Do you think we have been experiencing more or less rainfall over the last 10 years ?

vrt nws

Drought of summer 2018 recognized as agricultural disaster, Farmers' Union: "Important signal from government"

vrt nws

"2020 is already on the list of years with prolonged drought"

DeMorgen.

in map

Flanders is becoming extremely dry. How is the drought in your region?

2017 2018 2019 2020 2021 2022 2023 2024 2025 ???

BBC

Europe floods: At least 120 dead and hundreds unaccounted for

16 July 2021

The Brussels Times

Belgium beats 119-year-old record with nine months of excessive rainfall

Tuesday 9 July 2024 TBT+

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Performance of controlled drainage in tile-drained agricultural field using scenario analysis with soil-plant modelling code SWAP

Guillaume Blanchy, Sarah Garré
Erika Rodriguez

Symposium SWAP 50 years
Wageningen University – November 2024

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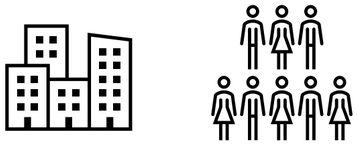
Excessive drainage in Flanders

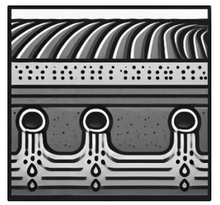
20% reduction of groundwater recharge

In urban areas



More than 6.7 million people

In agricultural fields



Tile drainage and ditches

✓ Controlled drainage ->alternative water management

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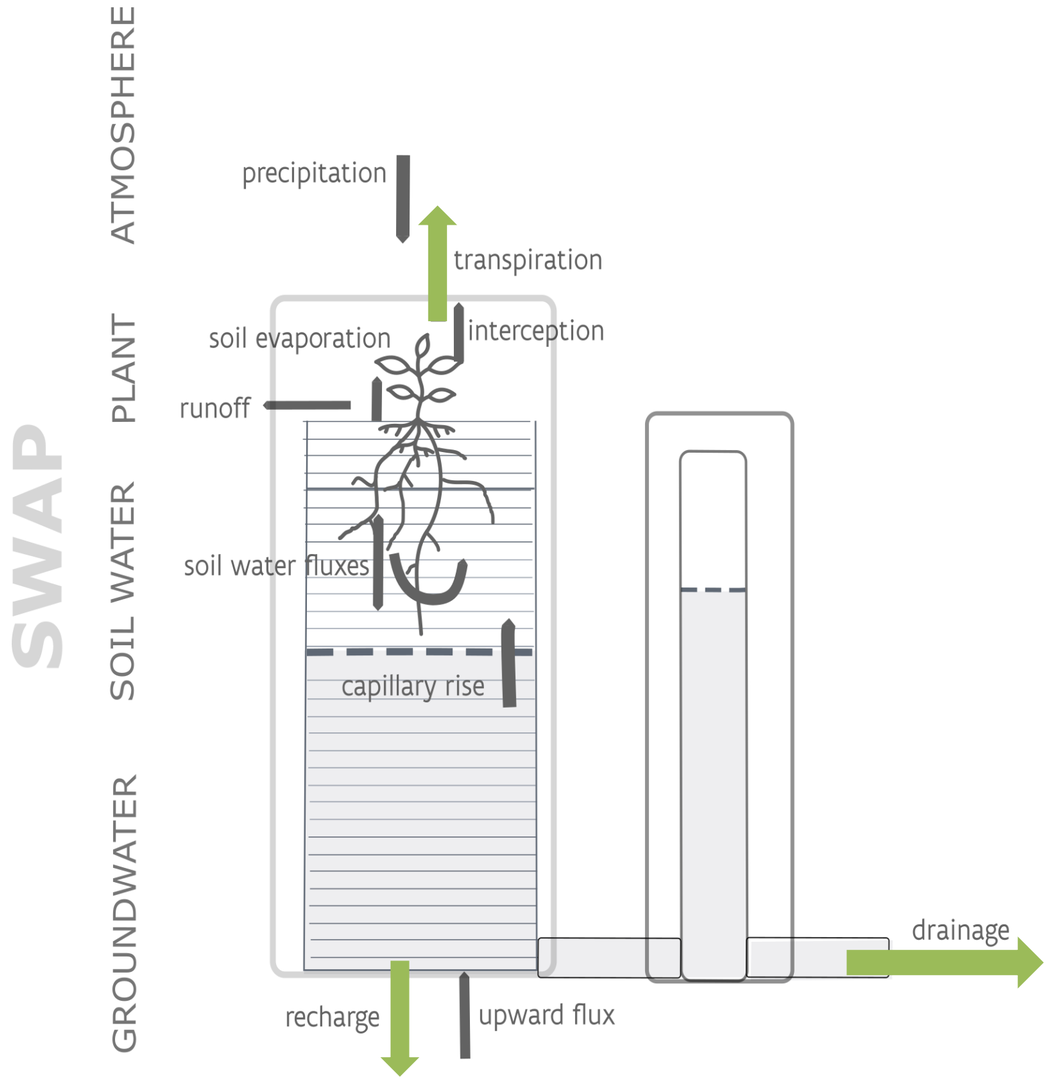
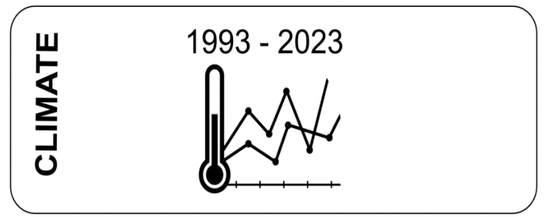
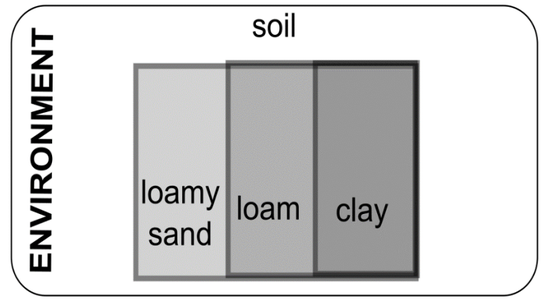
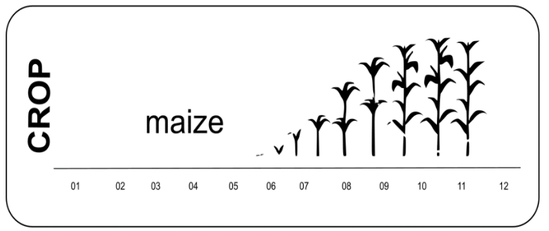
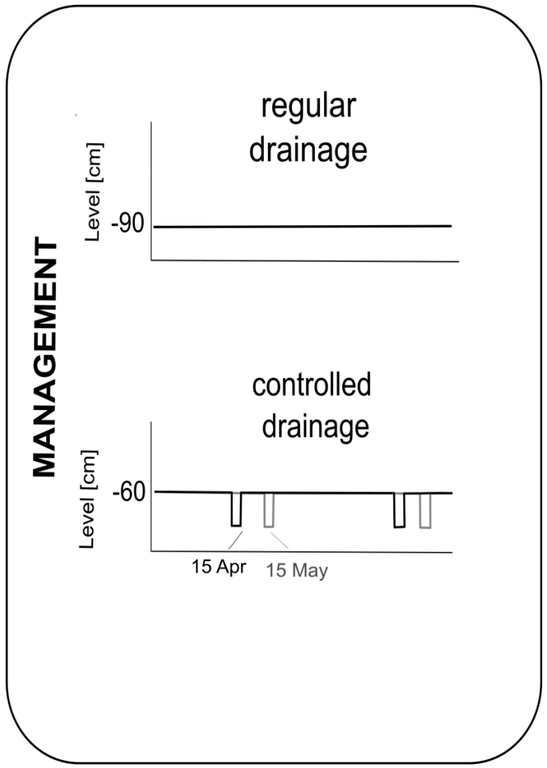
Model structure and scenarios











