



Der Schlüssel zum Wasser

Potentiale von Agroforst und Keyline Design

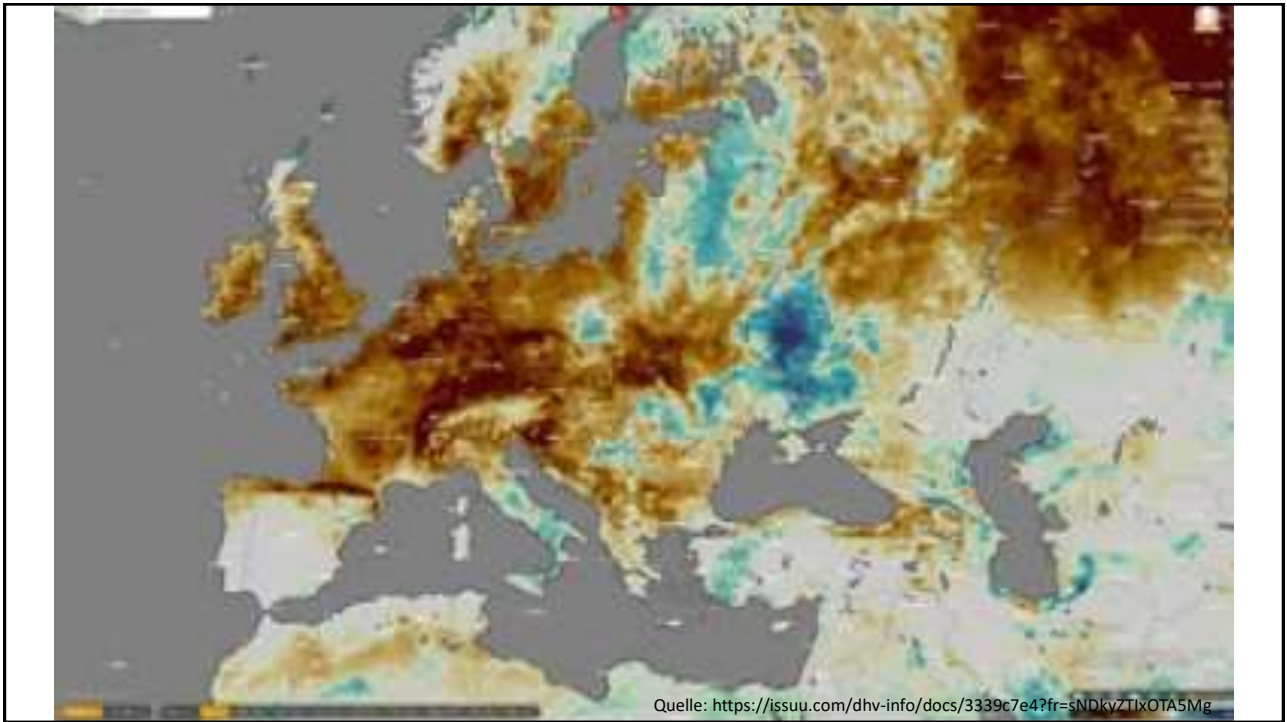
für eine klimastabile Landnutzung

Juni 2023

**Dipl.-Forstw. Dr.nat.techn. Philipp Gerhardt
baumfeldwirtschaft.de**



Teil 1: Land(wirt)schaft und Klima

