

DISTRIBUTION OF INVASIVE ALIEN SPECIES IN THE LOWER WALAWE BASIN IRRIGATION EXTENSION AREA

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Spatial distribution of Invasive Alien Species (IAS) in the lower Walawe basin was analyzed in terms of land use types using existing maps and satellite images in Geographic Information Systems (GIS). Abundance and distribution patterns of IAS were assessed. To achieve the above task, the land use map for year 1960 was digitized and compared with current land use maps. The survey on resources of the Walawe basin in 1960 showed three major land use types namely, non productive Dry zone forests (47 %), low yield Dry zone forests (14 %) and shifting cultivation lands (37 %). However, at present the major land use types are scrubland (58 %), land under shifting cultivation (24 %), and plantations (11 %). Furthermore, forested area in year 1960 has been drastically changed due to human activities such as shifting cultivation, timber extraction, etc. However, excluding shifting cultivation lands, only 2 % of the overall land area has been used for productive purposes in the 1960's whereas, this area currently has increased to 18%.

Seven invasive alien species were recorded from the study area. Of the seven species, *Lantana camara* and *Chromolaena odorata* were found in disturbed places and inhabited the scrubland and chena land. While, *Opuntia dillenii* occurred under *Prosopis juliflora* (Mesquite) that inhabit chena, paddy cultivation, and the catchment of the Karagan lagoon. *Xanthium indicum* was found only in the Dry zone low land region (DL₁ agro-ecological zone) predominantly at the edges of tank and stream banks. However, *Panicum maximum* and *Leucaena leucocephala* rarely occurred in the plantation and chena cultivation. The abundance of *X. indicum* (74 %) and *P. juliflora* (67 %) was high in the upper (DL₁) and lower area (DL₅) of the study site respectively. When all the sampling sites are taken into consideration, *Flueggea leucopyrus* (10 %), *Dichrostachys cinerea* (6 %) and *Phyllanthus polyphyllus* (4 %) were the dominant non invasive species. Therefore, invasion of *P. juliflora* northwards and *X. indicum* southwards should be monitored closely in future land use studies using spatial data through GPS locations and GIS.