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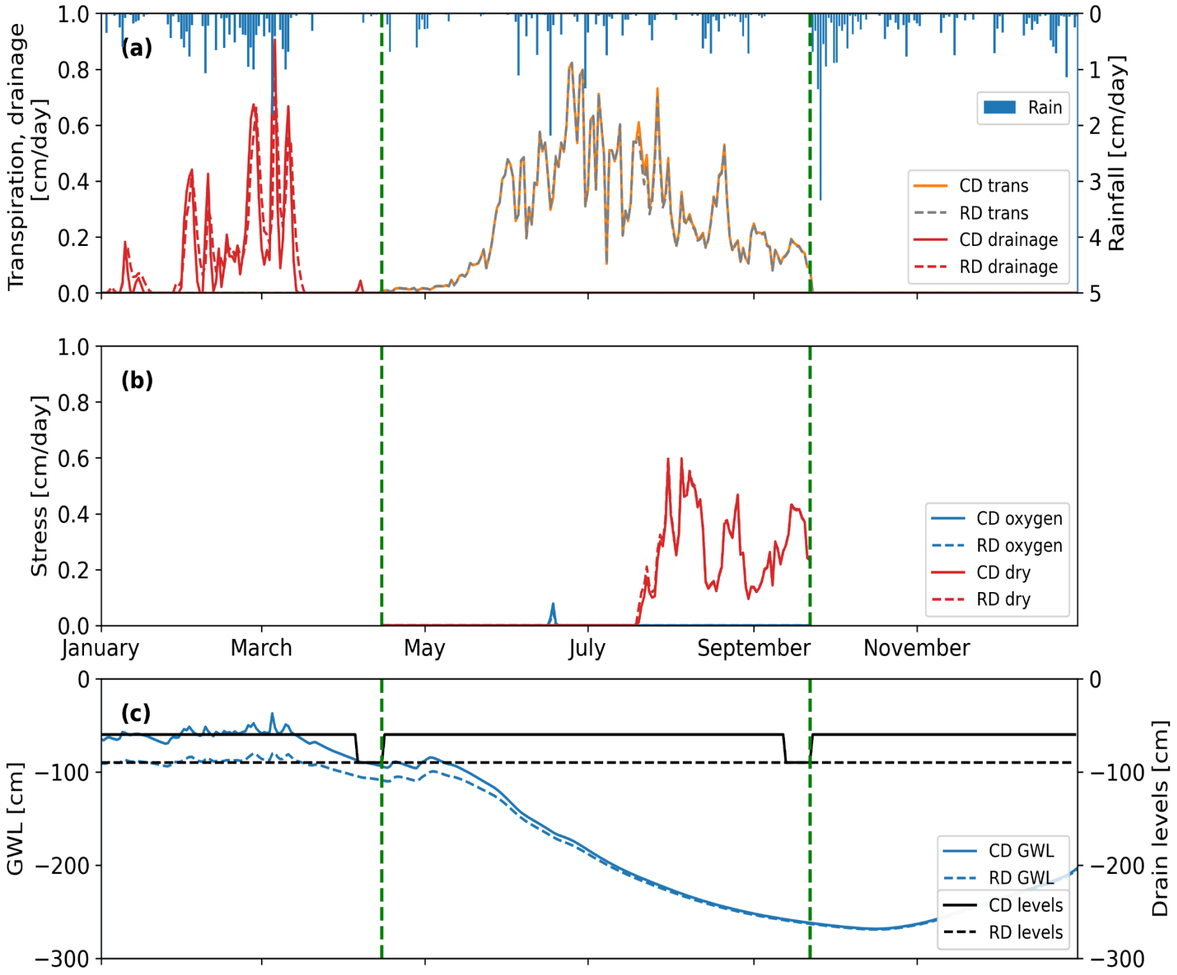
