



SCALGO Live as project tool

# Providing added value during the planning process

SCALGO Live is a popular tool at the International engineering consultancy company, NIRAS. Here, SCALGO Live provides understanding, guides the direction of a project and enables the engineers to consider climate adaptation in all relevant projects. This saves time in the planning phases, provides more coherent projects and provides additional value for the customer.

Johan Harkjær Kristensen is a consulting engineer at NIRAS and works in the drainage industry. He experiences that there is an increasing demand and economic reasoning in including climate adaptation initiatives in projects that are undergoing land leveling or draining. This requires holistic thinking, an ongoing work flow with continuous assessments and optimizations of solution scenarios. SCALGO Live is an essential part of accompanying these demands, and that makes SCALGO Live a very valuable tool.

## Insight and direction in the projects

SCALGO live is an integrated part of the projects and is especially used in the initial project phases to give insight and direction. SCALGO Live is both fast and easy to use. It saves time, and the solutions has improved in a number of the project phases.

## Additional value for the customers

Through co-production and punctual precision, SCALGO Live enables you to incorporate climate adaptation and solutions into challenges with surface runoff in every project, where you e.g., must incorporate land leveling or drainages, even though it was not initially planned. Thus, additional value is created for both the customers and citizens.

**“We are able to conduct a quick risk analysis with SCALGO Live and immediately see if there is any problems, and what we should focus on”**

Johan Harkjær Kristensen,  
Civil Engineer, NIRAS

**NIRAS**

## SCALGO Live helped with

- Screening
- Creating understanding and direction in the initial stages of a project
- Processing data and overview
- Exporting data to advanced hydraulic programs

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**SCALGO**

## Collection of data

When Johan creates a general picture of a project area, he uses SCALGO Live to get an overview and find the areas that he must focus on e.g., a visual inspection or surveying:

*“SCALGO Live is the first thing I use. It provides a great overview of the watershed, the grade profile and other possible flow paths.”*

In SCALGO Live, both the water flow analysis and the geo data are useful to Johan during the data collection and overview phase.

## Defining the problem

NIRAS uses the watershed tool in SCALGO Live to quickly and easily find the geographical areas which are problematic or must be classified as a priority area. Thereafter, a quick screening and visualization in SCALGO Live is used to consider climate adaptation and solutions to existing challenges in connection with surface runoff in e.g., a two pipe separated sewage system.

## Suggestions to additional drainage systems and retention basins

Working with the terrain instead of against it gives holistic and economically effective projects. When a possible solution is drawn up, NIRAS uses the Depression Map in SCALGO Live to view how many m<sup>3</sup> of water, that can be retained in the watershed together with which effect it will have.

To get an overview, Johan uses the terrain editing tools to investigate and compare the different solution scenarios. The terrain profile can be used to assess which solution scenarios are relevant and which are irrelevant: where can the water be led and how far must we go to reach the right level? Can the water be directed in the optimal direction and what is the slope of that direction?

Before NIRAS used SCALGO Live, the corresponding analyses were made in GIS-programs, but the analyses were comprehensive, time consuming and less concrete than those in SCALGO Live. The main difference is in the ability to adjust the rain volume. Most

GIS-programs only calculates the maximum water in a depression, whereas SCALGO Live provides the ability to adjust the rain volume.

## Hydraulic calculations

After the relevant solution scenarios are chosen, Johan and his colleagues use the export function in SCALGO Live to extract the relevant data and use the data when calculating the hydraulic models. For example can the elevation model for a relevant area be precisely calculated and exported into a dynamic calculation tool in order to function as the foundation for the calculations and qualification of the chosen solutions.

***“It is very valuable to see whether a proposed solution has any effect. The program is like a very fast GIS-program with a fantastic interface. It is quick, and we always bring it along when we talk with customers”***

*Johan Harkjær Kristensen,  
Civil Engineer, NIRAS*

## Regulatory Matters

With the interactive interface and dynamic visualizations, SCALGO Live can be used as a dialogue supportive tool in the regulatory process.

## Ready for detailed planning

The visual expression in SCALGO Live, makes it ideal to visualize and obtain understanding for the project, when it is presented, both written or orally.

75 employees at NIRAS use SCALGO Live, and the tool functions as an integrated part of many different projects. Here, it gives inspiration and value through all project phases. SCALGO Live is essential, especially in the initial project phases, as it optimizes projects and provides additional value in e.g., use of less resources and a inclusion of climate adaptation in products with other primary objectives.

## Project stages

