

Seed Dispersal Potential of *Elephas maximus maximus* at Habarana, Sri Lanka**Peiris M.S.D.¹, Gunawardena M.P.^{2*}**¹*NatBeHo/ Nature Beyond the Horizon-The Environment society of Horizon Campus, Malabe, Sri Lanka*²*Faculty of Science, Horizon Campus, Malabe, Sri Lanka***medhisha@gmail.com***Abstract**

Elephants are holding a significant position in the environment, as they are the largest terrestrial mammal species in Sri Lanka. Elephants act as seed dispersal agents of the ecosystem. They consume a huge amount of plants per day and most of the seeds in their diet can remain undigested. Those seeds can germinate in normal environmental conditions. There are only a few studies conducted in Sri Lanka to assess the seed dispersal potential of Sri Lankan elephants (*Elephas maximus maximus*). Therefore, this study was carried out to identify the seed dispersal potential of Sri Lankan elephants in the low country dry zone of Sri Lanka. The selected study area was Habarana, Hurulu Forest Reserve, and Minneriya National Park, where most of the Elephants roam throughout the year. The dung samples were collected randomly within a period of five months starting from January 2019 to June 2019. Collected dung samples were broken into pieces to find visible seeds. Furthermore, they were kept a few days to observe the germination of the seeds. Altogether, 90 piles were observed; out of which, 43 piles contained 59 germinated plants (36-*Oryza* spp, 2-*Citrullus lanatus*, 12-*Cucumis melo*, 5-*Cucurbita maxima*, and 4-unidentified seedlings), and 16 piles contained 20 seeds (1-*Artocarpus heterophyllus*, 14-*C. melo*, 2-*C. lanatus*, and 3-unidentified seeds). The greatest number of plants were paddy (*Oryza* spp), because some elephants live close to human habitats and they tend to feed on paddy fields and chena cultivations. Snake Cucumber (*C. melo*) and Pumpkin (*C. maxima*) are commonly grown plants in chena cultivations. Moreover, the elephants in the park mainly consume grass species that grows on reservoir beds such as Cogon Grass (*Imperata cylindrica*), which is rapidly spreading weed of this area. Therefore, their dung piles did not contain seeds of other plant species that can germinate. Furthermore, polythene bags were found in 14 dung piles, because some elephants are used to feed on garbage and it is a significant threat to elephants in the area. This observation depicts that improper garbage disposal in the expanse cause severe threat to the Elephants in the area. In addition, the Elephant dung contains many insects and other small invertebrates, which depicts that Elephants play a key role in the ecosystem. When considering the seed dispersal potential of *Elephas maximus maximus* in the area, the above results conclude that Elephants, which roam outside the protected areas mainly, disperse paddy (do not last for long period) and other vegetables.

Keywords: Elephants, Dung, Seed-dispersal, Habarana