# WUR intro

## Climate land water interaction
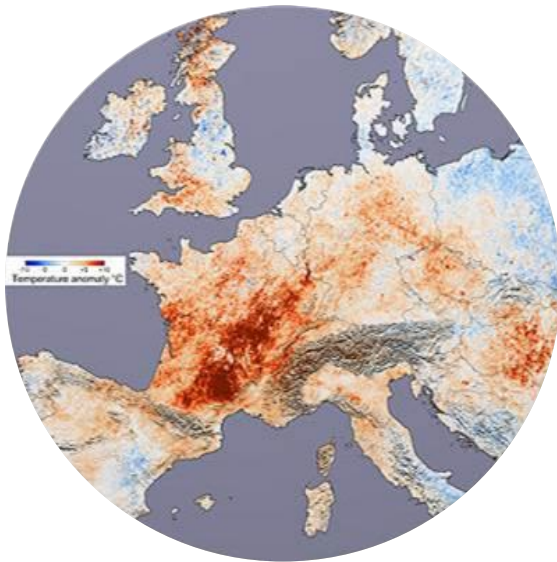
# **W**ater **S**ystems and **G**lobal Change **C**limate and **A**daptive **L**and & Water **M**gt
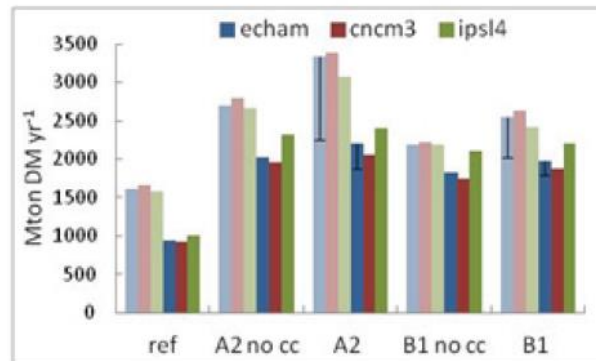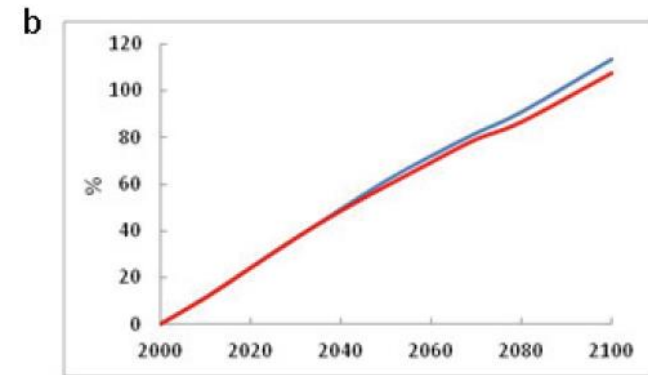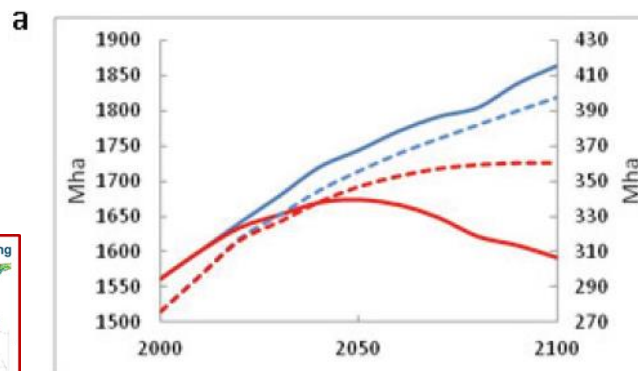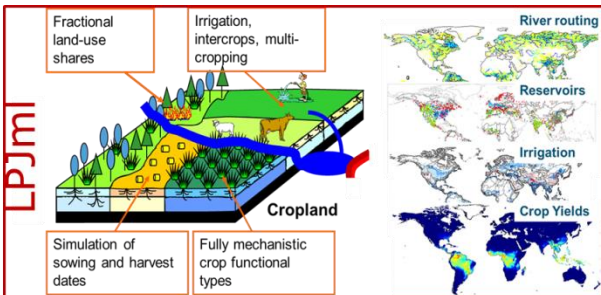
- Impacts & Adaptation CC & CV on
  - Water, Vegetation, Cities, Agriculture
  - Water Food Energy Environment NEXUS
- Impacts LUCC on CC
  - Irrigation, Urbanisation, Deforestation
- ISIMIP, WaterMIP, AgMIP
- MEDIATION, WATCH, IMPACT2C, HighNOON, HiWATER, EUPORIAS, etc.
- Climate Services, incl. seasonal forecasts

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# **W**ater **S**ystems and **G**lobal Change
# **C**limate and **A**daptive **L**and & Water **M**gt

■ Impacts & Adaptation CC & CV on

● Water, Vegetation, Cities, Agriculture

Biemans et al.
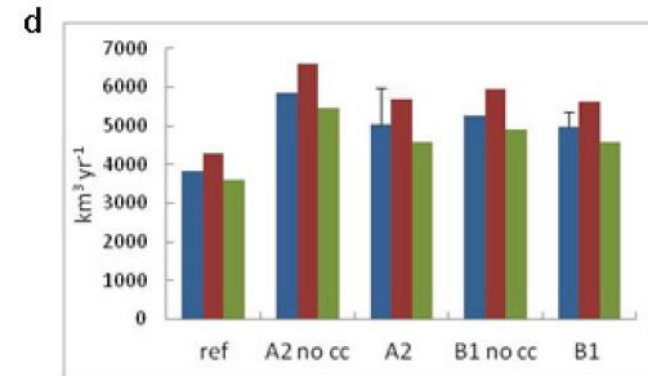
LPJml
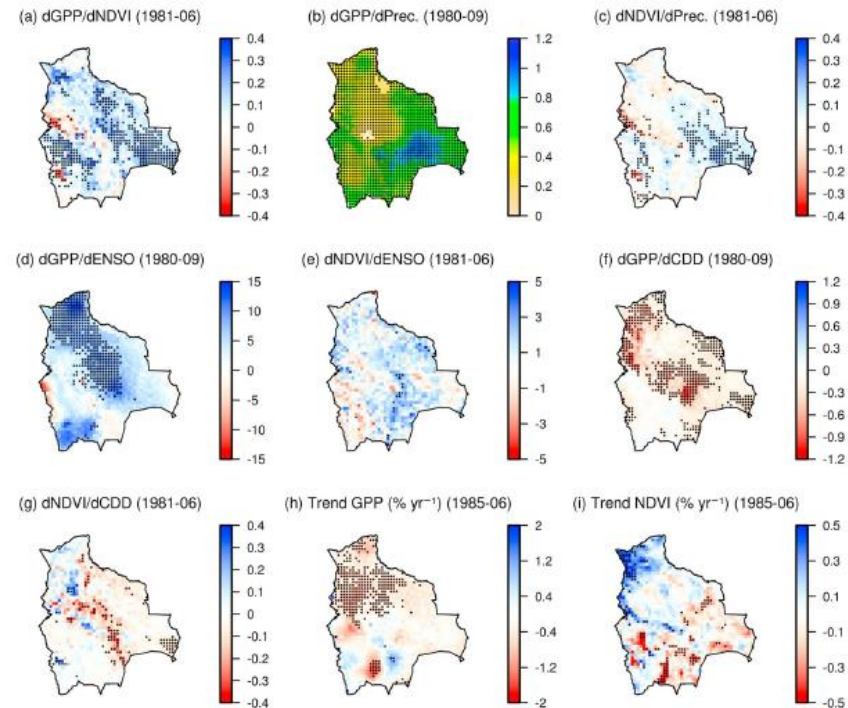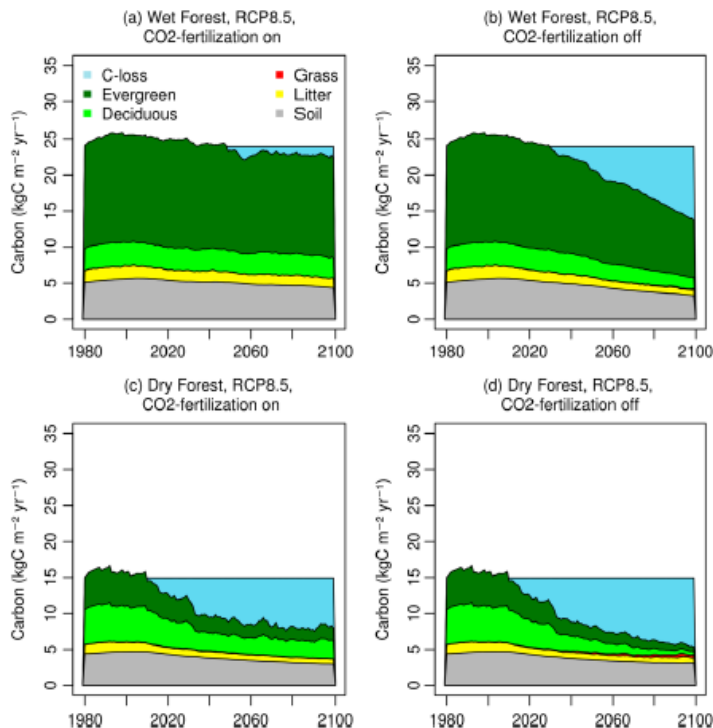
# **W**ater **S**ystems and **G**lobal Change **C**limate and **A**daptive **L**and & Water **M**gt