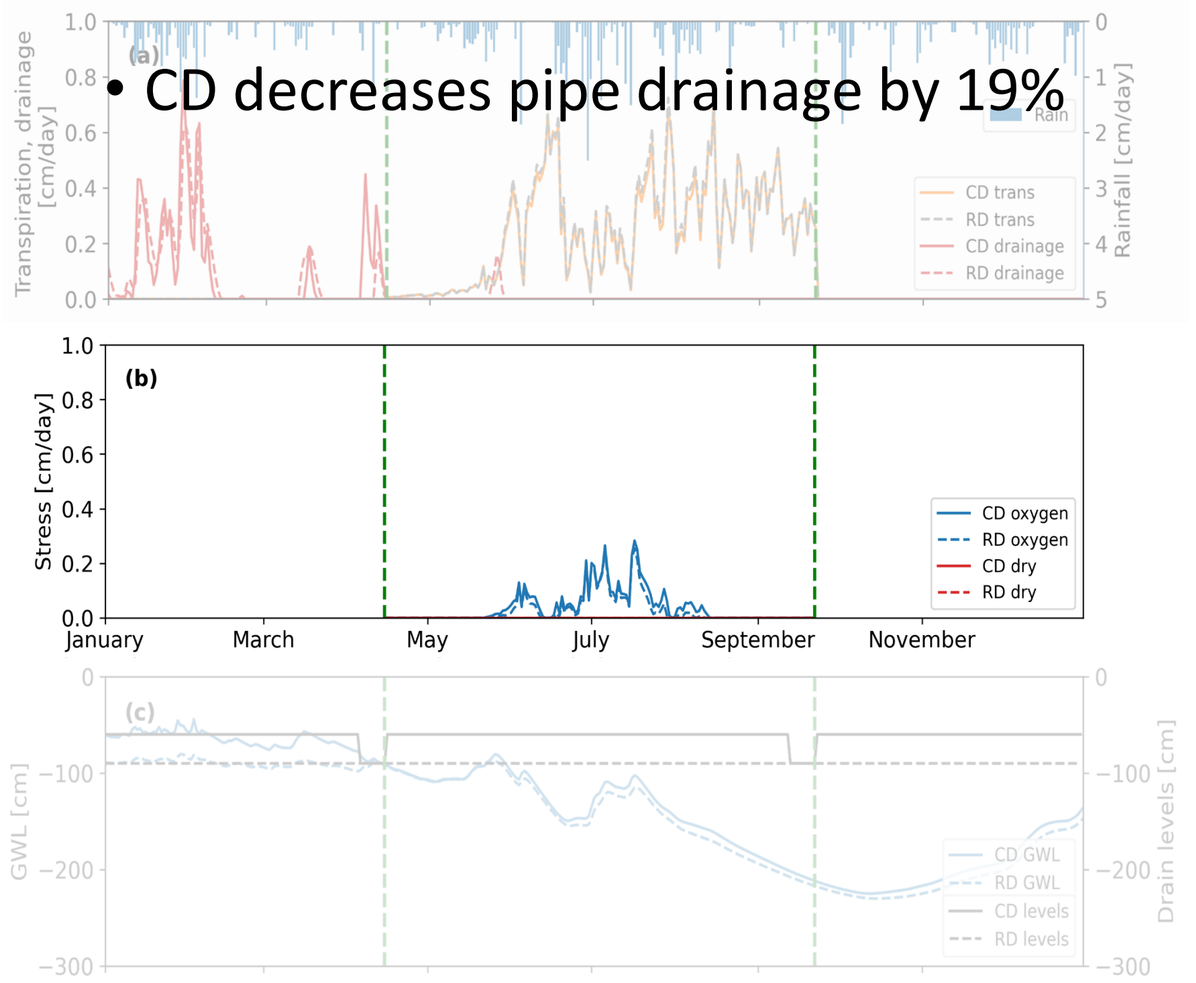
Dry year of 2020



