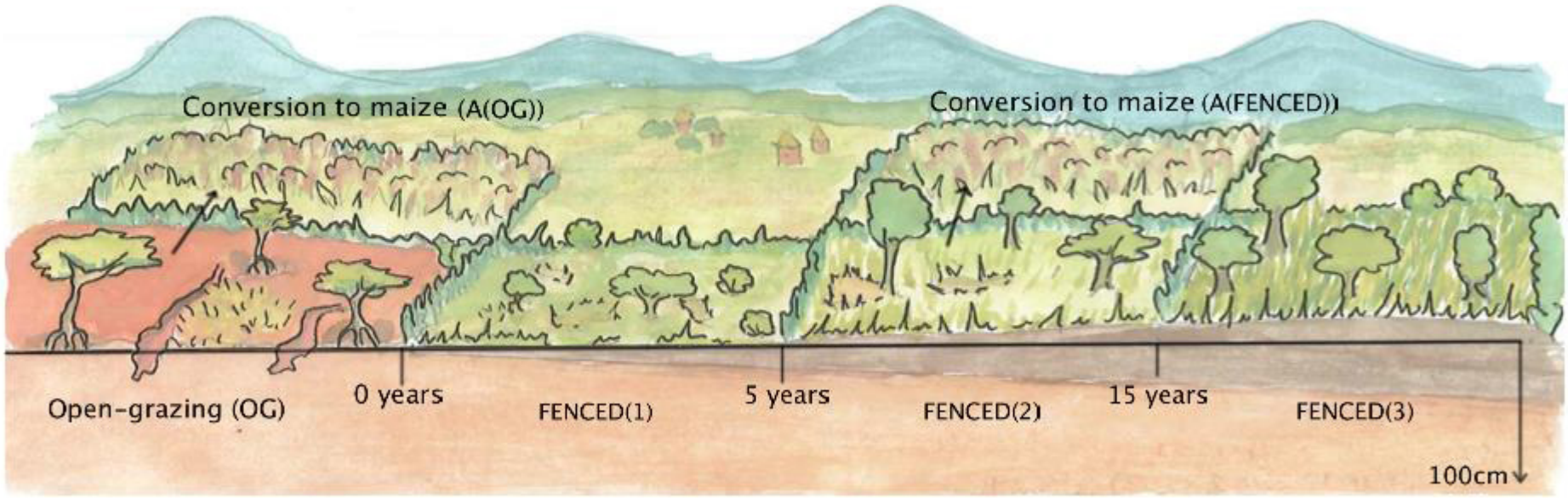
Carbon sequestration in the pastoral area of Chepareria, western Kenya

– A comparison between open-grazing, fenced pastures and maize cultivations

Sara Svanlund



The overall aim of the paper was to test the hypothesis that soil carbon sequestration in these tropical soils is enhanced, resulting in increased levels of soil organic carbon, when open-grazed pastures are fenced and the regrowth of vegetation inside the enclosures is promoted with a rotational grazing regime.

