



***PERCEPTIONS ON RIVER CONSERVATION ISSUES IN
CAMERON HIGHLANDS***

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CAMERON HIGHLANDS**



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**A Project Report Submitted in Partial Fulfillment of the Requirements
for the Degree of Bachelor of Forestry Science in the
Faculty of Forestry, Universiti Putra Malaysia**

DEDICATION

For my beloved family:

Abdul Aziz Bin Badri and Siti Mariam Binti Rajab

Also my siblings; Azrie, Azrieni, and Azrien

To all my friends,

Interviewer and residents I had done my interview

Thank you for your encouragements supports

And the sacrifice that you have given

Thank you for everything

May Allah Bless All of

ABSTRACT

The rapid and intense growth of tourism, urban development and agriculture in Cameron Highlands contributed to river pollutions in that area. Apart from environmental and economic factors, the social aspect is also essential to be considered in the decision-making process of conservation. Study of perceptions on river conservation issues in Cameron Highlands provides information of public knowledge level towards river pollution and level of concerns towards river conservation measures in Cameron Highlands. This study used Spearman correlation analysis as a method to determine the association between perceptions on river conservation issues in Cameron Highlands with specific socio-demographic. Data were obtained using a closed-ended questionnaire through an interview. The respondents were asked on their strength of agreement regarding on river pollution issue and conservation measures of the river in Cameron Highlands. About 123 respondents were involved in this study. This study found that the factor of gender, age, and educational level is significant to perceptions of river conservation issues. The approach in determining perception on river conservation measures in Cameron Highlands helps provide some guidelines and obtain extra information for decision-making process especially related to river pollution issue and river conservation in Cameron Highlands.

ABSTRAK

Pertumbuhan pesat pelancongan, pembangunan bandar dan pertanian di Cameron Highlands menyumbang kepada pencemaran sungai. Selain daripada faktor alam sekitar dan ekonomi, aspek sosial juga penting untuk dipertimbangkan dalam proses membuat keputusan berkaitan pemuliharaan. Kajian persepsi mengenai langkah pemuliharaan sungai di Cameron Highlands memberikan maklumat berkaitan tahap pengetahuan masyarakat terhadap pencemaran sungai dan tahap keprihatinan terhadap langkah pemuliharaan sungai di Cameron Highlands. Kajian ini menggunakan analisis korelasi Spearman sebagai kaedah untuk menentukan hubungan antara persepsi terhadap langkah pemuliharaan sungai di Cameron Highlands dengan sosio-demografi tertentu. Data diperoleh menggunakan soal selidik tertutup melalui temuduga. Responden telah ditanya tentang kekuatan persetujuan mereka mengenai isu pencemaran sungai dan langkah pemuliharaan sungai di Cameron Highlands. Kira-kira 123 responden terlibat dalam kajian ini. Kajian ini mendapati bahawa faktor jantina, umur, dan tahap pendidikan adalah berkait dengan persepsi mengenai langkah pemuliharaan sungai. Pendekatan dalam menentukan persepsi mengenai langkah pemuliharaan sungai di Cameron Highlands membantu menyediakan beberapa panduan dan mendapatkan maklumat tambahan untuk proses membuat keputusan terutama berkaitan dengan isu pencemaran sungai dan pemuliharaan sungai di Cameron Highlands.

APPROVAL SHEETS

I certify that this research project report entitled “Perceptions on River Conservation Issues in Cameron Highlands” by Nurazriena Binti Abdul Aziz has been examined and approved as partial fulfilment of the requirements for the Degree of Bachelor of Forestry Science in the Faculty of Forestry, Universiti Putra Malaysia.

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CHAPTER 1

INTRODUCTION

1.1 Why River is Important to Human Livelihood?

River defined as a body of water flowing by gravity, natural watercourse containing water at least part of the year and in hydrology, the term is generally applied to the water flowing in a natural channel as distinct from a canal (The State of Water, 2018). The river drainage is about 75% of the entire surface of the earth and plays a role in the carrying of water and nutrients into an area (Mandy Barrow, 2013).