- Impacts & Adaptation CC & CV on
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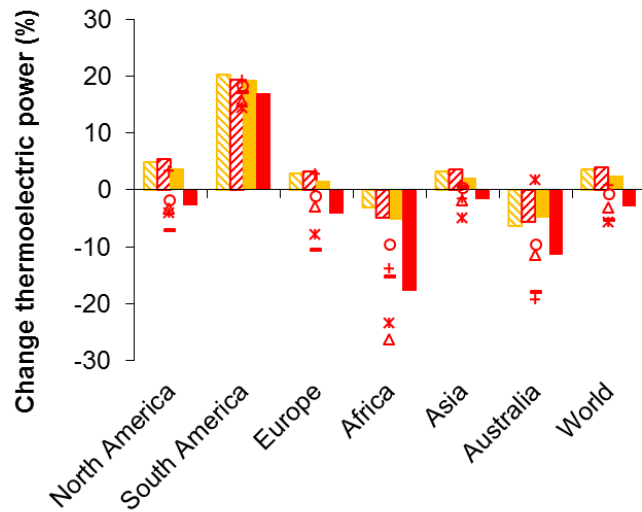
Seiler et al.

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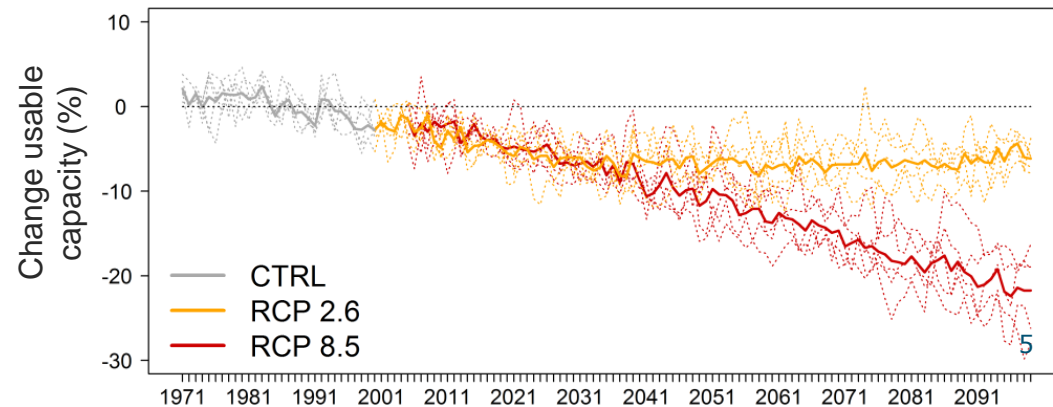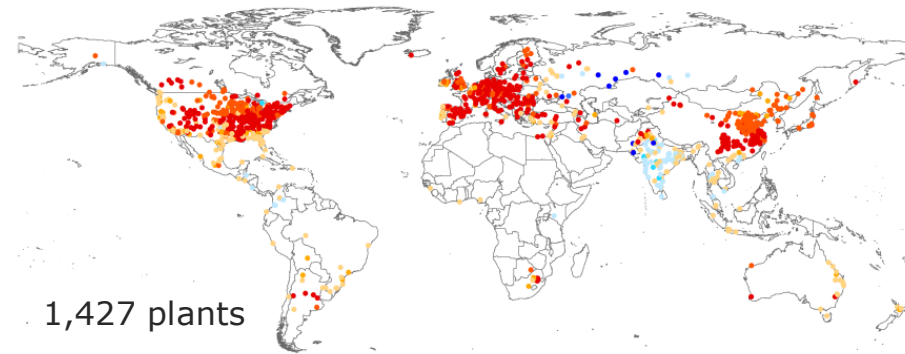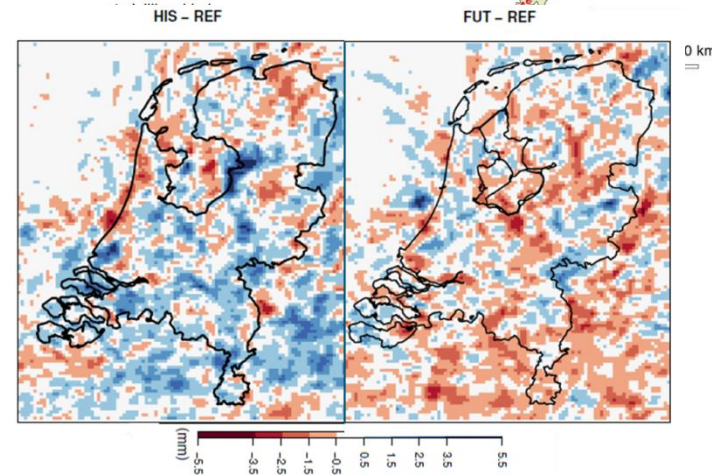# Water Systems and Global Change Climate and Adaptive Land & Water Mgt

- Impacts & Adaptation CC & CV on
  - Water Food Energy Environment NEXUS

Van Vliet et al.



