

RUINON LANDSLIDE

Point of view: from the path over the landslide body, looking the slope in front of you

Now you are between San Antonio and Santa Caterina village; if you look at the other side of the valley, you can see mysterious devices coming out from the forest: they are "eyes" that are monitoring the Ruinon landslide.

Talking about landslides, ordinary people think about a sudden, catastrophic collapse of materials from a steep slope, moving down at high speed and taking few minutes for reaching the valley floor. This is the end of the phenomenon, when the equilibrium of unstable rocks is definitively broken; but a landslide can need tens, or sometimes hundred of years for developing, during which the whole slope moves slowly down.

Long-lasting gravity deformation of a mountain flank can be detected by the presence of periodic, isolated small debris falls, and mainly by new open fractures appearing on the high part of the slope and widening over time. From this point of view, Ruinon landslide is a paradigmatic example.

Here, a thick cover of glacial deposits, often remobilized along the slope by palaeo-landslides, lies on a fractured, unstable bedrock, moving slowly at least since 1960: in fact, in this year, a debris-flow destroyed the main road to reach Santa Caterina village. In the following years, the slope continued to move down, at a rate up to 1 cm per day whenever rain occurs.

The Ruinon landslide appears today as a wide scar in the forest, at least 700 m wide and with two distinct niches, the higher one at about 2100 m a.s.l., and the lower one at 1900 m a.s.l. The whole landslide body has an estimated volume comparable with the one of Val Pola landslide.

The scientific study of the Ruinon landslide and its systematic monitoring program started in 1984, and since 1996 it has been monitored by Regione Lombardia: now, a complex early warning system permits to record and process a large amount of data, even more than 900 thousands measurements per year ; this system was developed to understand the landslide evolution and to alert people in case of sudden accelerations.

It is clear that the Ruinon landslide in the future could develop thus damming the Frodolfo stream and then separating the higher part of the Valfurva from the lower sectors. Possible solutions are an underground conduit to channel away the stream waters, and a tunnel for the road, ready to use before the catastrophic event.

Perhaps, now that you are passing through this area, they are in an advanced stage of construction, or perhaps they have just been completed...

Both for the survey activities and for the planned solutions, the Ruinon landslide therefore also appears to be a notable example of the importance of being aware of the geological hazard of an area, and of the possibility of preparing to face the risk.