

Socio-geological Impact of Uma Oya Multipurpose Development Project, Sri Lanka

*Gunawardana¹ K.D.C., Jayasingha² P. and Ratnayake¹ A.S.

¹Department of Science and Technology, Uva Wellassa University, Sri Lanka

²Landslide Research and Risk Management Division, National Building Research Organisation, 99/1, Jawatta Road, Colombo 05, Sri Lanka

*Corresponding author - chanakagunawardana42@gmail.com

Abstract

Uma Oya Multipurpose Development Project consists of a 23 km long trans-basin tunnel which is to be built to generate hydropower and provide water to Hambanthota area. However, implementation of this project has caused huge geological, environmental and sociological impacts on the people in Badulla District. This study was carried out to investigate the socio-geological impact on the people in 13 affected *Grama Niladari* (GN) divisions in Bandarawela and Ella Divisional Secretariats. The data collected from the literature surveys and field surveys were used to map and interpret the water availability, major events of hazards and land-use changes in the area. Non-structured interviews were carried out to analyze the opinion and mindset of the community towards the ongoing project and hence, to understand the socio-geological aspects.

According to the literature, it was found that 5,279 houses have been damaged and 1,228 domestic wells have been dried in the selected 13 GN divisions. During the field observations, it was revealed that out of 323 observed domestic wells, 199 have been completely dried (61%). Some of the wells seem to be recovering after several rain spells received in the area. Ground instabilities like ground cracks and sinkholes were identified, especially in some of the valley areas.

As a result of these geological impacts, the communities living in the area have experienced significant negative consequences in relation to their socio-economic contexts, such as loss of residential housing units, loss of income from various ways, loss of agriculture (dropped by nearly 45%), unexpected expenses for water and more importantly loss of family life. In addition, due to the unplanned relief process conducted, most of the affected people have suffered from the evaluation and damage estimation activities. People's mindset has been adversely affected due to on the Uma Oya project, and also the service providing institutes mainly due to lack of proper awareness regarding geological impacts and other relief programs associated with the project. More importantly, psychological impacts due to this geological disaster have not been considered in the relief programs yet.

Keywords: Geological disaster, Instabilities, Psychological, Relief, Socio-geological