RCP 8.5 (2050s)

1,427 plants

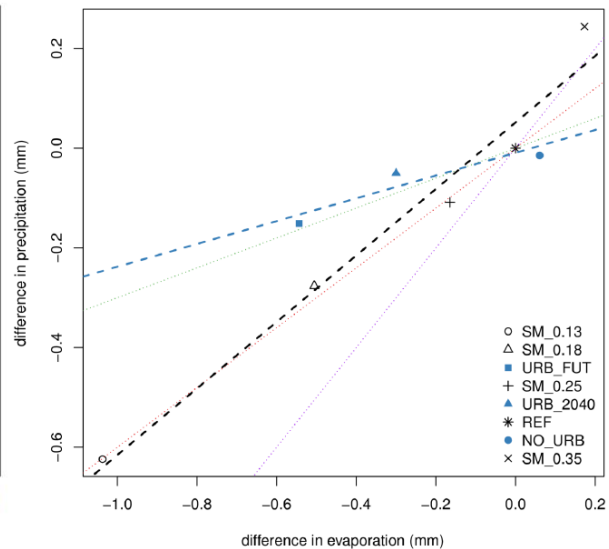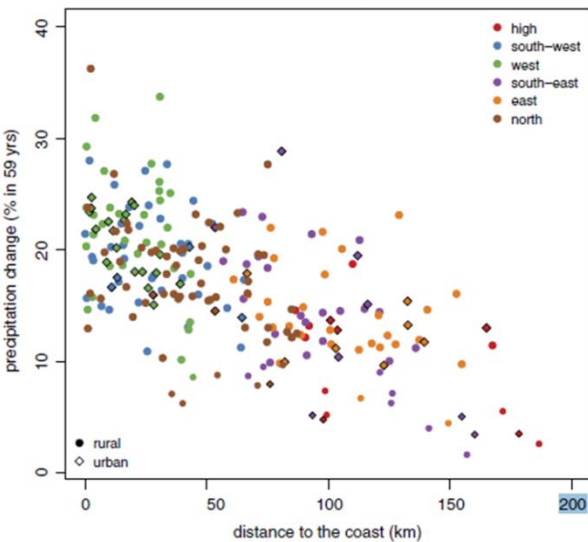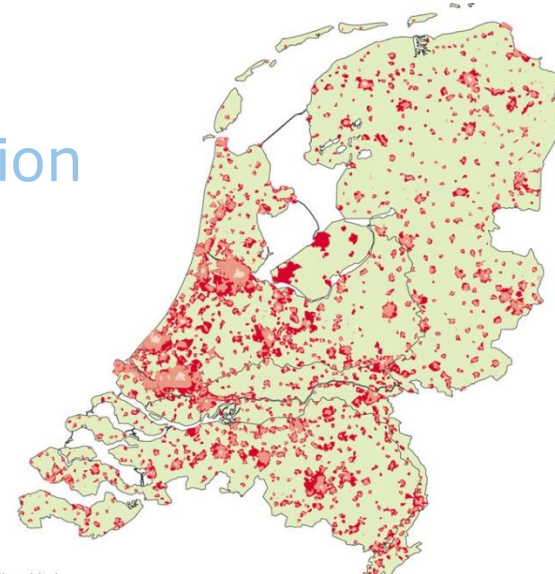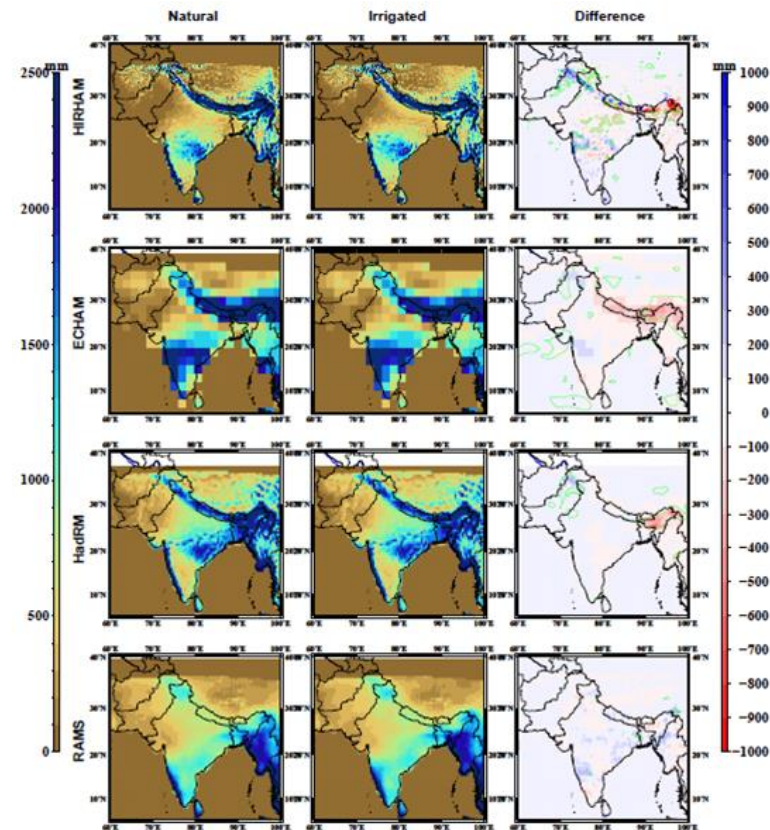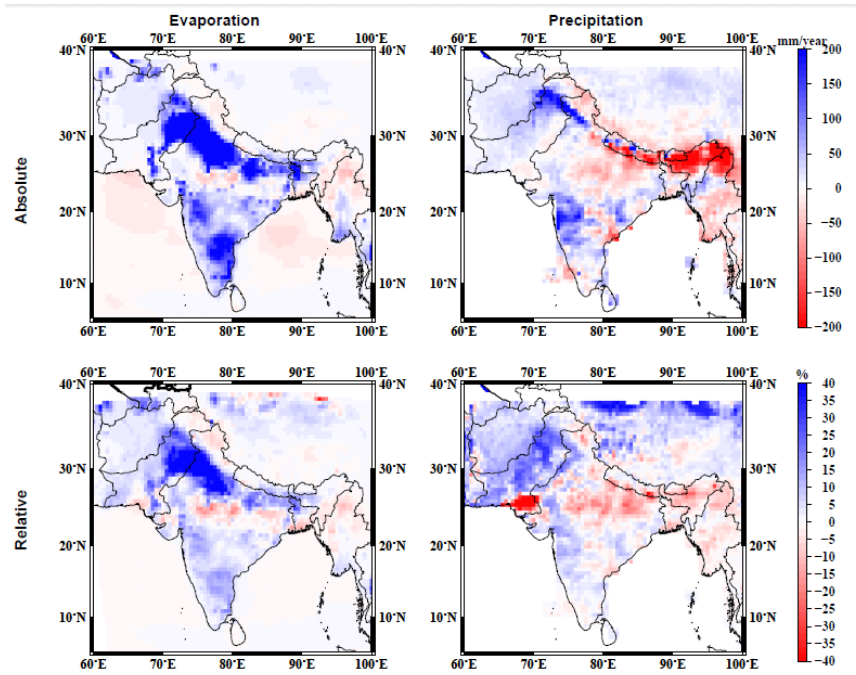# Water Systems and Global Change Climate and Adaptive Land & Water Mgt

