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Hazard management in Val Canale valley

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Malborghetto's village, located in the extreme North Eastern part of Italy in the Friuli Venezia Giulia Region, was invested by an alluvial event on 29th August 2003. Those particularly harsh weather conditions (when 386 mm rain fell in 10 hours) caused several debris flow phenomena that involved the infrastructures present in the area creating damages and loss of human lives. Later in the valley have been designed and realized works aimed to defend and reduce vulnerability first and risk later.

In this work it has been choose to analyze one single debris flow developed on a small river located on the Eastern part of Malborghetto Municipality called Malborghetto Est (landslide code 0302252400) that caused a partial burial of a single house and interested also Pontebbana highway with its alluvial debris. It has been decided, regarding to a special research made for the Geological Survey of Friuli Venezia Giulia Region, to use this area as test site. To realize the study, it has been used the commercial Flo2D software that permit to make a back analysis to define the physical parameters that better characterize the phenomena. Subsequently, the calculated parameters were inserted in the model same as all the erosion and failure control measures. This permit to create a simulation of the real phenomena occurred to better understand the functionality of the mitigation works made. The result obtained was a risk area characterized by different risk values useful to determinate a sustainable future territorial planning.