Wet year of 2021



- CD decreases pipe drainage by 19%

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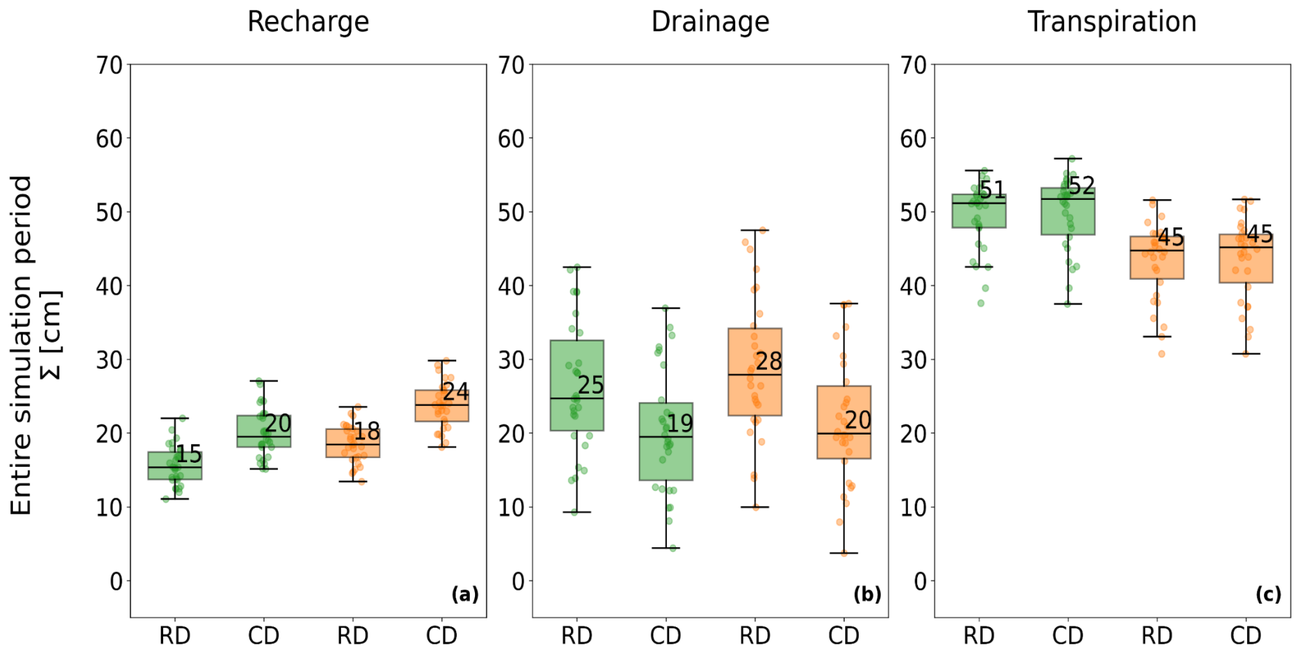
Effect of controlled drainage management