- Impacts LUCC on CC
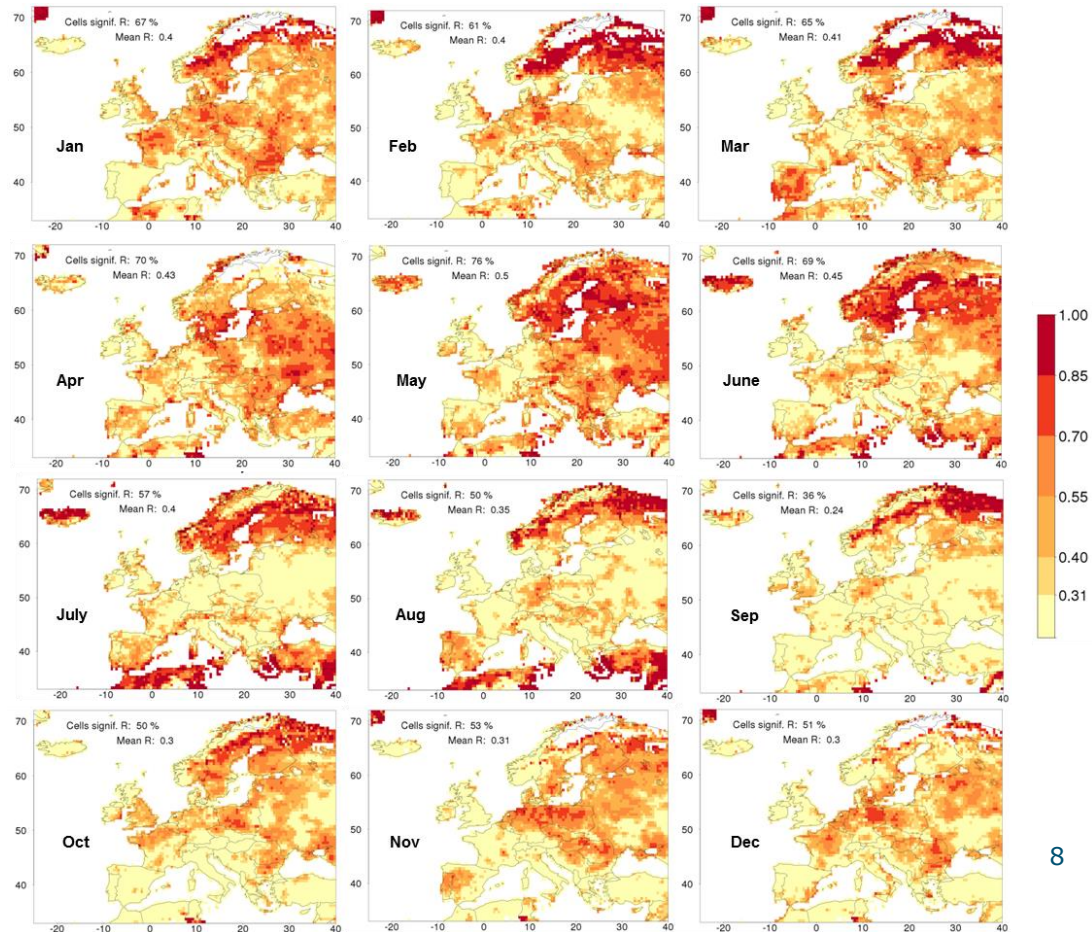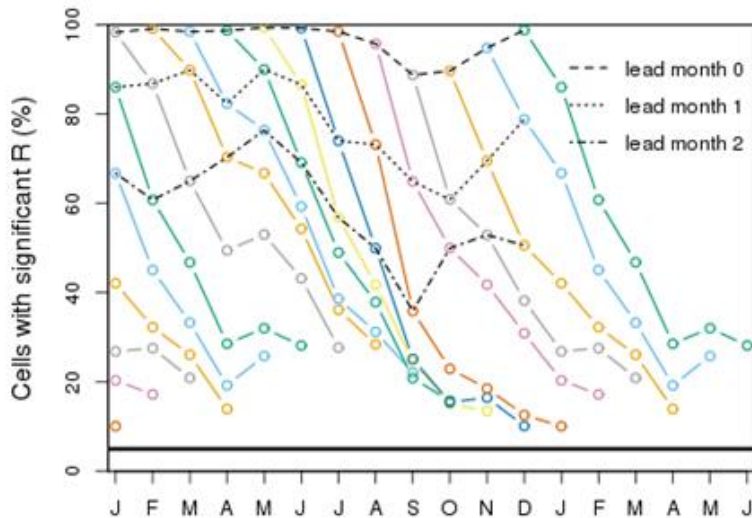  - Irrigation, Urbanisation, Deforestation

Daniels et al.

# **W**ater **S**ystems and **G**lobal Change
# **C**limate and **A**daptive **L**and & Water **M**gt

- Impacts LUCC on CC

  - Irrigation, Urbanisation, Deforestation

Tuinenburg et al.



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# **W**ater **S**ystems and **G**lobal Change **C**limate and **A**daptive **L**and & Water **M**gt

- **Climate Services, incl. seasonal forecasts**
  - Water

# **W**ater **S**ystems and **G**lobal Change **C**limate and **A**daptive **L**and & Water **M**gt

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# **C**limate and **A**daptive **L**and & Water **M**gt