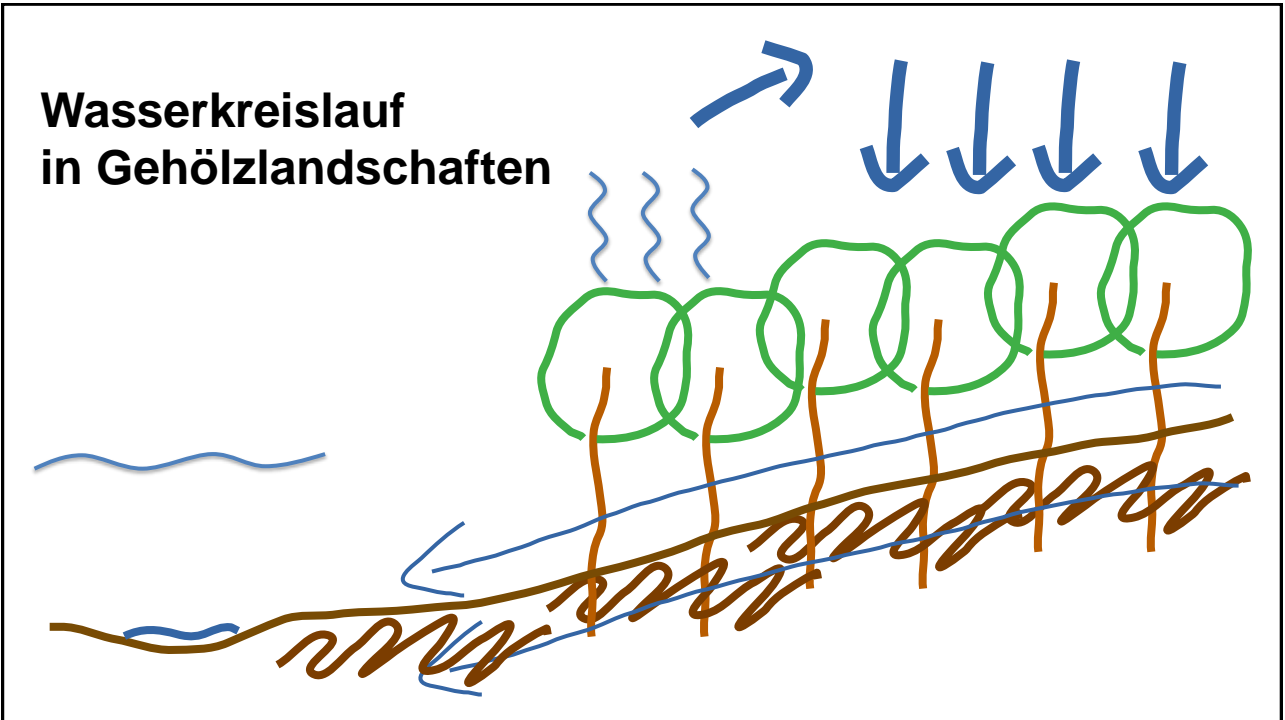




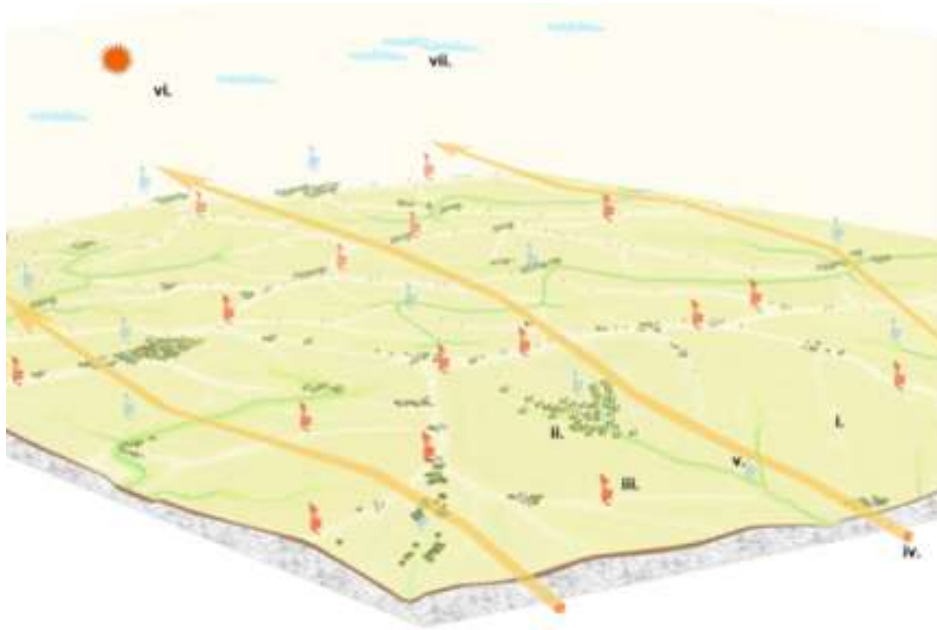
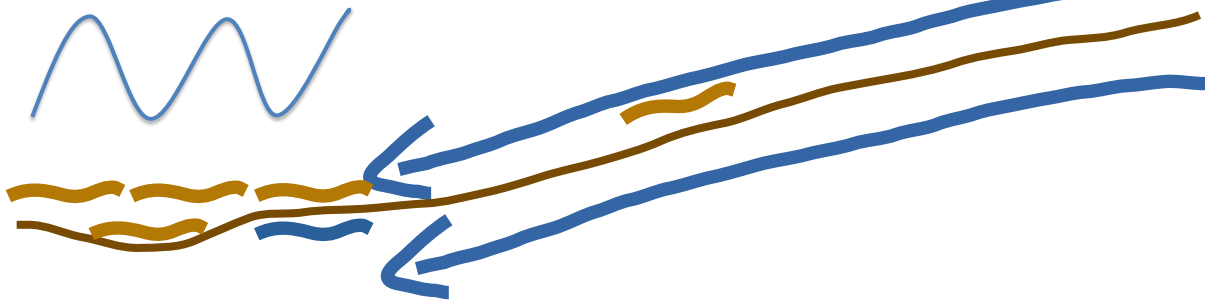
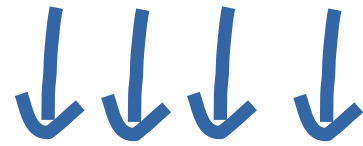
Bildquelle: <https://commons.wikimedia.org/w/index.php?curid=107715728>