A river also has a vital role in the water cycle process. Hence, the river affects human life where it relates to economic, social, and the environment that people need. A river is a habitat for human food sources that consists of marine life such as fish and shrimp. The farming activity also requires water sources from the river as a source of drinking for livestock and even for agricultural activities. Nowadays, humans embrace the river as rejuvenation that the river provides for rest and also recreation activities.

Most importantly, regarding human health, in which human needs sufficient and clean water to survive. Humans use water as daily necessities such as drinks, baths, and cleaning. Community extracts 5.8 million litres of water per day for drinking supply (World Academy of Science, Engineering and Technology, 2009). Thus, rivers play a significant role in human livelihood.

1.2 River Quality in Cameron Highlands

Cameron Highlands is a district of Pahang, Malaysia that well-known with agricultural activities such as tea plantation, strawberry cultivation and vegetable farming. The total area of the Cameron Highlands is about 71, 218 ha and covers three mukim (districts) consisting of Ringlet, Tanah Rata, and Ulu Telom. Termeer et al. (2005) found that Cameron Highlands has eight rivers and the major rivers in the area are Bertam River, Telom River, and Lemoi River, with 123 tributaries.

Initially, rivers in Cameron Highlands can be categorised as fast-flowing, cool and clear water with high oxygen contents and supporting sensitive aquatic invertebrates. But, the water quality of rivers in Cameron Highlands has deteriorated significantly due to land clearing for agriculture, excessive usage of pesticides and fertilisers as well as construction activities in rapidly developing urban areas.

1.3 Problem Statements

The rapid and intense growth of tourism, urban development and agriculture in Cameron Highlands contributed to river pollutions in that area. The previous study states that most of the environment in Europe is polluted due to the sizeable unsustainable development since the early 1950s and Malaysia is now facing the same situation. Many local newspapers and media have begun to reveal on the environmental issues and problems that are being faced in the Cameron Highlands.

Utusan Malaysia (2015) discloses the issue of some pesticides banned for use in Malaysia has been found in the river and tap water in Cameron Highlands. Besides that, the Mstar newspaper on 11 December 2012 also featured issues relating to the extensive land clearing in the area of Sg. Menson, Batu 49, Lembah Biru, and Kuala Terla. Some land clearing activities occur on slopes that exceed the 30-degree gradient. This resulted in landslides and soil erosion which caused the drainage system to be blocked and river water abundant. Van der Ent also states that 30% of the water catchment area Bertam (jungle) is used for agriculture and urban development. River-ecology disturbance from urban and agriculture development contribute to an overall decrease in the integrity of Bertam river. The development of the residential development tourism sector also contributes to river pollution in Cameron Highlands. The quality of rivers in Cameron Highlands has become worse because of litter pollution. Rubbish is increasing along with development. Therefore, tourism, agriculture and urban development are the factors that led to increment in river pollution.

1.4 Objectives and Justifications

This study aims to identify public perceptions of river conservation issues in Cameron Highlands. Stephen Robbins defined perception as a process by which individuals organise and interpret their sensory impressions to give meaning to their environment. Research on public perception towards environmental issues has examined the value bases for environmental consideration as well as determine the significant socio-demographic correlation. Public response to the pro-environmental issue is dependent on socio-demographic such as age and level of education.

Based on the issue of river quality in Cameron Highlands, a study to determine the level of public perception on the issue and to provide information about the level of concern for suitable conservation measures to apply in protecting rivers in Cameron Highlands should be implemented. Rapid development with just little control and minimal monitoring will be harmed and caused the disappearance of Cameron Highlands natural environment (Ismail et al., 2012). Development cannot be stopped, so sustainable development needs to be addressed to handle this problem. Sustainable management needs to have considerations towards economic environmental and social aspects (Asif et al., 2011). One of the social aspects means how they respond towards this issue regarding awareness and concern.

Due to the intense development of tourism, agriculture and urban development in the Cameron Highlands, it is difficult to carry out conservation measure without the involvement of society to overcome the increment of river pollution. Hence, the level of public perception on this issue should be determined and examined the conservation measures that perceived by the public. Therefore, the objectives of this study are: (i) to determine the knowledge level of the public in regards to river conservation issues in Cameron Highlands, (ii) to determine the level of concern of the public towards river conservation measures in Cameron Highlands and (iii) to identify the association between perceptions on river conservation issues in Cameron Highlands with specific socio-demographic.

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