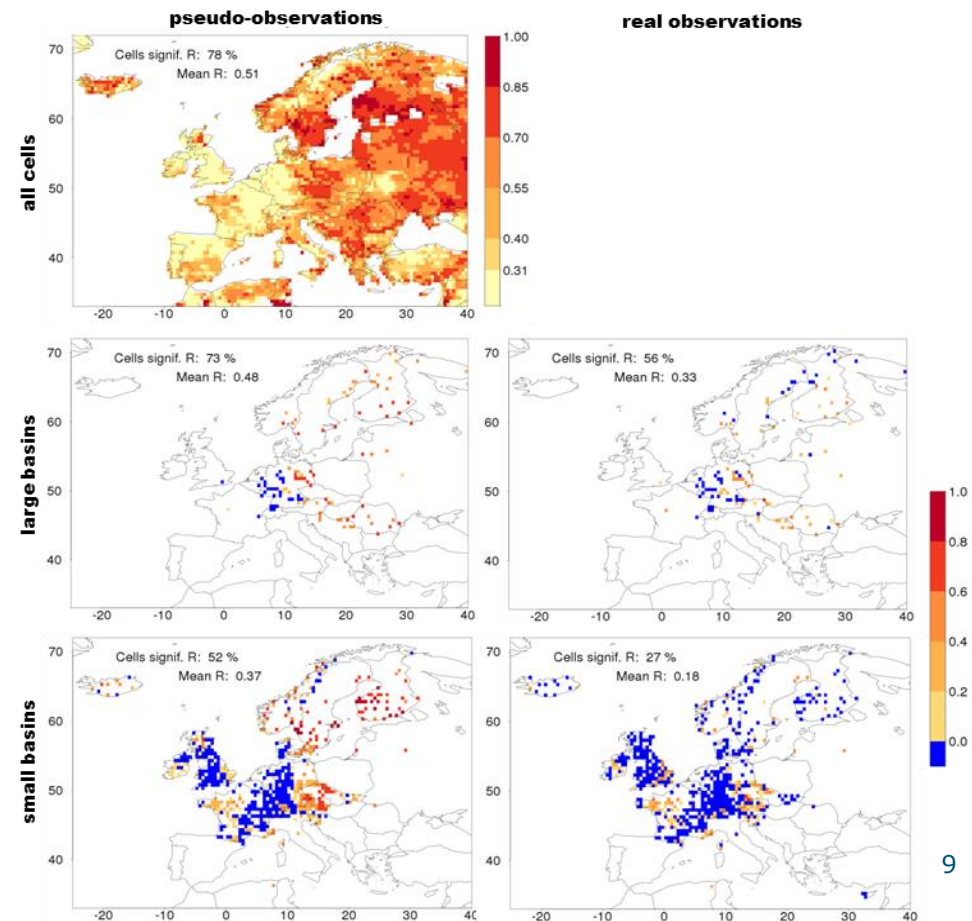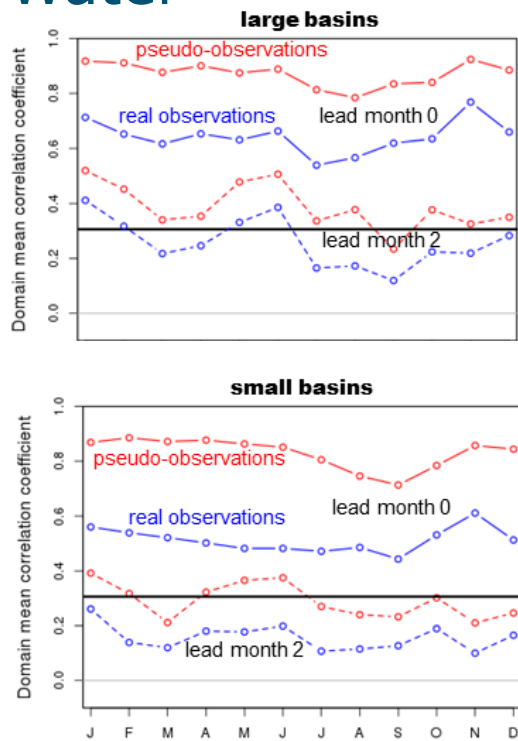- Climate Services, incl. seasonal forecasts
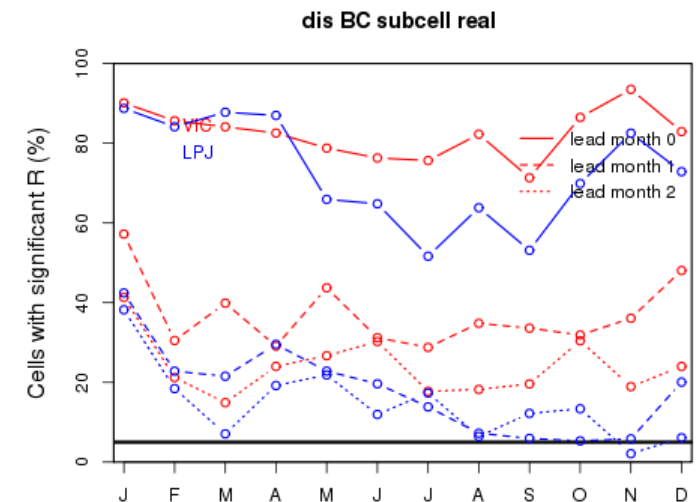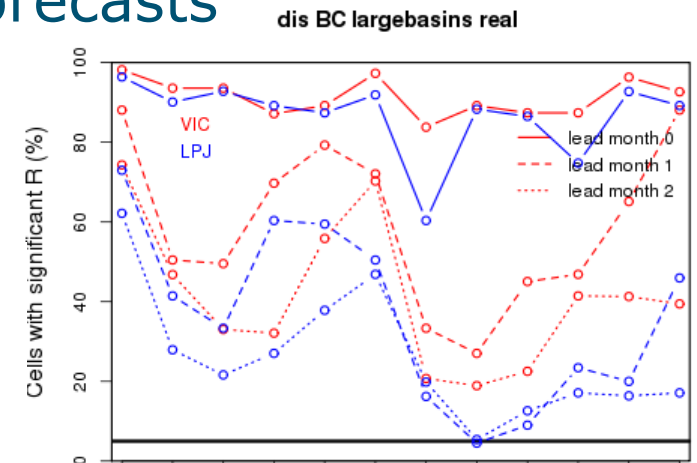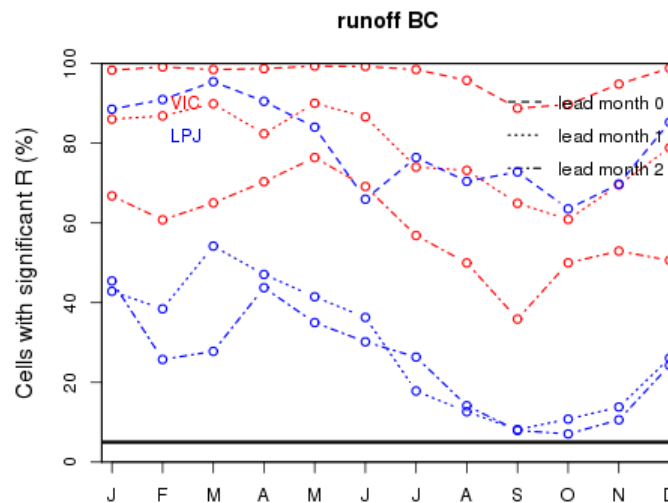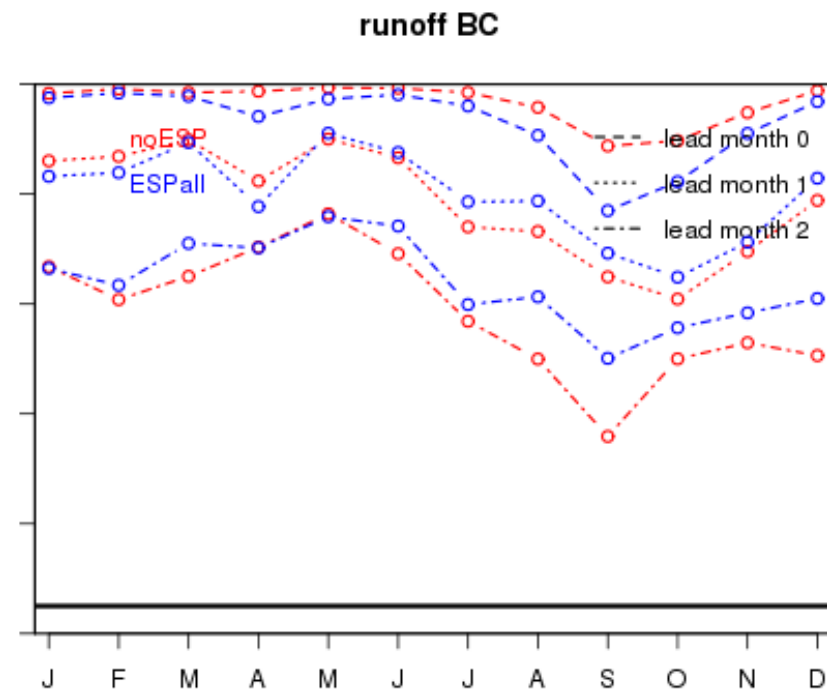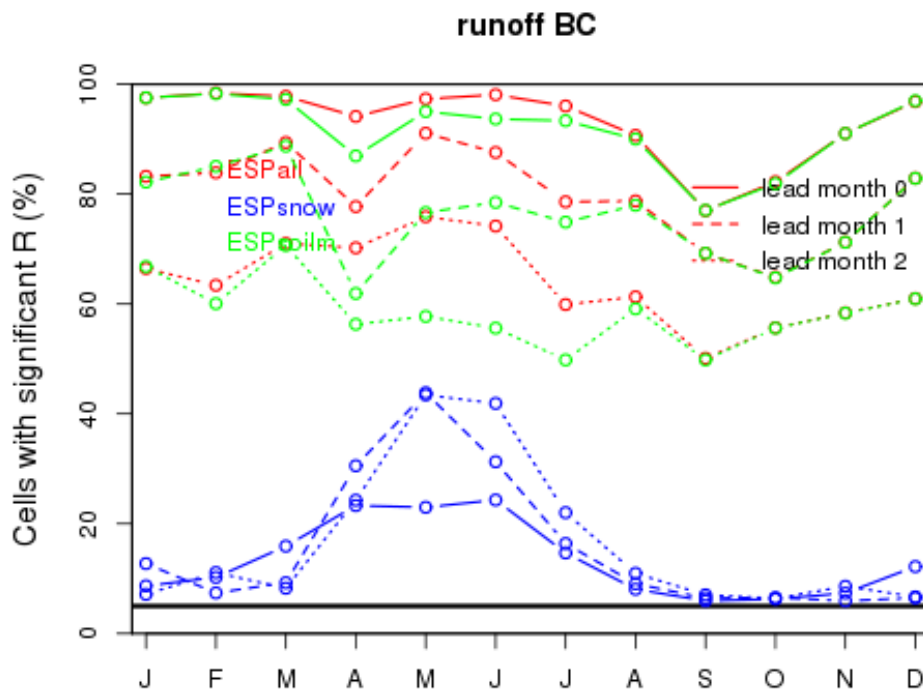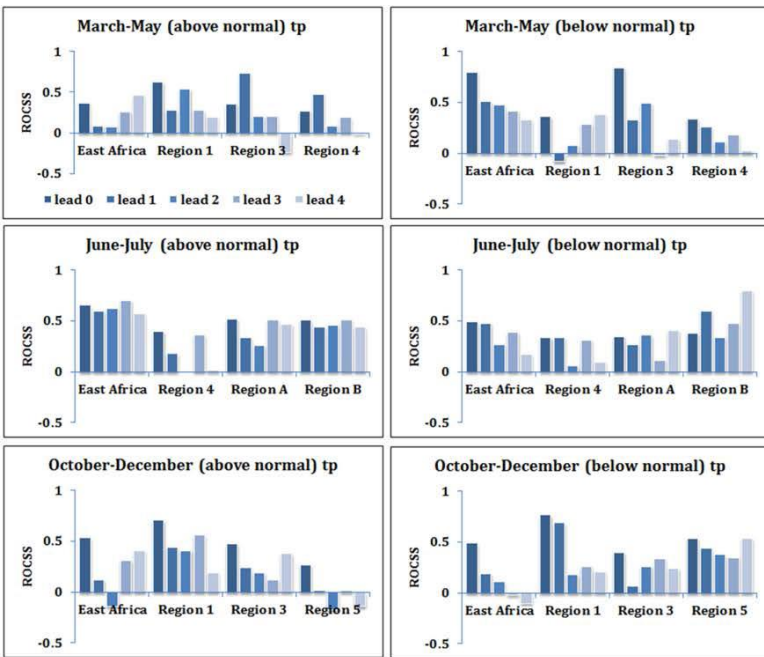  - Water

