

Evaluating Nature-based Solutions Aimed at Soil Carbon Sequestration Through Land Use Change

Citation for published version (APA):

Bogatinoska, B., Lansu, A., Stoorvogel, J., & Dekker, S. C. (2022). *Evaluating Nature-based Solutions Aimed at Soil Carbon Sequestration Through Land Use Change*. 1. Abstract from AGU22 Fall Meeting, Chicago, Illinois, United States. <https://agu.confex.com/agu/fm22/meetingapp.cgi/Paper/1144175>

Document status and date:

Published: 15/12/2022

Document Version:

Publisher's PDF, also known as Version of record

Please check the document version of this publication:

- A submitted manuscript is the version of the article upon submission and before peer-review. There can be important differences between the submitted version and the official published version of record. People interested in the research are advised to contact the author for the final version of the publication, or visit the DOI to the publisher's website.
- The final author version and the galley proof are versions of the publication after peer review.
- The final published version features the final layout of the paper including the volume, issue and page numbers.

[Link to publication](#)

General rights

Copyright and moral rights for the publications made accessible in the public portal are retained by the authors and/or other copyright owners and it is a condition of accessing publications that users recognise and abide by the legal requirements associated with these rights.

- Users may download and print one copy of any publication from the public portal for the purpose of private study or research.
- You may not further distribute the material or use it for any profit-making activity or commercial gain
- You may freely distribute the URL identifying the publication in the public portal.

If the publication is distributed under the terms of Article 25fa of the Dutch Copyright Act, indicated by the "Taverne" license above, please follow below link for the End User Agreement:

<https://www.ou.nl/taverne-agreement>

Take down policy

If you believe that this document breaches copyright please contact us at:

pure-support@ou.nl

providing details and we will investigate your claim.

Downloaded from <https://research.ou.nl/> on date: 05 Dec. 2023

Open Universiteit
www.ou.nl



B43A-08 - Evaluating Nature-based Solutions Aimed at Soil Carbon Sequestration Through Land Use Change



Thursday, 15 December 2022



19:10 - 19:20



McCormick Place - S502ab (South, Level 4)

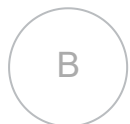
Abstract

Soil carbon sequestration is receiving increasing attention as a process that could mitigate climate change. Our land, together with the oceans, represent our biggest “carbon sinks”, absorbing more than half of all greenhouse gas emissions. Soil carbon sequestration may require major management changes and interventions. Nature-based solutions co-created with stakeholders may be efficient and lead to higher levels of soil carbon sequestration. An *ex-ante* evaluation of the impact of the nature based solutions may help informed decision making.

This study aimed to develop a modelling framework that allows to evaluate the soil carbon stocks under two different land use scenarios for the Aa of Weerijs catchment on the Dutch-Belgium border: i) existing situation (with traditional engineering measures such as dams and levees) and ii) a co-designed nature based solution scenario. Modelling was based on remotely sensed land cover data, in-situ historical data on soil carbon stocks, detailed soil maps and hydrological data. A loosely coupled hydrological and soil organic carbon model were run iteratively to soil organic matter stocks in different scenarios for smaller brook catchments.

Results show simulated SOC evolution until 2100 under existing engineeringly ‘improved’ or naturally ‘improved’ – nature based solution management and under different climate change scenarios. After the measures, we expect soil carbon stocks to rise faster and higher in contrast to the other scenario.

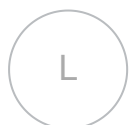
First Author



Borjana Bogatinoska

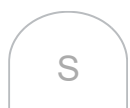
Open Universiteit

Authors



Angelique Lansu

Open Universiteit



S


[Jetse Stoorvogel](#)

Wageningen University and Research

Open Universiteit


D

[Stefan C Dekker](#)

Utrecht University

View Related
