Visualizing invisible: use of GIS in settlement archaeology in Sri Lanka, a case study in Lower Kirindi Oya Basin

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Ancient Landscapes are a key unit of study in archaeology. Landscape is a complex entity that included in a given environment. Archaeologists concern about the cultural landscapes. Cultural landscape is a manmade phenomenon. Different societies perceive their environments through the perspectives delineated by their cultural norms. Therefore the cultural landscape changes frequently. Archaeologists obtain the aid of artificial intelligence to confront the challenges of reconstructing ancient cultural landscapes. Notably the uses of GIS based computer application in archaeology have reflected a great potential in this regard. To depict the changing facets of the ancient landscape needs abstract models. These models are based on the cognitive capacity of the observe and the technical sophistication of the computer software.

A GIS application was conducted to re construct the changing cultural landscape of the lower Kirindi Oya basin in the Hambanthota District. 300km2 area around the Tissamaharama town was exploded. As a result, 127 archaeological sites have been discovered. Subsequent analysis shows that those sites represent a period of nearly two millennia from 900 BCE to 1400 CE. During this period the geographical distribution of the settlement has considerably changed. Human activities have influenced to change the natural landscape of the area in high degree intensity. Constructions of two irrigation dams across Kirindi Oya in early first millennium CE caused a negative impact to the ecology resulting the complete disappearance of the tributaries of Kirindi Oya.The present paper seeks to describe the conceptualization and the application of the reconstruction of the cultural landscape of the past 2000 years in the lower Kirindi Oya basin.

Virtual archaeology is a new filed that combines archaeology and computer to reconstruct of the past. It can be used numerous ways as extensively. Roman Pompeii offers an excellent example: The whole city successfully vanished in AD 79, when mound Vesuvius erupted and hidden it under a thick mantle volcanic ahs. The section of Pompeii have been modeled and reconstructed in virtual reality application by archeologist (Renfrew 1977, p.1). Geographical information system is a recent analytical tool combine with computer in the field archeology. It has been used to simulate diachronic changes in past landscape and intra site analysis (Kvamme, 1989).

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