

GIS FOR ENVIRONMENTAL INFRASTRUCTURE DEVELOPMENT: A CASE STUDY OF YANGON, MYANMAR

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Key words: GIS, Environmental Infrastructure Management, Health Security, and Myanmar.

ABSTRACT

The impact of deficient water and sanitation services falls primarily on the poor. Their poverty is aggravated and their productivity impaired, while their sickness puts severe strains on health services and hospitals. Safe water supply and sanitation are essential requirements for improved health and quality of life, for improved productivity, and for sustainable human development. The percentages of the population in the developing world with reasonable access to safe water and sanitation facilities over the period of 1990-96 are estimated at 71 per cent and 39 per cent respectively [UNDP 1997]. Despite these achievements, there are many more people than ever who are yet to be served.

The level of population without access to safe water, sanitation, and health services in Myanmar is still very low that caused a variety of environmental related diseases. The success may be attributed to the national health policy, which was formulated in 1993 with the objective of achieving the "Health for All by the Year 2000" goals through primary health care with emphasis on environmental health programmes. The main factors attributed to the limited progress include: (a) low priority attached to the sector, (b) weak institutional infrastructure, and (c) poor operation and maintenance. Yangon, the capital of Myanmar was selected for a case study area to learn the insufficient urban environmental infrastructure management in developing countries and its impact on the public health situation.

This study will be represented by its profile of population as well as the water utilities, sanitation, and solid waste management, which support the processes that generate the health problems there. Objectives will then be stated in terms of environment related health improvement.

Actually, the British Colony had constructed the underground sewerage of Yangon City systematically for more than 100 years ago. Even though, there was no maintenance, renovation, and improvement because of the paper manuscript of Yangon sewerage system has disappeared unfortunately. In this case, GIS, a computer-tool has to be used to initiate the database of Yangon environmental infrastructure status, classify and display current and previous information, analyse trends and look for correlations between them and areas to find the priority of solution, good decision for city planning in place. ArcView GIS to manage lots of data easily and illustrate the spatial distribution analysis in visually.

Four major findings can be derived from the study. First, data management on paper manuscript is not reliable; time waste; and impossible to do comparative study to find out the solution visually. Second, within the several infrastructure insufficiencies, solid waste management is the first priority to be progress the health status in case of Yangon. Third, an estimation on the traffic route distance from the city central to final open dumping sites in 1939, 1999 and the year 2000 highlighted the reason why labour and vehicle problem in Yangon now a day. Such local analyses could be strongly provided on better decision for the city planning. Fourth, GIS in planning, operation and maintenance tasks is key to successful overall system performance for Environmental Infrastructure Development.

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