Wasser als Kühlmittel

- **Bodenwasser kühlt**
- **Wasser in der Luft ist Basis für Thermik und Wolkenbildung**
- **stabile trockene Wetterlagen verstärken sich selbst**
- **heißeres Klima: Mehr Starkregen**

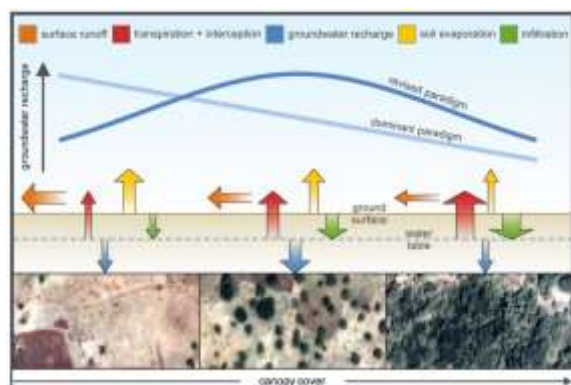
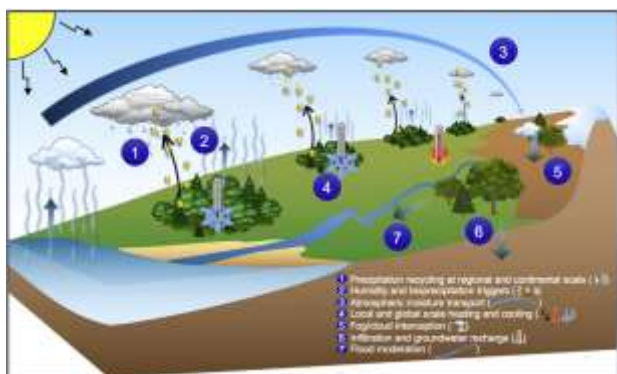


Dürre
Erosion
Vernässung
Hochwasser
Eutrophierung...

