



**THE ROLES OF BOTANICAL GARDEN IN
EDUCATING COMMUNITIES TOWARD
ENVIRONMENTAL CONSERVATION**

BY

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ABSTRACT

This dissertation discusses the roles of Kepong Botanical Garden in educating communities towards conserving the environment. Modern lifestyle has created a community that is disconnected from the natural environment wherein more time is spent indoors. The disconnection has an adverse impact towards the community since people have become unaware of the intrinsic value of nature. As a result, people are less connected to the nature and become less responsible in protecting the environment. Thus, this research aims to investigate the potential of public open space to develop communities' attitudes, behaviours and skills necessary for environmental conservation with the research setting in Kepong Botanical Garden. A total of 110 questionnaire forms were distributed to the visitors of Kepong Botanical Garden (KBG) to identify the practice of KBG in developing environmental awareness. The findings demonstrate that most visitors have better environmental awareness and interest after visiting KBG. According to the data findings, visits to KBG have affected visitors' understanding of the environment, especially the diversity of plant kingdom. More than 50% of the respondents had positive responses on conservation practices that they are willing to contribute towards the care of the environment. However, information about environmental issues in local and global contexts is lacking. This shows when some of the respondents did not express better attitudes and behaviours towards the environment. The findings also demonstrate that KBG is ineffective in conveying information on environmental conservation to the visitors of KBG. It is recommended that a few improvements can be made in KBG to increase its value in educating the community, such as improving weekly or monthly programmes like teachers training programme, kids' play programme or nature cares as target group programmes. These programmes will help the KBG to increase its connection with the local community and the community with the environment which directly will help solve the research problems and issues mentioned in Chapter One. In conclusion, the environmental education in KBG can be improved by means of identification of conservation message as well as environmental issues to be delivered to the visitors using reachable educational approaches. It is hoped that this study contributes to the knowledge and value in sustainable built environment and liveable communities' planning and design.

ملخص البحث

تناقش هذه الأطروحة أهمية كفوغ الحديقة النباتية في تثقيف المجتمعات المحلية نحو الحفاظ على البيئة. وقد خلق نمط الحياة الحديثة على المجتمع أن يتم قطع من البيئة الطبيعية حيث يتم إنفاق المزيد من الوقت في الداخل . انقطاع له تأثير سلبي تجاه المجتمع لأن الناس أصبحت على علم القيمة الجوهرية للطبيعة. ونتيجة لذلك ، والناس أقل ارتباطا طبيعة و تصبح أقل مسؤولية في حماية البيئة . وبالتالي ، يهدف هذا البحث إلى تحقيق إمكانيات الفضاء المفتوح العامة لتطوير المواقف و السلوكيات المجتمعات والمهارات اللازمة لل حفاظ على البيئة مع الحديقة النباتية . وتم توزيع ما مجموعه 110 كفوغ الحديقة النباتية إعداد البحوث في كفوغ الحديقة النباتية للتعرف على ممارسة كفوغ الحديقة النباتية استمارة استبيان للزوار من في تطوير الوعي البيئي . تثبت هذه النتائج أن معظم زوار يكون أفضل الوعي البيئي كفوغ وفقا لنتائج البيانات، أثرت زيارات ل . كفوغ الحديقة النباتية والاهتمام بعد زيارة فهم الضيف البيئة ، وخاصة تنوع المملكة النباتية . إظهار النتائج أيضا أن الحديقة النباتية كفوغ غير فعال في نقل المعلومات على الحفاظ على البيئة لزوار كفوغ الحديقة النباتية كفوغ فمن المستحسن أن عدد قليل من التحسينات التي يمكن إدخالها في . الحديقة النباتية لزيادة قيمته في تثقيف المجتمع ، مثل تحسين برامج أسبوعية أو شهرية مثل الحديقة النباتية برنامج التدريب المعلمين ، برنامج لعب الاطفال أو الطبيعة كما يهتم برامج المجموعة لزيادة ارتباطه مع المجتمع المحلي كفوغ الحديقة النباتية المستهدفة. و هذه البرامج تساعد والمجتمع مع البيئة التي سوف تساعد مباشرة في حل مشاكل البحث و القضايا المذكورة في يمكن تحسينها عن طريق كفوغ الحديقة النباتية الفصل الأول . في الختام ، و التعليم البيئي في تحديد الرسالة الحفظ وكذلك القضايا البيئية ليتم تسليمها للزوار باستخدام أساليب تعليمية قابلة للوصول. من المؤمل أن تسهم هذه الدراسة إلى معرفة وقيمة في البيئة المبنية المستدامة والتخطيط مجتمعات يمكن العيش فيها والتصميم

APPROVAL PAGE

I certify that I have supervised and read this study and that in my opinion, it conforms to acceptable standards of scholarly presentation and is fully adequate, in scope and quality, as a thesis for the degree of Master of Urban and Regional Planning.