Conditions

- Two different management/sowing dates: **15 April** & **15 May**

- CD retains more water than RD
- Transpiration slightly increases **15 April**



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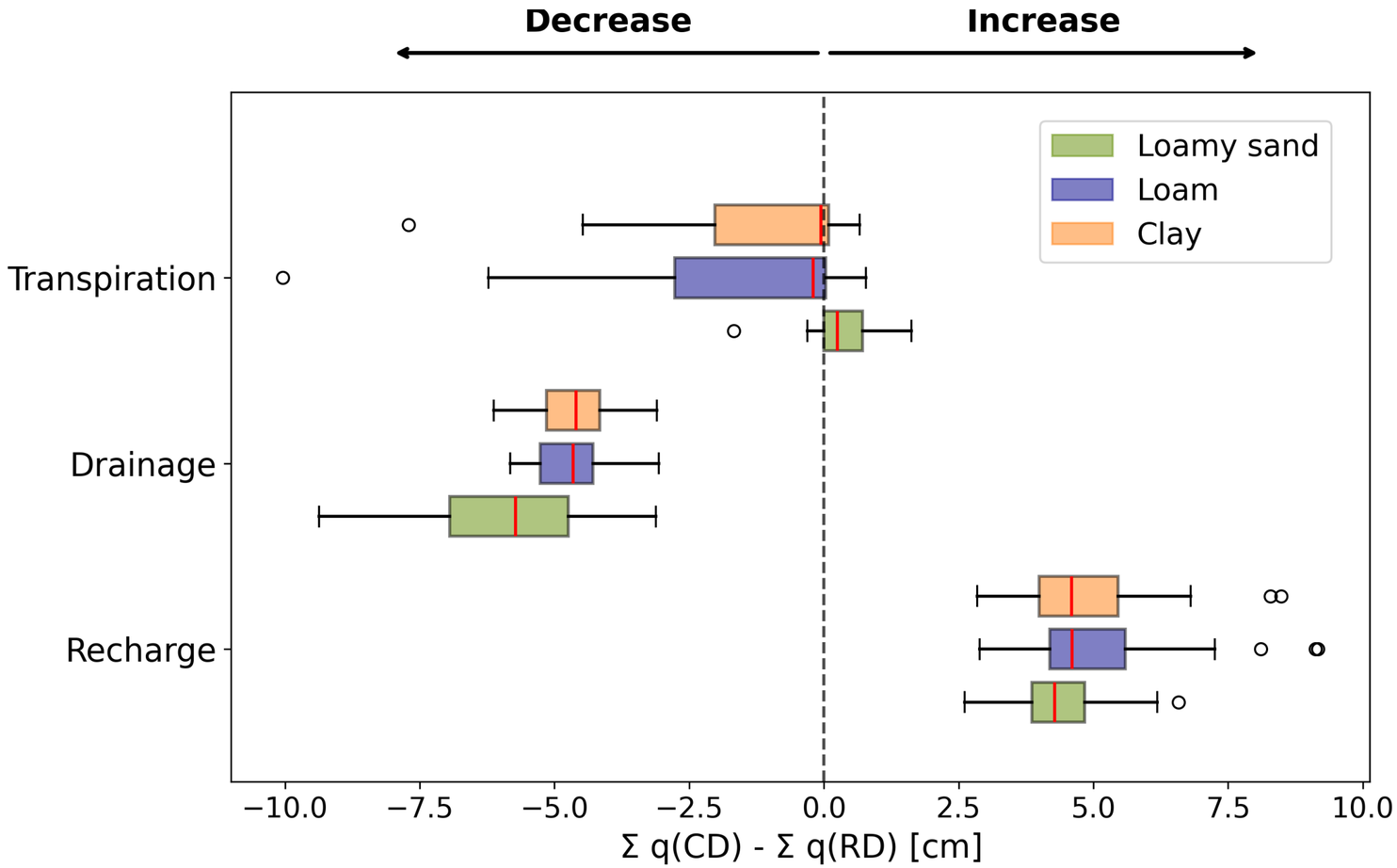
Impact of soil texture