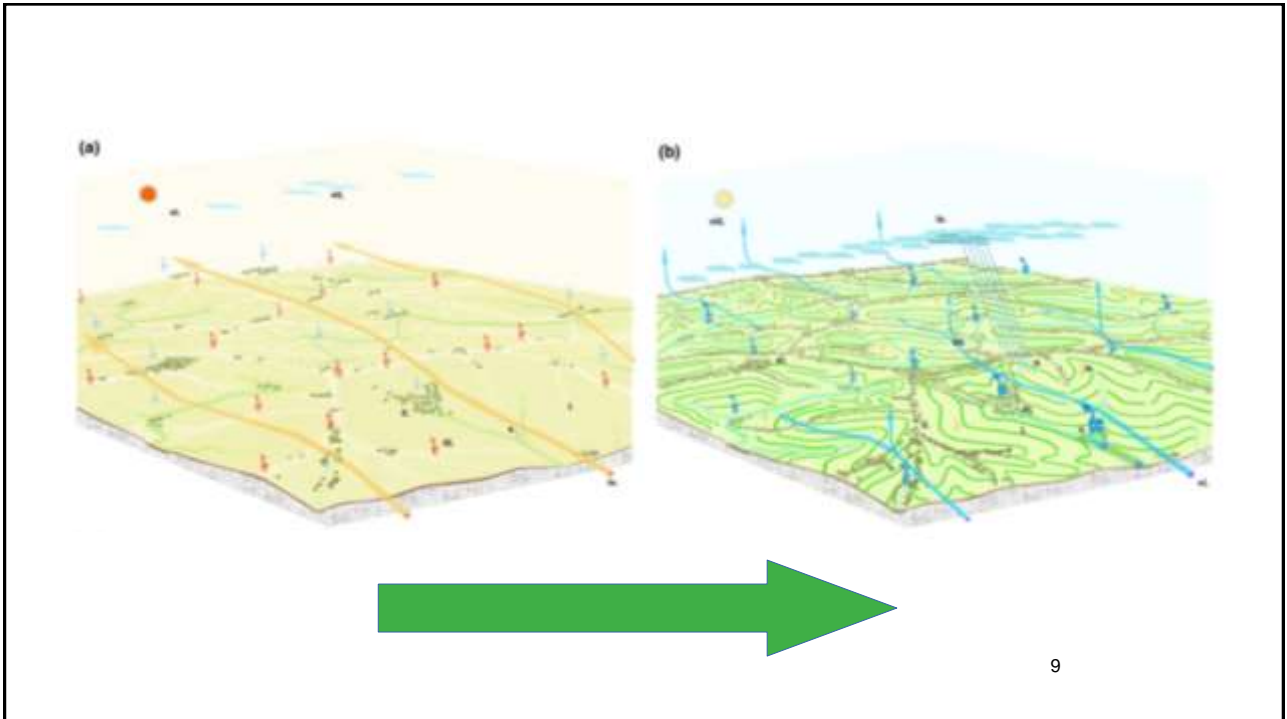


Welche Landschaft bietet
Hochwasserschutz
Dürreschutz
Bodenschutz
Gewässerschutz
Klimaschutz
+ Produktivität?

Wolken, Regen und Kühlung...



Gehölzlandschaften tragen regional und kontinental zur Wolkenbildung bei.
 Lichte Gehölzstrukturen maximieren die Grundwasserneubildung⁽¹⁹⁾.

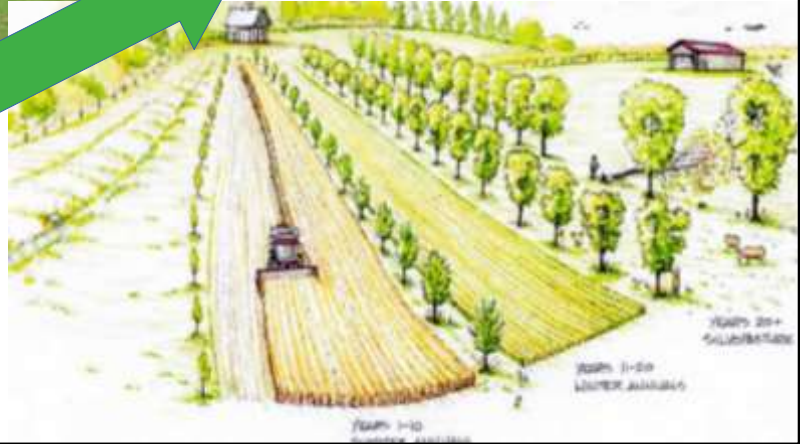


Teil 2: Agroforstwirtschaft als Teil der Lösung



Ökologisches Modell
„Wald-Weide-Landschaft“

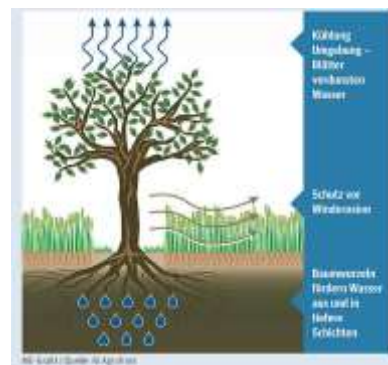
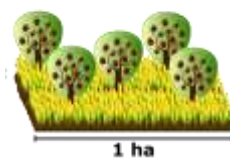
Produktionssystem Agroforst



Produktivität – Beispiele aus Brandenburg:

LER = 2,0 bis 2,9 ⁽¹³⁾

Steigerung Getreideertrag 16% ⁽¹⁸⁾



Wasserrückhalt: Verminderter Verdunstungsstress⁽¹⁸⁾

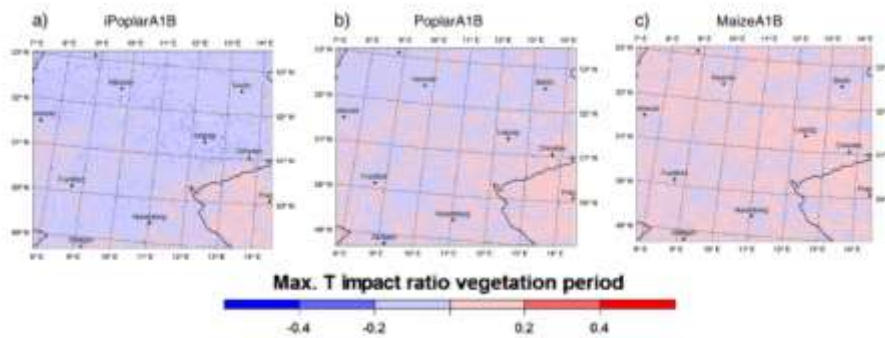


Figure 5. Impact ratio of maximum temperature during the vegetation period for (a) irrigated poplar, (b) nonirrigated poplar, and (c) maize.