# Water Systems and Global Change Climate and Adaptive Land & Water Mgt

- Climate Services, incl. seasonal forecasts
  - Water

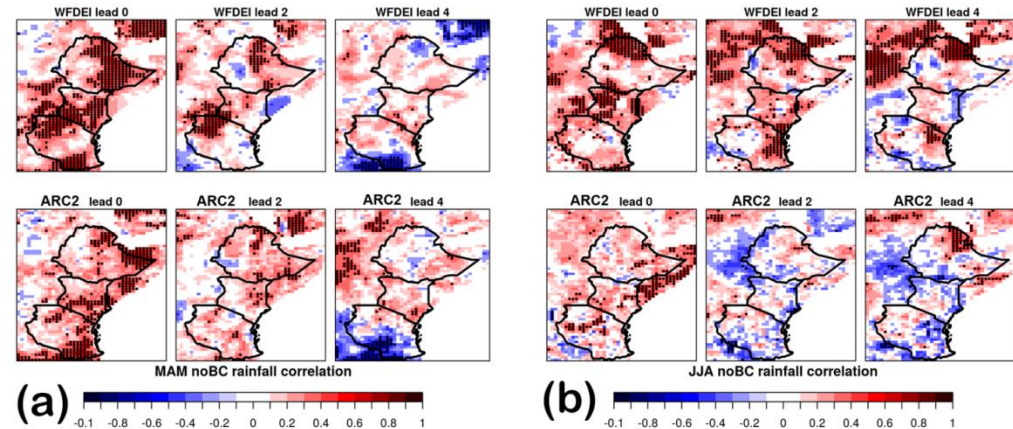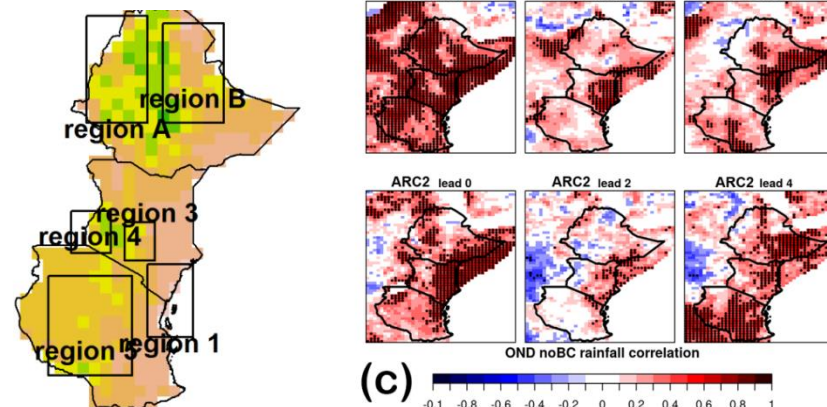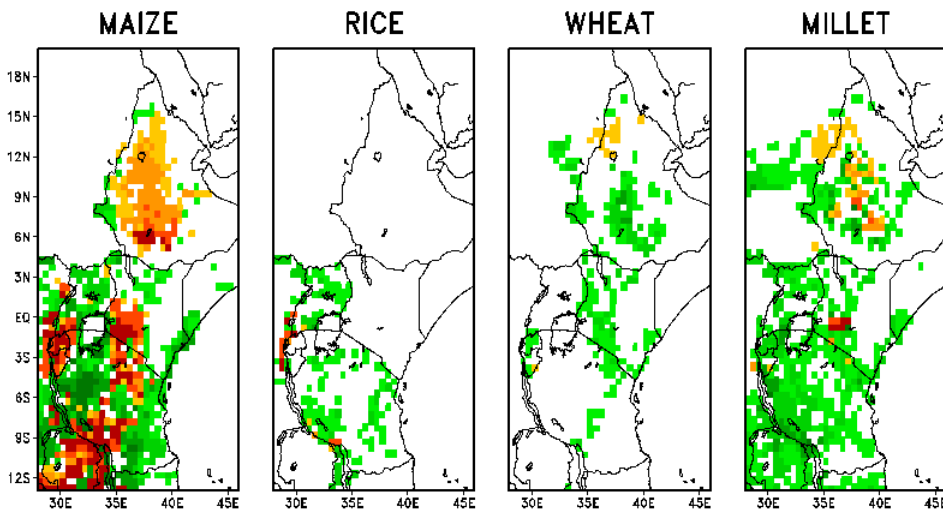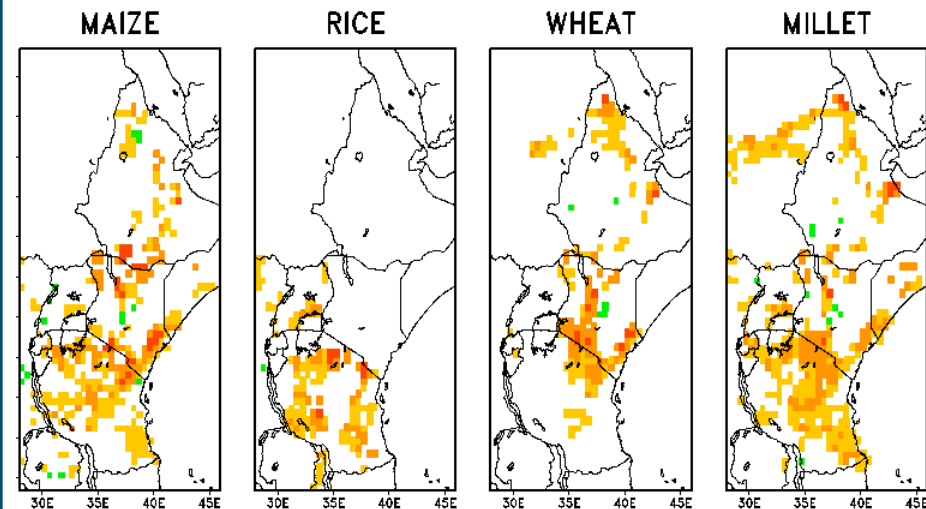# **W**ater **S**ystems and **G**lobal Change
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■ Climate Services, incl. seasonal forecasts
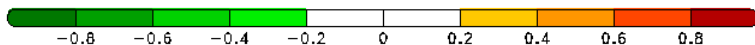
● Agriculture