Conditions

- Management/sowing date
  April 15th



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Combination all variables

- 30-year simulation
- Three soil textures
- Two control pit/sowing management

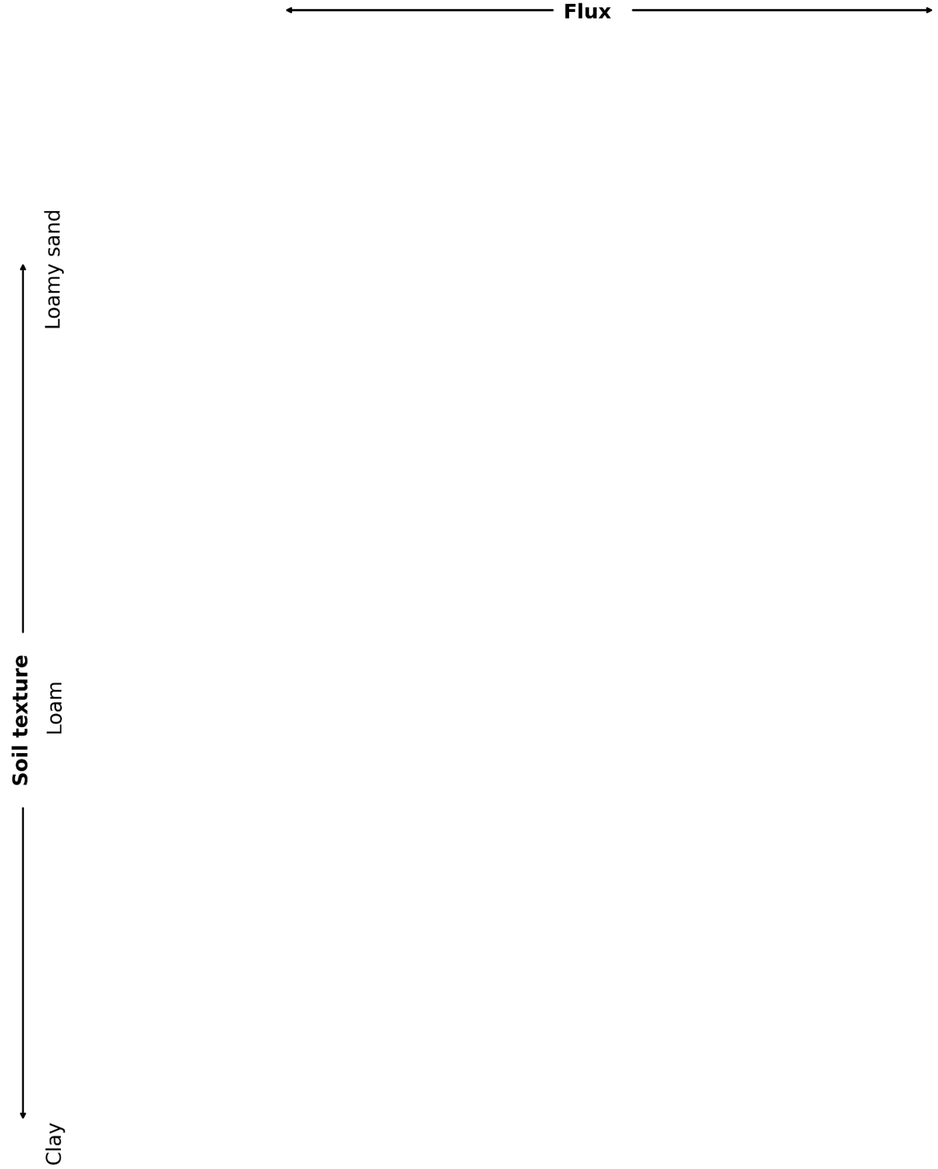
15 April & **15 May**

Compared to RD:

✓CD increases groundwater recharge

✓CD reduces pipe drainage (more in Loamy sand)

✓The impact of CD in transpiration depends on soil texture.



