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Assessment of level of public knowledge, attitude, and perception towards sustainable mangrove forest conservation: a case study from Negombo region, Sri Lanka

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Mangroves have been an essential vegetative component not only in sustaining the balance of ecosystems but also in providing significant socio-economic benefits to the local communities such as fish, timber, and tourism opportunities to the local communities. Quantifying knowledge, attitudes, and perception (KAP) supports sustainable mangrove conservation by informing conservation efforts to address local needs and priorities and monitoring interventions' effectiveness over time. Thus, this study aims to determine the level of knowledge, attitudes, and perceptions of the public toward sustainable mangrove forest conservation in the Negombo region, Sri Lanka. Prior to data collection, a pilot study was conducted in the study area with 40 respondents and Cronbach's alpha ($\alpha = 0.819$) reliability test was followed to test the reliability of the data. Data were collected via face-to-face interviews with randomly selected 395 respondents living near and around the northern region of the Negombo lagoon, which involved 8 Grama Niladhari Divisions. 51.39% of the individuals were male, while the remaining 48.61% were female, reflecting a commitment to gender equality. A Likert scale and correlation analyses were implemented using SPSS version 26 software to determine the community's knowledge, attitude, and perception (1-lowest and 5-highest). The finding shows that the level of knowledge of the community on the importance of sustaining mangrove forests was high from 3.92 to 4.72, the level of attitude was between 3.2 to 4.88, and the perception components from 4.47 to 4.83. There were significant gender differences in both attitude and perception toward mangrove forest conservation, with the female respondents achieving better scores than the male respondents, although there was no significant difference in their knowledge levels. Also, about 96.2% of respondents agree that the loss of mangroves will have negative impacts on the environment and the economics of the livelihood. Furthermore, most respondents believed that chemical pollution, illegal clearing, and development activities have a significant impact on the degradation of mangroves in the area. The correlation test showed that there was a strong positive correlation between knowledge and attitude ($r = 0.901$, $p < 0.001$), knowledge and perception ($r = 0.795$, $p < 0.001$), and attitude and perception ($r = 0.864$, $p < 0.001$) respectively. They suggest that the most effective approach for preserving this ecosystem's survival is to engage in mangrove replanting through proper scientific monitoring, while also recommending the rectification of policy deficiencies and the execution of comprehensive strategies for mangrove conservation. The findings from this study may provide valuable information for future research, as well as assist government and stakeholders in enhancing the effectiveness of campaigns and programs focused on the sustainable management of mangrove forests.

Keywords: Attitude, Knowledge, Mangroves, Perception, Sustainable Conservation