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Socio-Economic Impact of Invasive Alien Species on Human lives: Case Study at Bellanvila-Attidiya Marsh, Sri Lanka

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Invasive alien species (IAS) have significant impact on natural and agricultural ecosystems in the world which considered as irreversible and irreparable. Scientists have discussed about ecological impacts of invasive alien plants in great detail and since recently the social and economic impacts are also being considered as important. IAS also negatively effect on agriculture and human health reducing the income from agriculture while increasing expenditure on inputs. Its economic damage to tourism, fisheries, and forestry is immense. However, social and economic damage of IAS could not exactly be estimated. In 2003, the International Union for Conservation of Nature (IUCN), showed that the economic loss from IAS is over 400 billion dollars annually and approximately \$ 23 billion is lost due to the effect of invasive plants on agriculture, industry, recreation and the environment.

This study was conducted in 2011 in Bellanvila-Attidiya area with the main objectives of identifying the distribution of alien plant species and to find the major social and economic impacts. Random sampling method was used to establish five field plots $(10\times10 \text{ m})$ for collecting the floristic data. About 300 ground truths were collected and GeoEye1 and Google Earth Images were used to identify the distribution of plants in the study area. Satellite images were classified using unsupervised classification method. Questionnaire and interviews were used to collect data to examine the social and economic impact of invasive alien species. Stratified random sampling method was used to collecting these data (10,943 households and nine GN divisions were identified in this area) and descriptive statistical analysis, ANOVA and chi-square test were used to analyse data. This study identified 13 IAS and five invasive alien animals. *Annona glabra* was the most harmful one among all and according to the result of questionnaire analysis, its socio-economic impact also high. This study found that IAS was rapidly spreading at Bellanvila-Attidiya marsh and if necessary actions are not taken, these invaders will rapidly encroach the entire area.

Keywords: Invasive alien species (IAS), Annona glabra, Google Earth, Geo Eye