Conclusions

Societal benefits

- ✓ Reduce pipe drainage
- ✓ Increase groundwater recharge

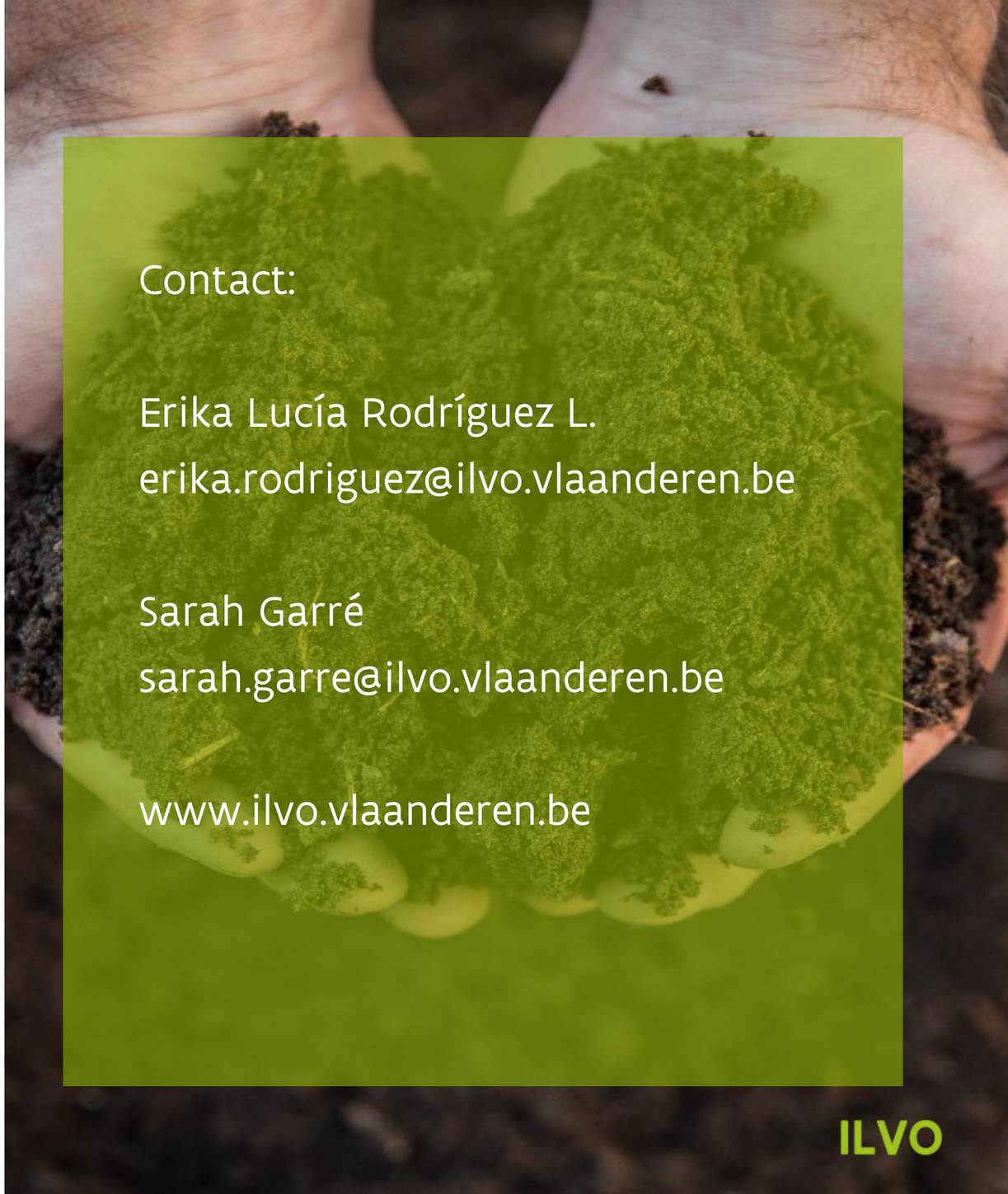
Agronomical benefits

- ✓ Only in loamy sand soils and when the controlled pit management starts earlier.

Weather conditions + timing play an important role in the distribution and amount of the water fluxes in the soil.

Thank you!

QUESTIONS?



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