Use of GIS to Identify Alternative Traces for Railway Planning & Development

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The railway transportation is a one of the energy efficient transportation mode all around the world, as its capability of loading & transporting large amount of passengers and goods economically & safely. In the British colonial era, the railway transportation has been introduced in Sri Lanka, to transport the productions of plantations such as coffee, coco, tea, rubber, coconut, spices & etc, to the port, from up country and all around the island. With the development of new and faster roads forming in to a well connected network and introduction of efficient cars, buses and trucks, railway modal share has decreased. Today there is a need to introduced new railway lines that are faster and also forming a well connected network.

Physically, the speed of a train, depend on curvature & gradient of the track. Hence it is important to identify traces that satisfy speed requirements to compete with road traffic. When developing new rail line or roads it is mandatory to consider reasonable alternatives prior to selecting the final trace. With the limited amount of maps and other resources available one cannot spend lot of time to identify possible alternatives using land and field surveys, maps & other primary surveying equipments, when the railway planning & construction phase in Sri Lanka in the past.

The paper present an attempt made to use GIS tools such as Spatial Analysis, 3D Analysis, etc to identify possible alternative traces for detail studies using minimum map data available along with available satellite images.

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