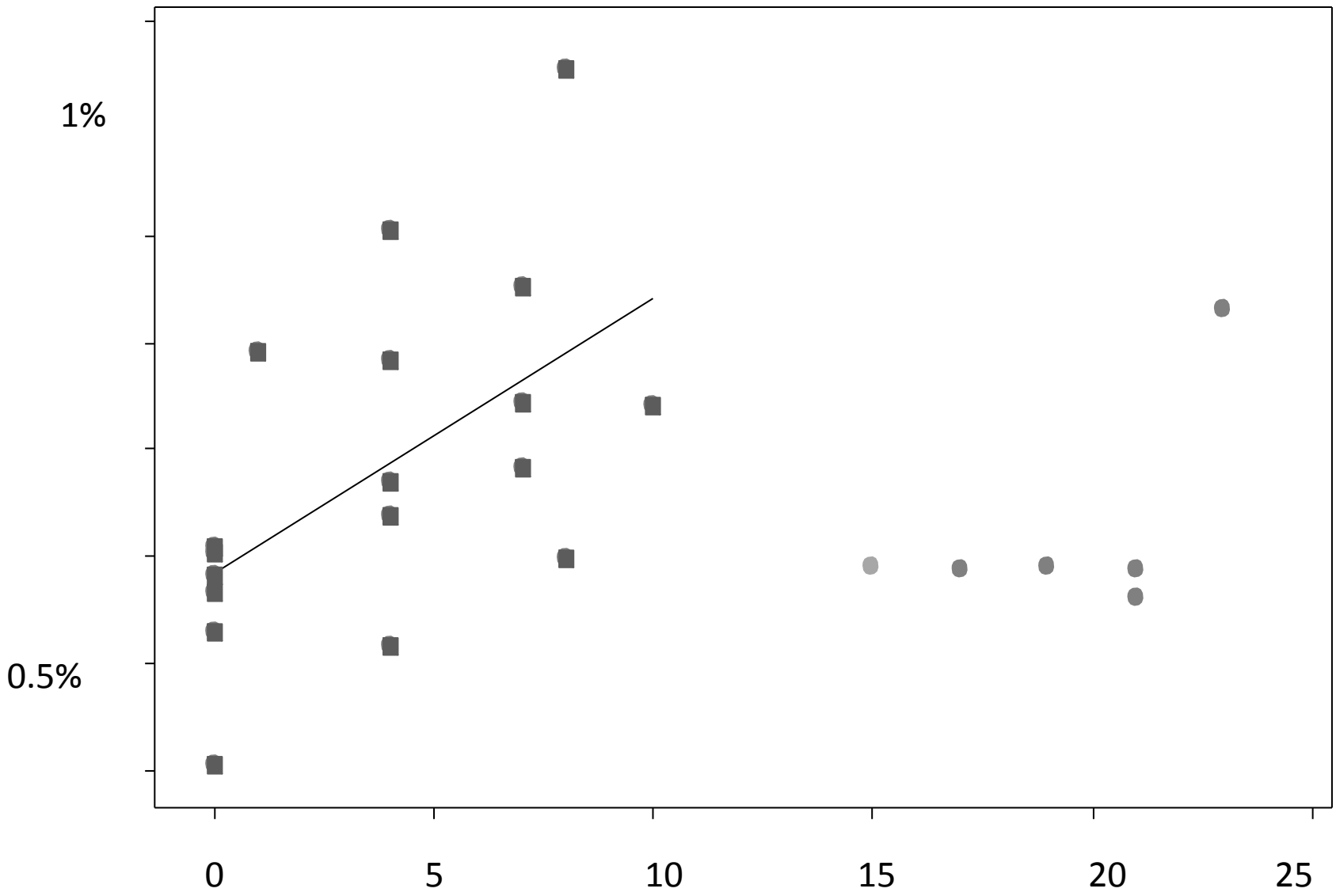
Quantifying the amount of carbon in the soil of
(1) grazed enclosures of different ages;
(2) maize cultivations; and
(3) unfenced, continuously grazed control plots.

To answer the questions:

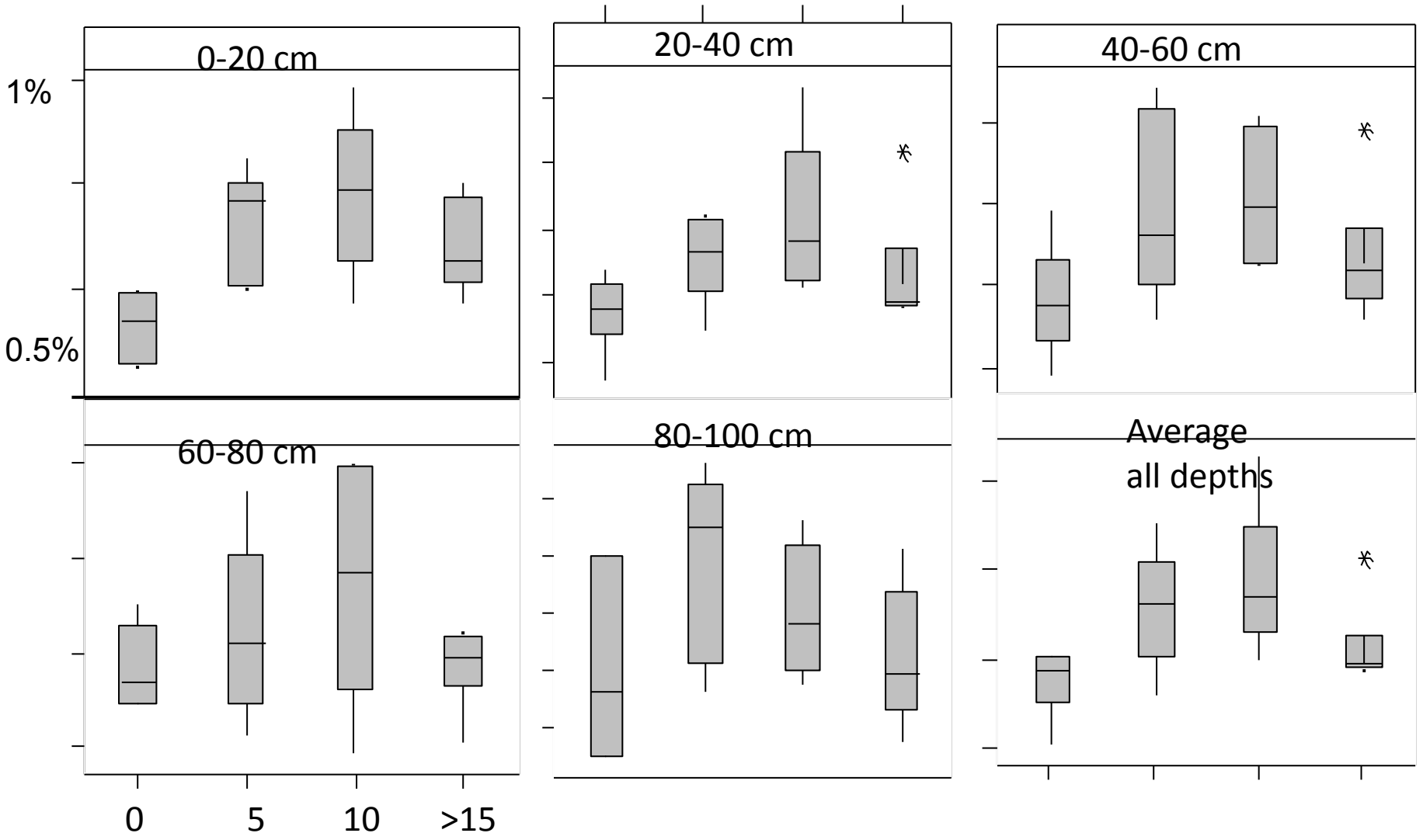
- How is the amount of carbon in a pastoral soil affected when the density of grazers is controlled with a fence, and how does the carbon content change with duration of treatment?

- How are the primary producers of SOC (trees and vegetation) affected by fencing?

