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Understanding the River Basin Classification of Sri Lanka

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Abstract

The need has arisen to understand the rivers and river basins as a subject for achieving related policy making, development, conservation and management goals. The interpretation of the river basins concept was first attempted by Hunting Survey Corporation Limited, Toronto, Canada, and Surveyor-General of Ceylon (Sri Lanka) in 1962. Consequently, Arumugum in 1969 explained that the island could be divided into 103 components of natural river basins. Unfortunately, in the past six decades, misinterpretation of said river basins with rivers and misunderstanding of river drainage patterns have been identified many research articles and even in the Sri Lankan educational system. Most of the authors and scientists have misinterpreted the number of rivers in Sri Lanka as 103, and they flow radially from the Central Highlands to the sea. The present study is focused on providing clarifications of the river basin concept, rivers and understanding the drainage system of the island. Therefore, river basin maps and digital elevation models were developed to understand the river basins, river origin locations and flow patterns. These data coupled with previous field observations were then used to critically evaluate existing scientific literature. Accordingly, there are 29 rivers (15 perennial and 14 seasonal rivers) that flow directly to the sea. This could be further categorised as drowned river valley, bar-built perennials, bar-built seasonal, perennial delta estuaries, and seasonal delta estuaries. Considering the origin of these 29, only 8 rivers begin from the central highlands and its margins (over 1,200 m contour line), and most rivers/Oya emerge below the 1,200 m contour line. Another 64 rivers/Oya found out to be emptied into lagoons even though traditionally classified as flows directly to the sea. Mahsilawa, Katupila Ara, Pallakutti Ara and Rathmal Oya identified as rivers, but they connect to other rivers or salt marshes while, Bolgoda lake, Madu Ganga, Madampe lake, Telwatte Ganga, Rathgama lake and Koggola lake turned out to be back-barrier coastal lagoons mistakenly identified as rivers in the traditional classification. Also, all these originate from the coastal plain (below 100 m contour line). Hence, it is clear that there are some misreading of river basins and rivers in existing scientific studies. As this information is valuable in many ways to the country, misreading of these subject matters must be corrected immediately. Further studies on the river basins concept must be done analytically and the context of the Sri Lankan education system should be updated accordingly.

Keywords: River basins, Misunderstanding, Radial drainage, Central highland, Sri Lanka.