# **W**ater **S**ystems and **G**lobal Change **C**limate and **A**daptive **L**and & Water **M**gt

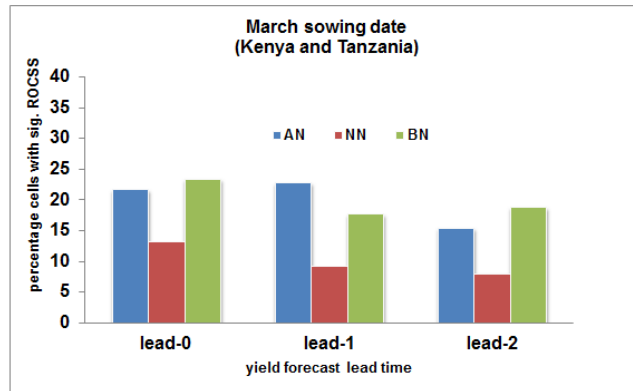- Climate Services, incl. seasonal forecasts
  - Agriculture



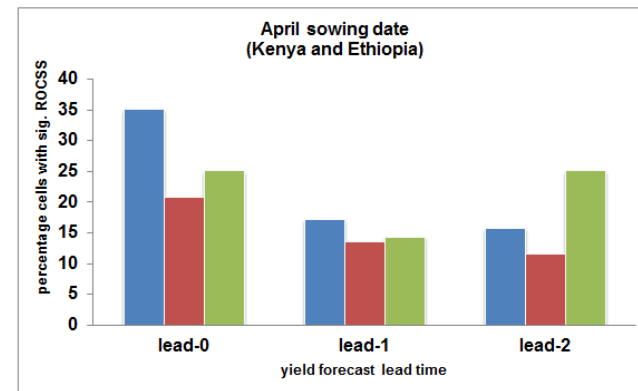correlation with annual average Tair(1961−2000)

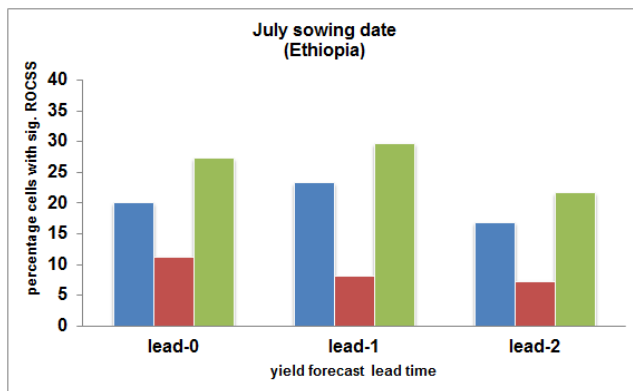correlation with annual precipitation(1901−2000)
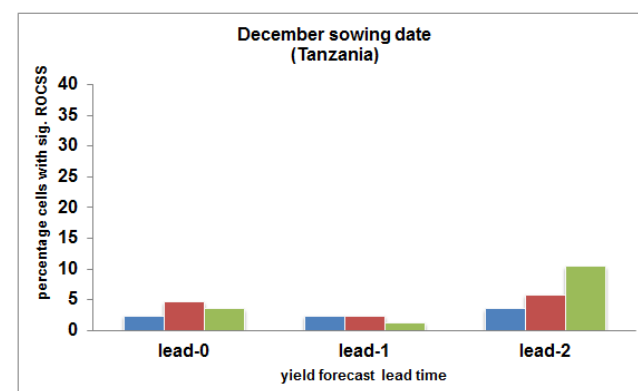
# Results: performance WOFOST (ROCSS)
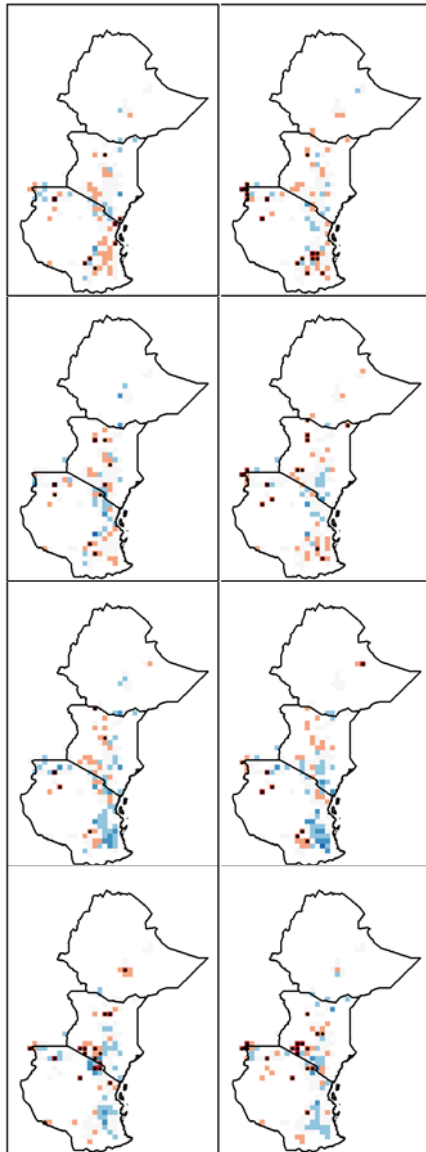


