating surroundings and the unusually big rock pool. The roaring sound made by the falling water absolutely adds an appealing dimension to this uninhabited, inhospitable region of jungle and the chill of the floating water droplets create strange sensations. The high rock platform standing overlooked the waterfall below with dark, deep pool of water surrounded by the rock walls. It could definitely have involved the high possibility of danger had it not been for the fence fixed along the precipitous rock walls rising above the pool below.

There are 356 families in the study area and agriculture is the main occupation. About 35% families have been living in the study area since more than 30 years. About 56% of respondents direct and indirect employ the tourism sector with respect to the Duvili Ella waterfall. They emphasized that like any other waterfall, Doowili Ella too bears popular myths which blend the waterfall with supernatural elements and components difficult or impossible to understand. Only a waterfall which has evolved by the sudden sink of geological phenomena through the Walave River in Sri Lanka in the early geological period. This is Unique especially in the captivating surroundings and the unusually big rock pool. The pool has made after sinking of both sided deep sloping rock walls (Figure 1).

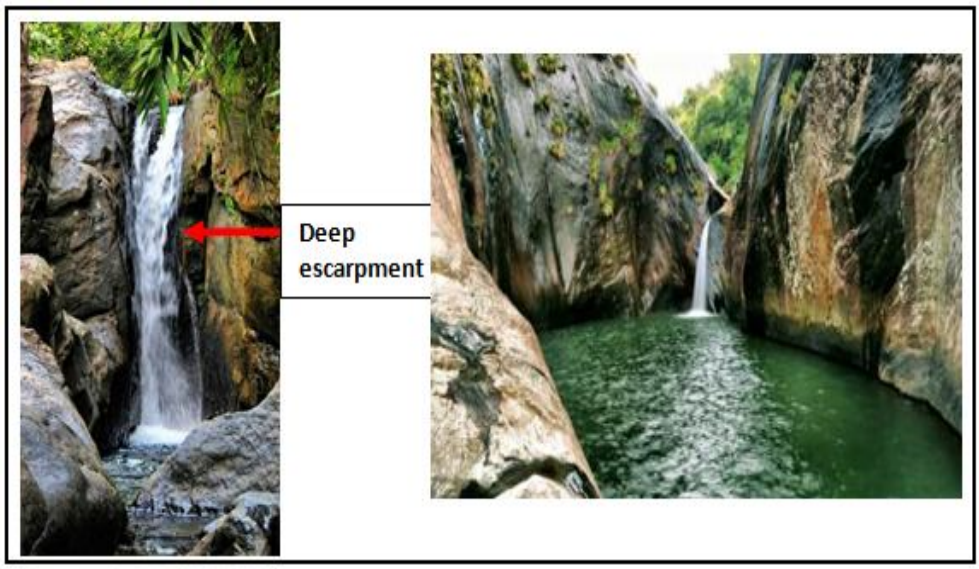


Figure 1 – Deep escarpment and water pool at the waterfall

This study area situated between central high land and southern wall. The annual rainfall pattern of the study area is more prone to foster the hydrological potentiality. Furthermore, upper zone of Walawe river basins include in the wet zone of Sri Lanka it can be protected this hydrological potentiality within the river basin. When receiving highest precipitation by southwest monsoon also so receiving the highest amount of water capacity to Major River channel Out of fourteen foreigners of the foreign respondents revealed that they would like to stay at the waterfall due to the most fantastic site and can suffer a misty cascade of droplets in a sheer veil shimmering light. Different types of land can be used to sustain products and are suitable for a particular purpose of

ecotourism development (Ruslan & Noresah, 2004). Sustainable land use is that which meets the needs of the present while conserving resources for future generations at the same time. Vegetation and hydrological factors are obviously affected in determining the suitable site of the waterfall. Balangoda – Kalthota main road and is accessible through a tarred way running across a thick jungle profusely scattered with some of the rarest trees and bushes endemic to Sri Lanka. While walking through

the domain of wilderness cut across from the tarred road, can find an alien land with no sign even a human settlement or sound except for the melancholic call of a peacock or the piercing screech of cicadas.

CONCLUSIONS AND IMPLICATIONS

The findings reflect that the huge potential for ecotourism of the waterfall as a new tourism market. Expectations of ecotourists' are compatible with the potential existing in present Sri Lanka. Initiating a proper management plan in order to remark Sri Lanka as an ecotourism destination with involving waterfalls will have a direct reflection on developing ecotourism in Sri Lanka. This site can be established as an ecotourism travel network related to surrounding tourism destinations such as, Wawulpane limestone hole, Balangoda, Udawalawa national park, Bundala Ramsar wetland, Rakawa, Kalamatiya, Malala lagoon area, Yala wildlife sanctuary. Moreover, awareness program should be organized and implemented to develop ecotourism activities at the study area. According to the entire related factors of site suitability, selection of this destination, hydrology, geology and biological factors are obviously affected to the development of ecotourism.

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