

The Impact of Human Elephant Conflict on Village Life in Sri Lanka

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Abstract

Human-Elephant Conflict (HEC) is a critical socio-economic and environmental issue in elephant range countries, including Sri Lanka. Humans and elephants are facing a grave threat due to the conflict between them in various parts of the island nation of Sri Lanka. In Sri Lanka, about 2% of the global elephant count (or about 5,787 elephants) lives in their natural habitat. When the estimated elephant population is divided by the land area of the respective country, Sri Lanka had a density of 0.088 per km² in 2008, causing a severe environmental issue due to the limited land resources. With the significant increase in the country's human population, elephants are now restricted to the forest regions in the dry zone lowlands. Figure 1 shows a large group of elephants crossing a farming area in rural Sri Lanka, highlighting the conflict's severity for agricultural villages.

Keywords: Environmental issue; land; agriculture; wildlife conservation; socioeconomic

Introduction

Human-Elephant Conflict (HEC) is a critical socio-economic and environmental issue in elephant range countries, including Sri Lanka [1]. Humans and elephants are facing a grave threat due to the conflict between them in various parts of the island nation of Sri Lanka [2-4]. In Sri Lanka, about 2% of the global elephant count (or about 5,787 elephants) lives in their natural habitat [5]. When the estimated elephant population is divided by the land area of

the respective country, Sri Lanka had a density of 0.088 per km² in 2008 [6], causing a severe environmental issue due to the limited land resources. With the significant increase in the country's human population, elephants are now restricted to the forest regions in the dry zone lowlands. Figure 1 shows a large group of elephants crossing a farming area in rural Sri Lanka, highlighting the conflict's severity for agricultural villages (Figure 1).



Figure 1: A massive group of wild elephants is crossing through a paddy-growing region in eastern Sri Lanka (Source: sundaytimes.lk, 02032025).

The HEC of Sri Lanka and its Impact on Agriculture

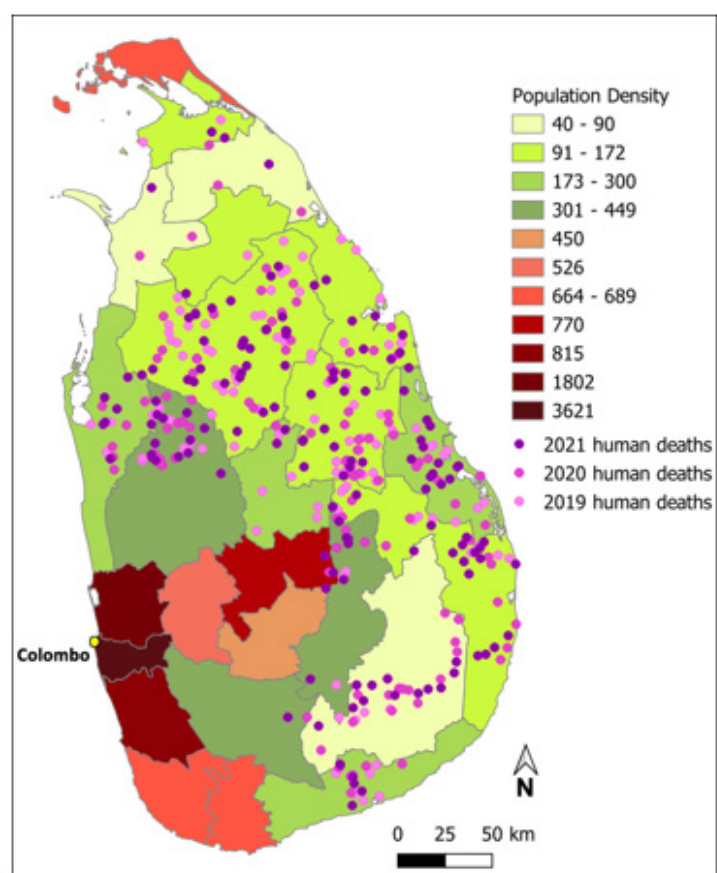


Figure 2: Population density by administrative districts in Sri Lanka and human deaths caused by HEC from 2019 to 2021.

Elephants have a massive daily dietary requirement, around 150 kg of green matter [7]. This requirement fuels the conflict in Sri Lanka, leading to significant effects on agriculture, especially in rural regions of the island. Apart from regular crop destruction, HEC threatens the livelihoods and food security of villagers as well as the elephants. While farmers lose their income and spend heavily on crop protection, with little government compensation, traditional beliefs and government regulations are banning them from confronting elephants directly without the involvement of wildlife authorities. This conflict drives economic losses for farmers and the nation, contributes to the socioeconomic insecurity of communities, and escalates retaliatory killings of elephants, which are an endangered species. The severity of the HEC in rural Sri Lanka is presented in (Figure 2), which shows the number of human deaths from 2019 to 2021 due to elephant attacks and the population density of each district of Sri Lanka. According to data gathered from the Department of Wildlife Conservation, Sri Lanka, the map shows that nearly all casualties occur outside the island's highly populated districts. The habitat and conflict zones also coincide with many of the rice paddies and irrigated tanks in Sri Lanka, as well as natural forests and protected areas [8].

The Conflict Mitigation and Concluding Remarks

To address the damage caused to rural farmlands, elephants must move to new habitats. Simultaneously, elephant habitats overlapping with human activities are affected by multiple development goals, such as agriculture and transportation (Figure 2). The increase in various crop cultivation and construction projects, including highways, is critically affected by the HEC mitigation efforts. In other words, human activities continue to encroach on the living spaces of elephants in different ways. Sri Lanka had approximately 5,787 elephants in 2011, and the range has been shrinking in the forest regions in the dry zone (east and northeast of Sri Lanka). Fur-

thermore, elephants are geographically trapped on the island of Sri Lanka and face a limited habitat. The government may be involved in solutions such as establishing electrical fences or buffer zones to separate villages from elephant habitats. However, the effective success of mitigation methods is still not well established.

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Conflict of Interest

No Conflict of Interest.

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