



Flooding and damages in Kvam, Gudbrandsdalen in 2013

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Will find solutions to flood damages

PHUSICOS is a large R&D project which will implement nature-based solutions to reduce the degree of damage caused by natural hazards (floods and landslides) that are associated with extreme weather in rural mountainous areas. The NGI-led consortium of 15 organizations include highly-ranked European research institutions, authorities and practitioners.

According to nature

The research project is names PHUSICOS which in Greek means "according to nature", and stems from the fact that nature itself is a source of ideas and solutions to minimize the risk driven by and associated with climate change.

PHUSICOS will fill the knowledge gap specifically related to nature-based solutions for hydro-meteorological hazards (flooding, erosion, landslides and drought) by implementing such solutions at several European case study sites. These sites comprise three large-scale demonstrator sites in Italy, France/Spain/Andorra and Norway; and two small-scale complementary concept cases in Austria and Germany. The aim is to develop innovative actions on five fronts:

1. Technical
2. Service
3. Governance
4. Learning arena
5. Product innovations.

15 highly-ranked European partners

PHUSICOS is led by NGI (Norwegian Geotechnical Institute) and has 15 highly-ranked European research institutions, authorities and practitioners as partners.

The first meeting which signals the start of the PHUSICOS project will be held at NGI in Oslo on 12th June with representatives from all the 15 partners present. The project will have a duration of four years and a total budget of 10 mill. € from the EU research program Horizon 2020. Roughly 50 % of the budget will be spent on direct mitigation measure by the use of nature based solutions.

The three demonstrator sites are:

- **Gudbrandsdalen, Norway**
has experienced severe flooding after extreme rainfall, with destruction of large farming areas and infrastructure. The area is well under way with the project "Laagen 2020".
- **Serchio River Basin, Italy**
has experienced extreme drought and flooding. A new canal from a nearby lake is designed to reduce the risk.
- **The Pyrenees, France-Spain**
Flooding and landslides due to climate change is a severe problem in the Pyrenees.

In addition there are two small-scale complementary concept cases:

- **Isar River Basin, Germany**
An area threatened by flooding and erosion. Some mitigation measures have been established, but a systematic evaluation of these measures is required.
- **Kaunertal Valley, Austria**
Landslides, rock-falls and debris flows caused by extreme weather. Sees great value in the use of nature based solutions.

The Norwegian Geotechnical Institute (NGI) is a leading international centre for research and consulting within the geosciences. NGI develops optimum solutions for society, and offers expertise on the behaviour of soil, rock and snow and their interaction with the natural and built environment.

NGI works within the markets Offshore energy; Building, construction and transportation; Natural hazards, and Environmental Engineering.

NGI is a private foundation with office and laboratory in Oslo, branch office in Trondheim, and daughter companies in Houston, Texas, USA, and Perth, Western Australia. NGI was established in 1953.

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