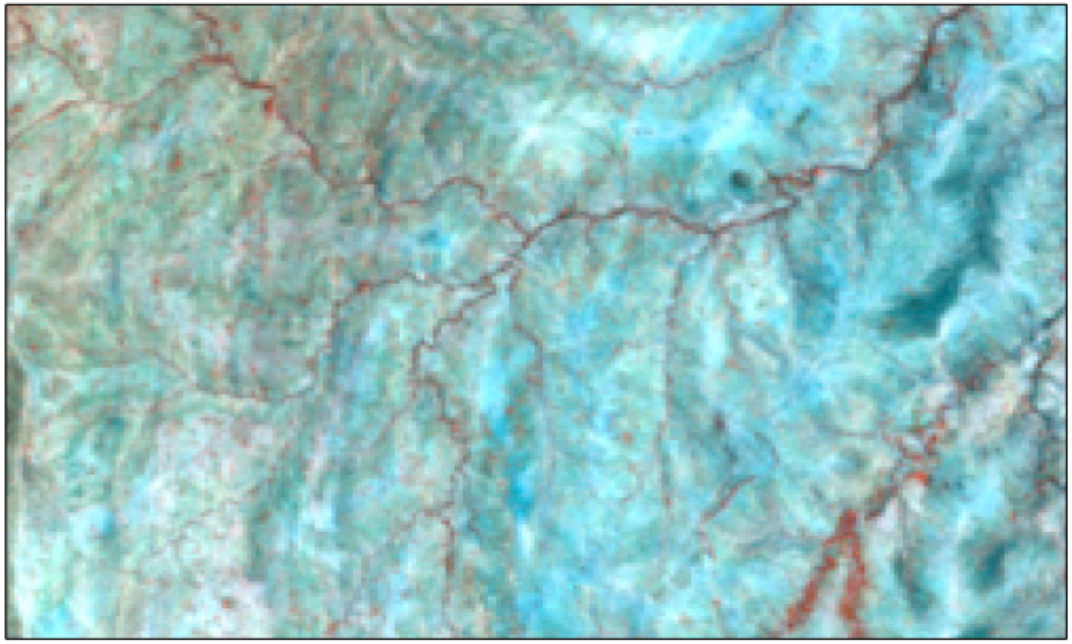
- What happens with the carbon content when an open-grazing system is replaced with maize cultivation, and is the effect on carbon different if a fenced pasture is cultivated?


Soil C%
1%
0.5%
0
5
10
15
20
25

Comparison of the SOC over different durations, in all soil layers, with values expressed in %



Anna Hallmén



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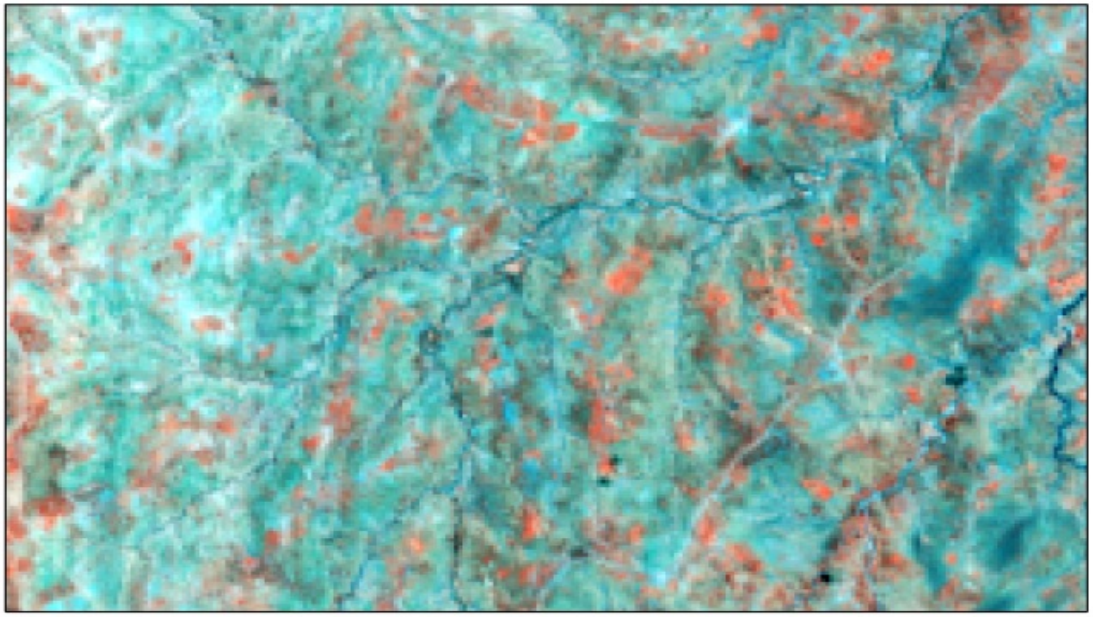

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