(a)

(b)

(c)

(d)

# Results: performance WOFOST + LPJmL



**March sowing date**

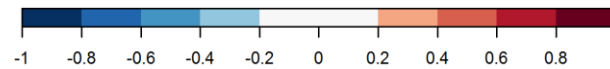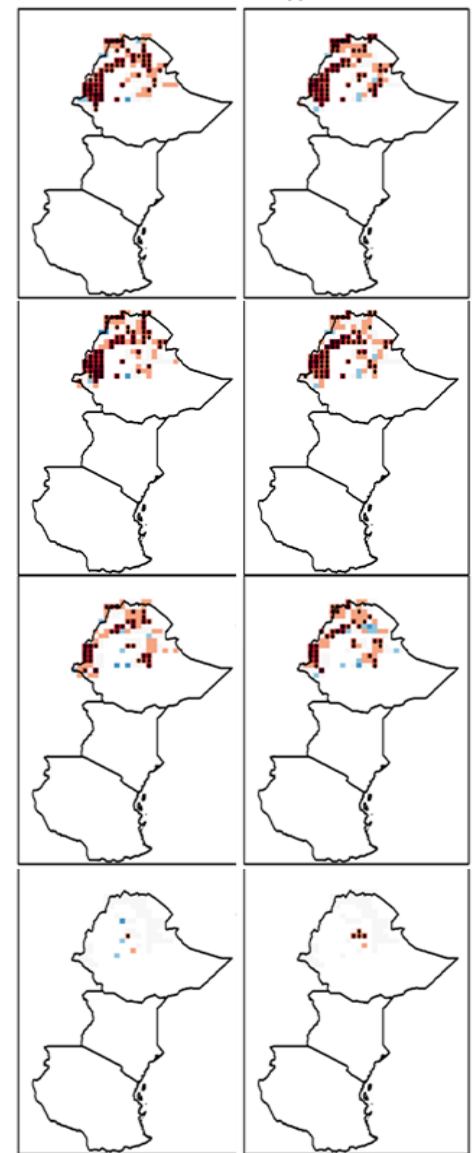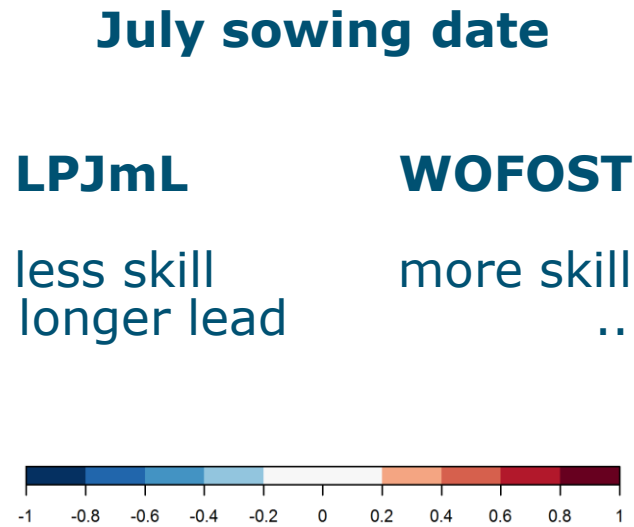**LPJmL**          **WOFOST**

less skill         more skill
longer lead              ..

# Results: performance WOFOST + LPJmL



**July sowing date**

**LPJmL**

**WOFOST**

less skill
longer lead

more skill
..
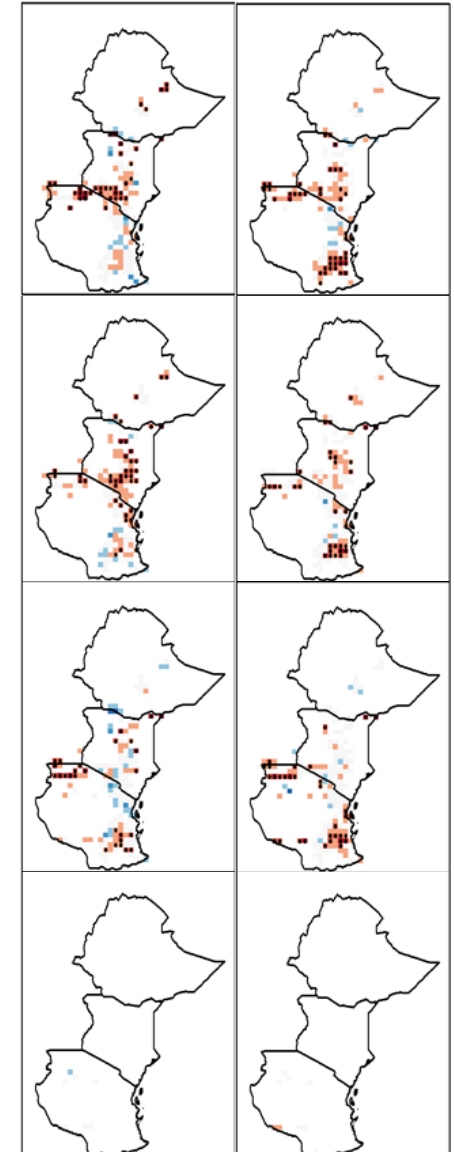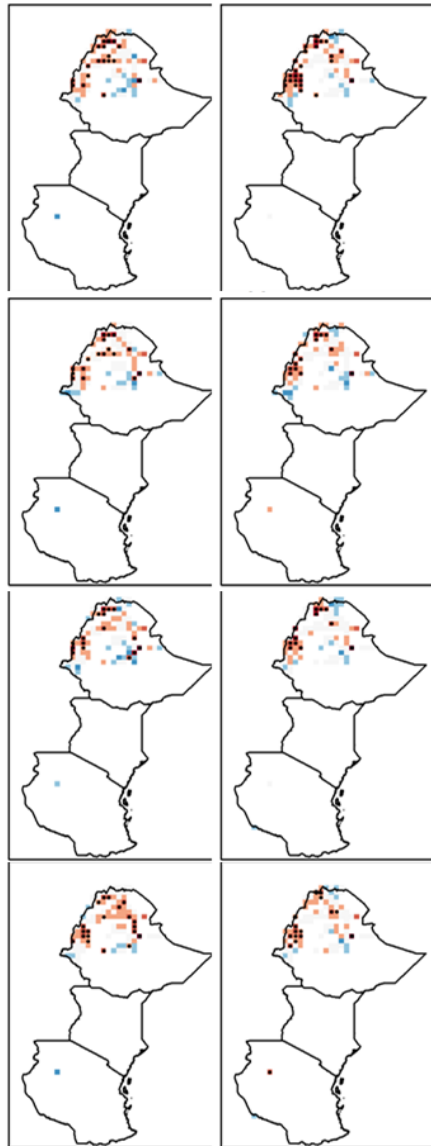
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- Climate Services,
- Seasonal forecasts
  - Water and crops: LPJmL