

Analysis and Mapping of Climate and Spring Yield in Tanahun District, Nepal

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Abstract : This study based on a bilateral development cooperation project funded by the governments of Nepal and Finland. The first phase of the project has been completed in August 2012 and the phase II started in September 2013 and will end September 2018. The project strengthens the capacity of local governments in 14 districts to deliver services in water supply, sanitation and hygiene in Western development region and in Mid-Western development region of Nepal. In recent days, several spring sources have been dried out or slowly decreasing its yield across the country due to changing character of rainfall, increasing evaporative losses and some other manmade causes such as land use change, infrastructure development work etc. To sustain the hilly communities, the sources have to be able to provide sufficient water to serve the population, either on its own or in conjunction with other sources. Phase III have measured all water sources in Tanahun district in 2004 and sources were located with the GPS. Phase II has repeated the exercise to see changes in the district. 3320 water sources as identified in 2004 and altogether 4223 including new water sources were identified and measured in 2014. Between 2004 and 2014, 50% flow rate (yield) deduction of point sources' average yield in 10 years is found. Similarly, 21.6% and 34% deductions of average yield were found in spring and stream water sources respectively. The rainfall from 2002 to 2013 shows erratic rainfalls in the district. The monsoon peak month is not consistent and the trend shows the decrease of annual rainfall 16.7 mm/year. Further, the temperature trend between 2002 and 2013 shows warming of + 0.0410C/year.

Keywords : climate change, rainfall, source discharge, water sources

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