



A GIS MODEL FOR SITE SELECTION OF INDUSTRIAL ZONES IN SRI LANKA

(A Case Study of Kesbewa Divisional Secretariat Division in Colombo District)

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Site selection of industrial zones in Sri Lanka has become a critical issue and a sensitive decision making process that may create a range of socioeconomic and environmental problems over time. Hence, several site selection criteria and appropriate methods for establishing industries have to be concerned by the decision makers and authorities before locating industrial zones in particular regions. Though, at present the enormous data volume and complex criteria regarding this field are available, the suitable site selection process is still problematic. Therefore, this paper assumes that, in some extent, such failures can be overcome by applying Geographic Information System (GIS) and Multi-criteria Decision Making Techniques into the site selection process of industrial zones.

In this study, a GIS based model is proposed to screen most suitable locations for establishing Industrial Zones in Kesbewa Divisional Secretariat Division of Colombo District, Sri Lanka. In methodology, initially seven set of site selection criteria were identified through a literature survey and consultation of expertise. Land use, Water, Soil type, Wildlife, Archeological sites, Roads and Power lines were the selection criteria relevant to this study area. Next, attribute values of the criteria were entered into a multi-criteria decision making scheme by using GIS model. Consequently, a suitability map was created by the weighted overlay method of the model so that it could easily identify the suitable sites that have met the entire requirements. The final step of the methodology of this model was to reunite the selected sites with two compulsory sub criteria; minimum land extent of 25 acres and applicability of 100m buffer zone (green belt) ordained by the authorities. In order to identify the status of available sites, a suitability scale was created with the categories of Excellent, Very good, Good, Fair and Not suitable.

The result flags that there is no any block of land under the 'excellent' category that can be associated with suitable site selection model for establishing an industrial zone in the study area but two block of lands were identified under the 'very good' category. Finally, only one site was able to select by matching with the two compulsory sub criteria for establishing an Industrial Zone in Kesbewa DSD but with some restrictions. This GIS analysis and

output model can be used to speed up the site selection procedure of industrial zones in Sri Lanka but it need to be further developed by using variety of socio-economic and environmental criteria in order to get more accurate outcome.

Keywords: *Industrial Zones, Site selection, GIS Application, Multi-criteria Analysis*