

# Solving water erosion in practise



Large rocks are placed in the trench and a run-off dug out

GRYTESKAR PASS

SKJEGGEDAL

NORWAY

## Trialling techniques for draining water from the path at Gryteskar pass: ASCENT teams from Trolltunga and Mournes

*A section of the path has suffered serious erosion damage due to water running down the length of the path. The path at this stage is almost like a tractor road and is approximately 5 metres wide but then narrows to a hiking trail leading up a quite steep mountainside.*

Sand, gravel and quite large stones have been displaced by running water caused by heavy rainfall. The aim was to find a better solution for leading water away from the road than the current ditches, which fill with rocks and spill water into the road. In addition to washing away the path, the water leaves rocks in the path that constitute a tripping hazard. Hikers coming down off the mountain after their hike are often physically and mentally exhausted at this point and injuries can easily happen here. Two different types of cross drain were constructed across the path: 1) A French drain with large rocks to cope with small to medium trickle of water coming in from the side of the path, and 2) a larger stone cross-drain to cope with the water coming from a stream spilling into the path.

1. The French drain was constructed by digging trench diagonally across the path, which was filled with larger rocks sourced from the sides of the path. Care was taken to leave sufficient gaps to allow water to flow through the rocks. A run-off was created at the lower end, leading into the ditch.
2. To construct the cross-drain, a trench was dug diagonally across the path, then lined with larger, rectangular flat stones. Several levels were created using larger stones to form natural "pools", also functioning as stepping stones across the open drain. The levels, combined with a layer of gravel and aggregate, help slow the water speed to prevent erosion to the side of the path.

For both constructions, care was taken to use turf, plants, gravel and aggregate to lead water into the drain and to make good the construction.



# Outcome

The section of trail that was trialled has considerable erosion, with most of the gravel washed away and larger rocks remaining in the road. Hopefully the new constructions will lead water away off the path and improve the situation. Until the snow melts, we do not know how effective the trial was. Trialling two different types of drain was useful as a demonstration of two different techniques to match varying amount of water. A return visit to the

site in spring will be important in terms of establishing the effectiveness of the constructions, however a more immediate outcome for the teams was the learning extracted from working together. For the Trolltunga team; learning new techniques and for the Mournes team, seeing how their techniques work in a different landscape with different natural resources.



**The new drain is almost complete. Notice erosion to the road.**

## FURTHER INFORMATION

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## Key Findings & Learning Points

### Key learnings:

- 1) Slow down the water flow. Normally, the local team would want to dig a narrow and deep trench in order to get the water to flow quickly out of the way. In this trial, it was stressed that slowing down the water prevents erosion and several steps were taken to achieve this.
- 2) Address the entry and exit of the water when correcting the path. Where is the water coming from, where does it go and how will your intervention affect this?
- 3) Due to local weather, planting and making good should be done in spring when the plants will grow and settle in their new spot.