Bild: milpafilms, N. Aguilar



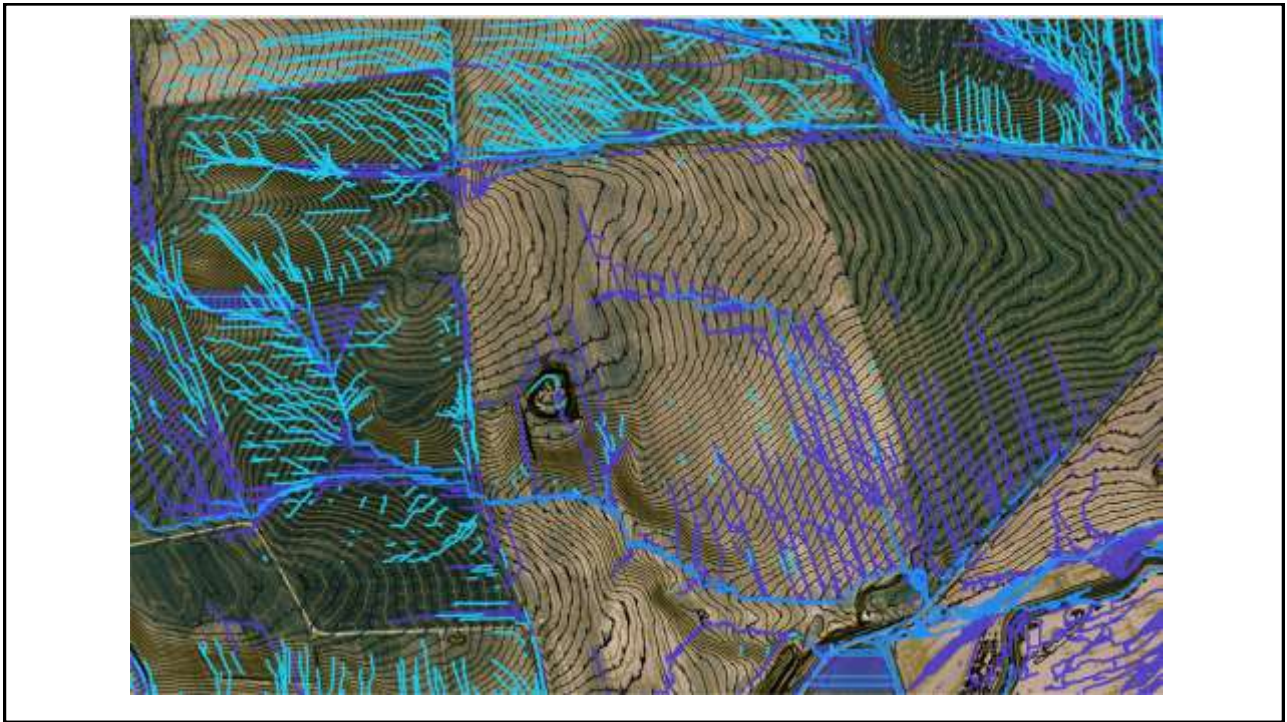


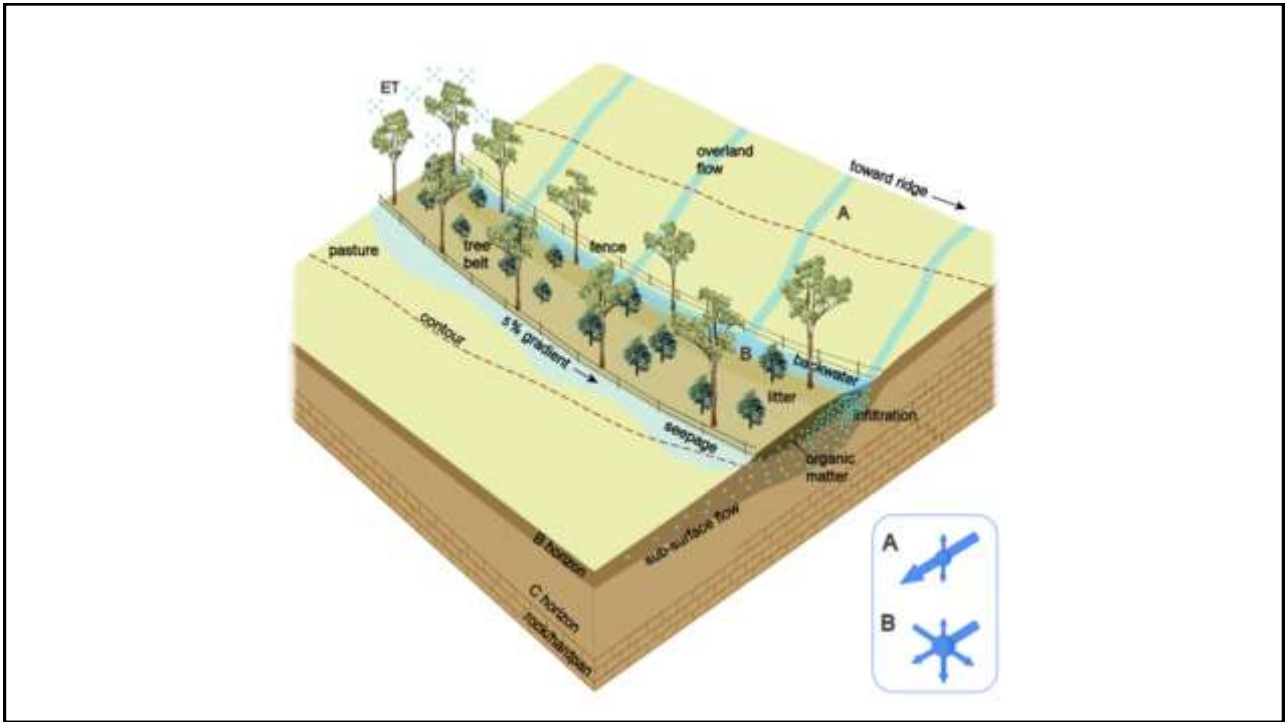


Teil 3:

