DIGIRES

Digitally-enabled green infrastructure for sustainable water resources management in Latin America and the Caribbean

Deliverable D2.1

Toolbox with project-specific tools for MAR planning and assessment
Further development of the INOWAS web-based modelling platform

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https://www.digires.inowas.com

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Summary

The INOWAS modelling platform www.inowas.com is an open-source web-service developed to support planning and assessment of managed aquifer recharge schemes. The platform is accessible from web browser and includes simulation tools of varying complexity. At its core, the platform provides the user with features to set up, run and analyse numerical groundwater flow and transport models based on the USGS MODFLOW family and the possibility to compare various groundwater management scenarios.

To access the full functionalities of the platform, free user registration is required. This allows for the account-based simulations where the current work status can be saved at any time for later continuation and can be shared with other users. Comprehensive online documentation including the theoretical background, the restrictions and equations as well as default examples are accessible on the platform web site.

Among the tools included are empirical tools derived from data mining (such as the Global MAR Portal, a tools for the design of infiltration basins, a database for GIS-based site suitability mapping, etc.), analytical tools based on simple equations (assessment of saltwater intrusion, calculation of pumping-induced river drawdown, estimation of groundwater mounding beneath an infiltration basin, etc.), and numerical tools for the MODFLOW-based setup and calculation of numerical groundwater models. The user-friendly scenarios management and analysis allows for a flexible interpretation of results and future predictions.
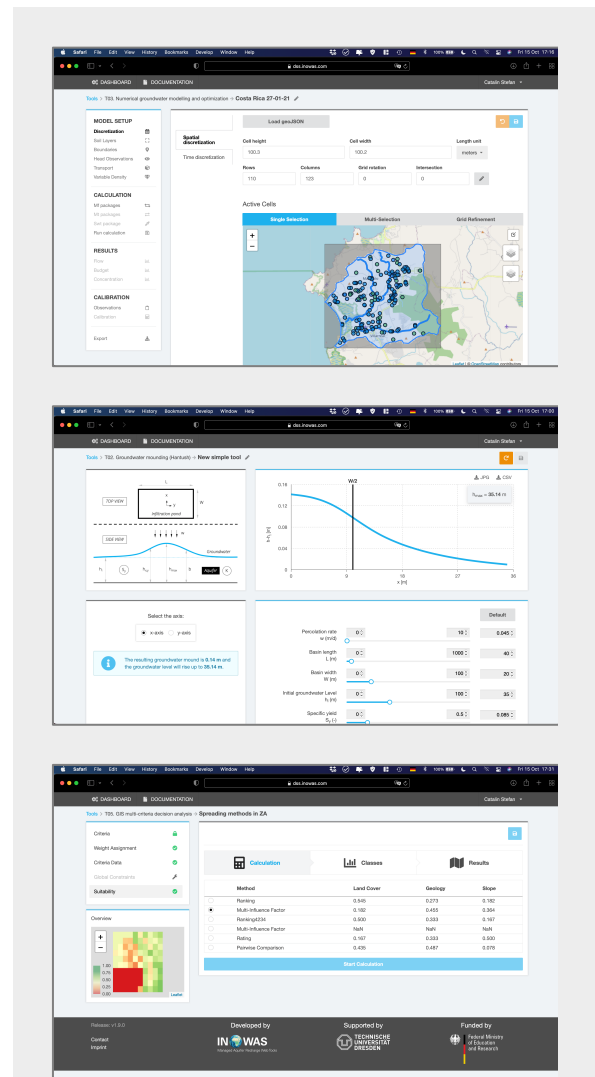
The INOWAS modelling platform has been further developed in the DIGIRES project to accommodate the requirements of the groundwater flow models for Recife, Brazil.

The platform can be accessed at the following link:

https://www.inowas.com