

## **Optimum Site Selection for Fire Brigade in Ella, Sri Lanka by Utilizing GIS**

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As an island nation, Sri Lanka faces different disasters while the forestfire disasters are dominant in the highlands of the country. In the Ella neighbourhood, forestfires occur every year near the end of the dry season. Further, the absence of fire stations near the area is a considerable issue. After the investigations a suitable location for the forestfire brigade was found and the network connectivity to the selected location from any place of the Ella was analysed. To find the best placement for a fire station, a site selection analysis was performed in a GIS context via a weighted overlay analysis. As the data sources of the study population, land use, land cover, elevation, water sources, road, building, pre-fired area, and pre-hazardous areas were utilised in the ArcMap 10.5 software platform through spatial analysis tools and network analysis tools. For the determination of weights for each factor, the Analytical Hierarchy Process was used as the main statistical technique of the study. Finally, the selected areas were examined via visual validation in Google Earth, and the most suitable location for fire brigade establishment along with the network analysis was selected. In addition, the establishment of the fire brigade is crucial in the central part of the country due to the magnitude and the frequency of the disaster. Further, the proposed study can be utilised as a comprehensive guideline for any organisation before the establishment of the fire brigade.

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