Wasserrückhalt in der produktiven Fläche



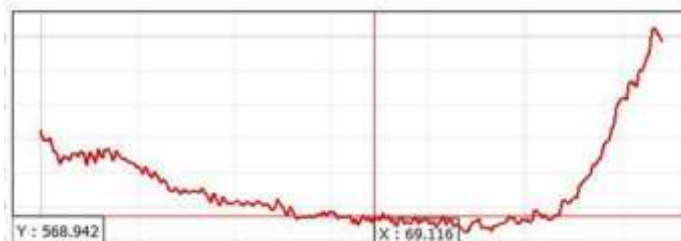
















Erosionsschutz mit Keyline-Strukturen

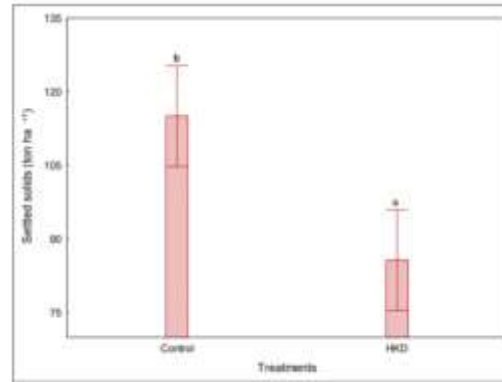
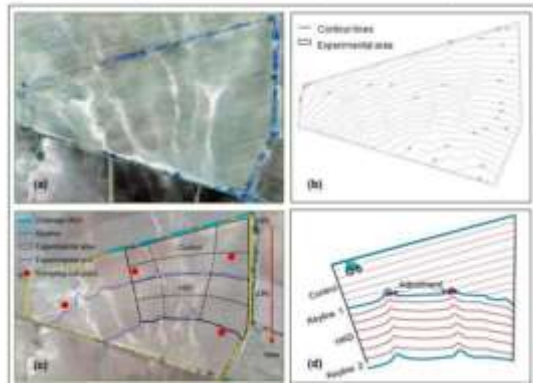
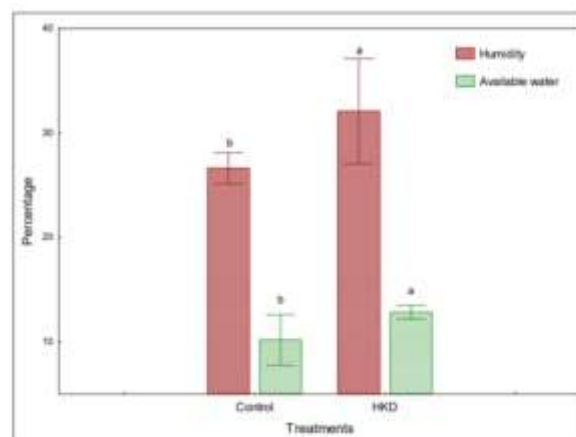


Figure 6. Average of soil ended in each treatment (n = 18).

Quelle: Ponce-Rodríguez e

Dürrevorbeugung mit Keyline-Strukturen

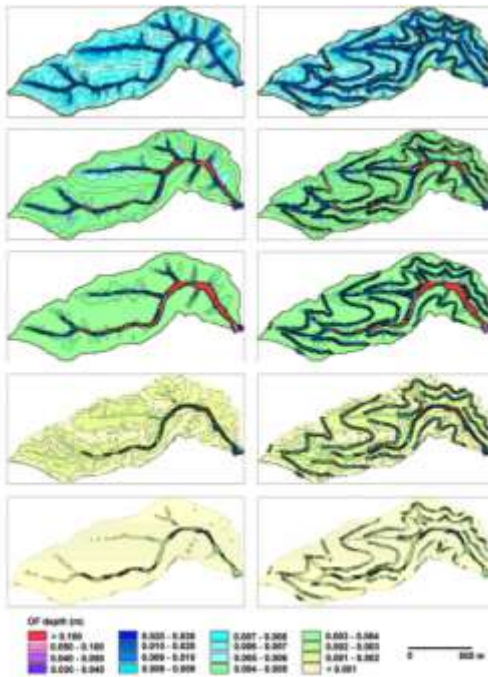


Quelle: Ponce-Rodríguez e



Keyline Design:

**Zusätzlicher
Nutzen für den
Wasserrückhalt**



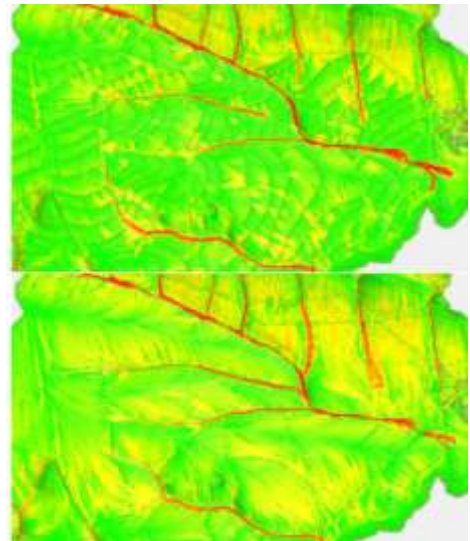
(10)

Erste Ergebnisse aus Thüringen:

Wasserrückhalt +13%

Hochwasserspitze -20%

Erosion -60%



Aufbäumen statt aufforsten!

baumfeldwirtschaft.de
instagram.com/baumfeldwirtschaft

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- 15: Udawatta et al. 2002: Agroforestry Practices, Runoff, and Nutrient Loss: A Paired Watershed Comparison.
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