

## Prioritization of wild and neglected fruit species in Sri Lanka using fruit selection index and species distribution modeling for agro ecological zone based promotion

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Diversity of fruit species in Sri Lanka (i.e. 237 species belong to 56 families) and its potential to address the current food security issues in the country special relevance to the Hidden Hunger have been recognized by the UNEP-FAO-GEF funded Biodiversity for Food and Nutrition project. Though rich in diversity only a very few species are cultivated commercially. Hundreds of lesser known fruit species are grown naturally in the wild and marginal environments. High ecosystem, climate and geographic variability in the country formed 46 agro ecological zones – eco-geographically unique areas that provide a unique range of constraints that define patterns of genetic diversity associated with particular geographic locations. In this study potential distribution areas of 28 wild and neglected fruit tree species were prioritized and mapped using 2976 location data collected from field investigations, field research stations and herbarium records. The values of Fruit Selection Index, which used the scores provided by the community leaders and panel of experts to 23 objective statements on a 3-point likert scale, were used to rank or order the prioritized species.

Species Distribution Modeling software, Maxent was employed for mapping and identification of most suitable climate potential zones. Maxent modeling revealed high potential environmental variables for distribution of these species. We harmonized both environment variables and socio-ecological system properties to select potential species to promote and enhance food and nutrition security.

Keywords: Agro ecological zones, biodiversity for food and nutrition, food and nutrition security, species distribution modeling, wild and neglected fruit species