Managing the drying up natural springs in the Central Highland in Sri Lanka: A case study at Liyangahawela in Bandarawela

Extended Abstract

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Background

Basically water resource aquifer exists as surface water and the ground water resource. Groundwater resources are stored in shallow or deep aquifers. Groundwater is one of the most important natural resource in Sri Lanka. 'Groundwater is a hidden resource, which is more reliable and also less subject to ground variation as in the case with surface steam and river (Panabokke, 2007). Spring water is one of the groundwater resources which is different from the groundwater stored underground. 'A spring is a natural flow of ground water from soil or rock surface and occurs whatever ground water table intersects with ground surface' (Arumugam, 1974). Fresh water from natural springs which has remained largely as an untapped resource offers a huge potential for alternative water resource for the rural community. Natural springs are vital to the country's well-being as they are the main water source that feed the stream which in turn nourishes the river system. Liyangahawela is one of the area which presents natural springs in the central Highland. In this area people use this natural spring water for drinking and other needs. Because of the development of tea industries in hill area, a large number of springs are dried and some have been damaged and many springs are threatened by deforestation. Not only had those buildings of settlements are another reason for drying up of these natural springs. At present most of the people receive their drinking water from the Water Supply System because natural springs have been dried up. Now these springs only activate in the rainy season. The people and the ecosystems are affected.

Spring water in hill areas is the potential force of water which is the watershed of most river system.Therefore, drying up of natural spring is affect to whole the country. It is good for find out what are the causes of drying up and give solutions for this problem and also this study is very usefu for the future researchers.

Objectives

General objective of this study was to formulate a management strategy for regeneration of the springs. The Specific objectives of this study were to assess the causes of drying up the natural spring in the selected area; to study the effect of drying up the natural spring in the selected area and to propose conservation appropriate methods for the optimal utilization of the springs.

Methodology

This study was based on both primary and secondary data. The primary data were collected using questionnaire survey. 30 people were randomly selected as the sample. Descriptive statistics were calculated using Excel application.

Results

The main cause of drying up of the springs was related with human activities in the upper catchment, such as cultivation of tea, planting *Pine* trees, cultivating vegetable, and constructions of buildings. In general, forest cover in catchment area has been reduced around 20%. All above human activities have negatively affected to reduce surface flow and the groundwater table. In addition, vegetable cultivation has reduced the quality of water by mixing the agrochemicals to the ground water. Land policy is another factor that aggravating the problem. Forest lands belong to the Department of Forestry have been sold to private owners for construction of hotels and residents. Meanwhile, some of the lands are being encroached by the community dwellers for vegetable cultivation. In addition, Tea small holders have also expanded their plantations to the former forest area. Inefficiency of the Forest Department combined with political force has created a situation where people act on their own. The community influences politicians to reduce vigilance of the Forest Department. Above behavioral pattern was related to their attitudes of national conservation policies. People are considering cultivation more important than the natural resources. The root cause is the ownership of lands by government and the people do not realize that the resource degradation will affect them.

Conclusion and Recommendation

Landscape of the capital highland of Sri Lanka possesses a potential force of water which is the watershed of most river systems. And also most

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rural people depend on spring water resources. Therefore, protection and conservation of natural spring is important issue. Water Resources Board has initiated a program towards the conservation and protection of natural springs and other potential water sources. And this research, recommended for all springs in private land must be declared by law to be the property of the state and apply strict law for growing Pine trees in hill area. And carry out an awareness program to the general public about the natural springs and protection methods. Implementing tree cultivating program in Hill area is other spring water conservation method.

Key words: Spring water, Water, drying up, ground water, courses, resource.

References

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