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DECLARATION

I hereby declare that this dissertation is the result of my own investigations, except where otherwise stated. I also declare that it has not been previously or concurrently submitted as a whole for any other degrees at IIUM or other institutions.

Siti Fatimah Zahra' binti Abdul Kadir

Signature Date

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This thesis is dedicated to my parents;

Mak & Ayah,

Who loves me and supports me all this while.

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CHAPTER ONE

INTRODUCTION

1.1 INTRODUCTION

Botanical garden is well-known as a living museum of plant where assembles diverse species of plants that are documented for the purpose of scientific research, conservation, display and education. All over the world, botanical garden is attracting numbers of domestic and international tourist as well as local regular visitor (Connell and Meyer, 2004). Internationally, Botanic Garden Conservation International (BGCI) estimating approximately 250 million visits to botanic garden per year. Considering the numbers, botanical garden is seen as an appropriate set that have a high potential to communicate environmental awareness to the community. Corresponding to the Target 14 of the Global Strategy for Plant Conservation (GSPC) under the Convention of Biological Diversity (2009) which focuses on education and public understanding of the importance of plant diversity and botanic gardens are committed to promoting education and awareness about plant diversity and the need for its conservation. Forest Research Institute Malaysia (FRIM) collectively in the mission to communicate the message through the development of Kepong Botanical Garden (KBG) which will be the center for living plant collections mainly for Malaysian plants and will be facilitated with horticulture and landscaping education, research and development.

This research centres around the roles of botanical garden in educating the communities to conserve the environment with the research setting in Kepong Botanical Garden (KBG). This chapter discusses the foundation of the research; background of study, problem statement, issues, research question, research aim and

objectives, scopes of study, study limitation, significance of study and structure of the research. These items are very essential in developing systematic understanding for the whole research.

1.2 BACKGROUND OF STUDY

The idea of botanical garden has been conceived since the 1970s. The general role of botanic gardens in plant conservation has been widely accepted since then (Oldfield 2009). This is seen as potential of botanical garden as to have a social role towards instilling environmental awareness within the community.

Founded in the year 1929, Forest Research Institute of Malaysia (FRIM) is one of the leading institutions in tropical forestry research both locally and abroad. Alongside with its mission to achieve excellence in scientific research, development and forestry services, one of the objectives is to generate scientific knowledge for the understanding, management, conservation and use of forest resources.

Kepong Botanical Garden (KBG) is a part of FRIM which used to be a non-descript former tin mine with secondary forest, Acacia trees and abandoned ponds. Recently, the KBG site which is about two hectares area of land is developed to be the centre of living plants collection which are mainly for tropical plants. As a centre of ex-situ conservation, wild plants are systematically collected and planted for display. With a vision of making KBG into a world class botanical garden, this garden is an opportunity for botanist, horticulturist, landscape architect, and other related fields to conduct research and have potential as an education centre for environmental conservation.

Literature which has been reviewed have been identified several issues and problems relating to the social role of botanical garden towards the community education on the environment conservation.

1.3 PROBLEMS STATEMENT

Modern lifestyle has created a community that is disconnected from the natural environment wherein more time is spent indoor. Study by Evans and McCoy (1998) estimates that people spends more than 90% of their lives within a building. The disconnection have an adverse impact towards the community since people become unaware of the intrinsic value of nature. As a result, people are less connected to the nature and become less responsible in protecting the environment. This problem are associated with botanical garden and community involvement in environmental conservation. The community become disconnected from the natural world, botanical garden is in need of broader audience engagement to re-connecting people with the world of plants, educating them and showing them models for sustainable living. Miller, (2006) stated that complete isolation from real physical and biological world affecting the lives of millions of other human beings and habitat of thousand of plants and animal species due to the absence of ethical and spiritual sensitivity because the communities are disconnected from the natural world.

Education for sustainability (Efs) is the main agenda to resolve environmental problems whilst botanical garden have much to offer Efs and an ideal place to work with the local communities. However much of botanical garden be unsuccessful in conveying the environmental education. Research by Willison (1997) claims that most of botanic garden practice weak Efs. Very few of botanical garden have reached their full potential as significant sites for addressing social and environmental changes.

Dodd and Jones (2010) argued that the message on environmental issues are not properly conveyed because botanical garden are seen as being relaxing places to go and enjoy, a perception which many institutions would not like to disturb.

Jamilah, et al (2011) rise up the issues of the Malaysian communities' attitudes and behaviour as well as their knowledge on environmental issues and their preservation effort. The findings of the research shows the lack of knowledge on environmental issues among the community of Malaysia. The research also states that the attitudes and behaviour toward environment and its preservation is currently low among the community despite of the environmental degradation face by this country nowadays.

