



Insights from Grey Literature that Could Facilitate Research and Sustainable Development of the Bolgoda Ecosystem

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1. INTRODUCTION

Bolgoda ecosystem has the largest natural lake and freshwater body in Sri Lanka located on the southwest boundary of Colombo District and covering two-thirds of Kalutara District. It is also listed as “one of the 1001 natural wonders of the world one must see before you die [1].” According to the Millennium Ecosystem Assessment (MEA) [2], an ecosystem such as Bolgoda should be providing; Provisioning services (food and water etc.), Regulating services (climate and disease control etc.), Supporting services (nutrient cycling and crop pollination etc.) and Cultural services (recreational, and spiritual benefits etc.). Furthermore, the socio-economic and environmental benefits from Bolgoda could be crucial to achieve the SDG-11, which is to make cities inclusive, safe, resilient and sustainable [3]. Additionally, higher educational institutions and schools, nestled with this ecosystem or in the neighborhood gets an opportunity to embrace and explore its dynamics such as habitat change, responses to invasive alien species, over-exploitation and pollution, that could provide valuable and insightful information for conservation and sustainable development.

Awareness on the social and ecological conditions

of the local environment amalgamated with scientific research enables scholarly outcomes that could be useful for critical decision making. Conventional scholarly resources available to date, could be mostly accessed via conference proceedings, reports, theses, dissertations etc. Out of these grey literature, theses and dissertations can be considered as sources of comprehensive information as they include valuable context-specific descriptive scholarly information which may not be available via other means of scientific publications [4][5]. Currently, the scientific literature on the Bolgoda ecosystem is sparsely available and are largely scattered. However, sufficient awareness on the available grey literature regarding the Bolgoda Ecosystem can be beneficial not limited for the research purposes but also for strategic management of Bolgoda resources as ecosystem services. Hence, an attempt was made to conduct a bibliometric analysis on theses and dissertations produced from studies relevant to Bolgoda ecosystem to reveal the existing and also to explore the future research opportunities.

2. METHODOLOGY

Keyword searches in academic search engines, bibliographic databases, shadow libraries, insti-

tutional repositories, online public access catalogues, union catalogues and open access directories to retrieve relevant records were used in this study. Keywords, "Bolgoda"; "Weras ganga" or "Veras ganga"; "Kapu ela" "Panape ela"; "Maha oya" "Bellanwila"; "Attidiya"; "freshwater lake" and "Western Province" were used to retrieve theses and dissertation records available up to December, 2022. The records were manually sorted for relevant specific details such as the title, year, degree awarded, awarding institution (school/college/faculty/department), and subject area according to Millennium Ecosystem Assessment (MEA). The occurrence of the word "Bolgoda" was also separately considered in the retrieved documents.

3. RESULTS AND DISCUSSION

Adhering to the above methodology, 45 theses and dissertations were identified with content related to Bolgoda ecosystem. The word "Bolgoda" encountered an average of 3.56 on 25 theses and dissertations with restricted access, in contrast to an average of 20.2 on 20 open-access theses and dissertations. Figure 1 depicts the title words extracted from theses and dissertations that contain Bolgoda.

Out of the 45 theses and dissertations, 11 were from foreign institutions (Table 1). The highest recorded among local institutions is 16 by the University of Moratuwa and they have been produced via, MSc (58%), followed by PhD (18%) and MEng. (11.1%) studies (Figure 2). The taught postgraduate programs has produced 25 theses and dissertations with associations to Bolgoda. MEng/MSc. in Water Resources Engineering and Management offered by the Faculty of Engineering, University of Moratuwa has produced 28% and 24% by MSc. in Fisheries and Aquatic Resources Management, Faculty of Applied Sciences, University of Jayewardenepura (Table 2). Year-wise categorization of theses and dissertations is available on Figure 3.

With reference to the Millennium Ecosystem Assessment (MEA) criteria, the majority of the studies (18) focused on regulating services such as water. This was followed by 11 theses and dissertations on provisional services of ecosystems, such as

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food, and 9 on cultural-related services, including aesthetic and recreational aspects (Figure 4). Two theses and dissertations each reveals provisioning services information on livelihood, and regulating services on pest and disease control and waste treatment. Only one scholarly contribution can be observed via thesis/dissertation regarding water supply and transportation, which is an integral provisioning services an ecosystem. Soil fertility and biodiversity which can be classified as regulatory services also indicates one research study each.

4. CONCLUSION

Bibliometric analysis of grey literature on theses and dissertations presented an insightful overview on the existing research outcomes related to the Bolgoda ecosystem. Categorization of MEA revealed majority of the research conducted are on

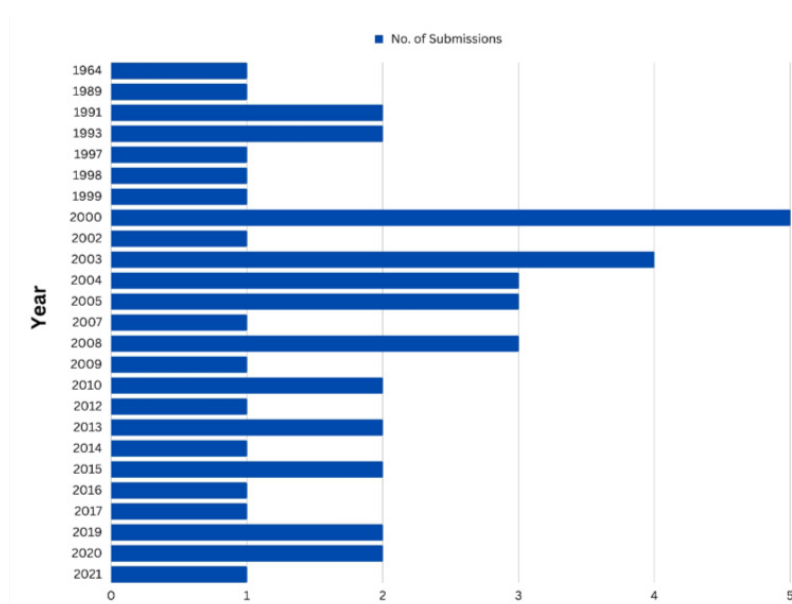


Figure 3: Year-wise Submissions

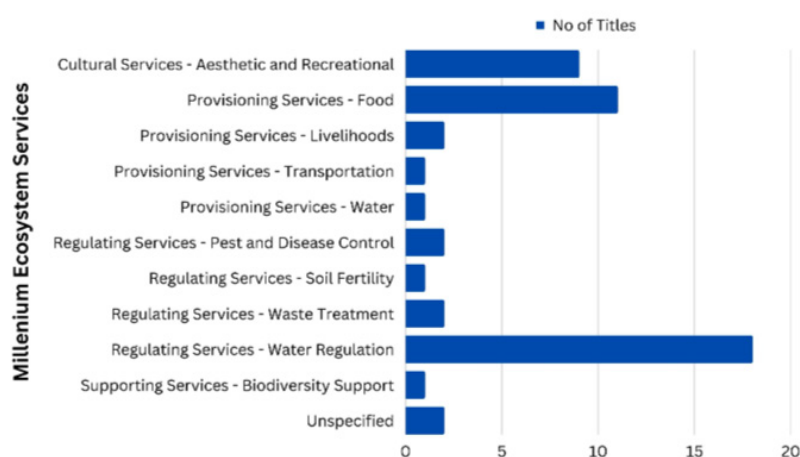


Figure 4: Submissions According to MEA

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