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**Land Use Zones and Land Use Conflicts Along the Main Road in
the Liwagu-Labuk Watershed, Sabah, East-Malaysia**

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Abstract

In the Liwagu-Labuk Watershed, eight different land use zones have been identified. They cover areas beginning in the highlands close to Mt. Kinabalu National Park (ca. 1400 m a.s.l.) and ending at the highly productive waters of the Labuk estuary. Land use along the river basin changes from intensive vegetable production and tourism in the upper catchment, followed by areas with more extensive mixed agriculture and ending in the low lands with increasing areas of large scale oil palm plantations. The observed land use conflicts along the upper part of the river basin are attributed largely to competition for water by agriculture, tourism and municipal supplies; with inherent risks of water pollution by pesticides, fertilisers and waste water. Copper mining activities in adjoining sub-catchment further aggravate the risk of water pollution by suspended sediment and heavy metals. The proposed 120 MW Liwagu HEP Dam at the middle section of the river basin will flood agricultural land and may result in relocation and intensification of land use in the remaining areas therein. Along the lower part of the river basin, land use conflicts are due to increasing conversions from extensive small/medium scale agriculture and forest to intensive monocultures dominated by oil palm plantations. This intensification with a growing input of agrochemicals increases the risk of water pollution and soil erosion. Socio-economically, people are becoming increasingly dependent on these oil palm plantations, which are owned largely by private companies. Loss of social structures is an anticipated consequence of this development. A future project shall further investigate the reasons for land use conflicts in this area and develop sustainable land use concepts.

Keywords: Intensification, Labuk, land use changes, land use conflicts, Liwagu, pollution, social impact, water