1.4 RESEARCH QUESTIONS

The research is very crucial and the aim needs to be achieved with the support by objectives. Therefore, research question had been developed in order to rise up the issues and to discover the impossible solution and alternative in order to cater this issue. Hence, the question that to be solved out are:

- How KBG educates the community about the environmental awareness?
- What are community perception on the role of botanical garden to communicate their environmental awareness?
- What is the community's attitudes and behavior towards the environment?

1.5 AIM AND OBJECTIVES

The aim of this research is to investigate how the communities perceive the significance of Kepong Botanical Garden (KBG) in educating the communities towards conserving the environment.

In order to achieve the aim of this research, there are two objectives have been developed. The objectives are very essential to strengthen and support the aim.

Thus, the objectives are:

- i) to analyze how KBG educates the community about the environmental awareness.
- ii) to investigate the community perception on the role of botanical garden to communicate their environmental awareness
- iii) to observe the community's attitudes and behavior towards the environment

1.6 SCOPES OF STUDY

The research will take place in Kepong Botanical Garden (KBG) which is in FRIM Kepong. Objectives and scopes of study are rectified as follow:

Objective 1:

To analyze how KBG educates the community about the environmental awareness.

Scope 1:

To investigate whether or not the activities and programs in KBG contributes to increase the environmental awareness of the community.

Objective 2:

To investigate the community perception on the role of botanical garden to communicate their environmental awareness.

Scope 2:

To investigate how the visitors of KBG perceive the role of botanical garden in helping them to develop their environmental awareness.

Objective 3:

To observe the community's attitudes and behavior towards the environment

Scope 3:

To observe how the community perceive the environmental issues and their willingness to care for environment.

1.7 STUDY LIMITATION

Conceptually, the research is limited to only deal with the roles of botanical garden in educating the communities towards conserving the environment at the study area which is Kepong Botanical Garden. Therefore other role of botanical garden such as in economic, cultural or ecology will not be considered or discussed in this study.

There are also other limitation of the research such as the time and financial constraints. The time allocated for the research is one semester only which means only a small scope of study is discovered. Besides, the budget is only for a mini research project that covering only on basic elements in environmental planning field. Due to time and financial constraint also, only 110 respondents were questioned on the survey.

In terms of limitation of respondents, there are two types of visitors that became the respondents in the research which are formal and informal visitors. The type of visitors have different perception as they are experiencing different experience in KBG. Moreover, is quite tough to ensure the respondent are answering from their

own perspective due to the reason they might be affected psychologically by the right or positive answer provided.

1.8 SIGNIFICANCE OF STUDY

Currently, research conducted in Malaysia on botanical gardens is still in its infancy stage. This means, this research will give a lot of contribution in the field of environmental planning study.

The research will help academicians by contributing to the knowledge and value in environmental education which is focused on biodiversity and environmental conservation.

Moreover, the research also contributes to the field of urban planning and design by providing information on the improvement of neighbourhood quality through planting and green landscaping as well as creating cultural centres and places of spirituality.

The thesis will assist the policy and decision makers/stakeholders to create policies that lead to a more conducive educational environment and biodiversity conservation.

The community will reap benefits from the findings of the research to have more satisfaction with the practices of KBG to communicate environmental awareness among the community.

Finally, this research will support FRIM to improve the delivery of its practices while achieving the aim of being the World Heritage Site (WHS) UNESCO in 2017.

1.9 RESEARCH STRUCTURE

There are five chapters divided in this research. First is Chapter 1 which focuses on the introduction of research including the research background, problem statement, followed by research questions, research aim and objectives, significance of study, limitation, research structure and conclusion.

Next is Chapter 2 which discuss briefly on the literature review or the background study where this chapter provides information on the overview of botanic gardens sector, the size and characteristics of the sector, and the main function they carried out namely conservation, research and education. The unique nature of botanic gardens and what they offer to. Moreover this chapter also gives indication of the idea of a broader social role for botanic gardens, looking in particular at concepts like social exclusion and the context from which this work has emerged, for instance social policy which seeks to combat or alleviate the causes of inequity and division in society. The nature of social exclusion as a contested term is also explored. This chapter as well underlines the environmental issues and the increased focus on the damaging impact of human beings on the environment.

Chapter 3 focusing on the research methodology which demonstrates the data collection parts which divided into two which are from primary data and secondary data. In this chapter, the flows of research strategies that will be implemented are explained. Next it describes on the data analysis parts which used SPSS application.

Further to Chapter 4 describes on the results and findings from all data collection that have been analyzed in Chapter 3. These results and findings are very import in order to provide a proof of this research.

Lastly is Chapter 5 which are recommendation and conclusion. In this chapter, it comes out with the design recommendations to cater the issues highlighted in this

research and conclusion gives wrap up of all important matter in studying the topic of this research. Figure 1.1 shows the flow of research structure.