



Contact info



Digital Soil Property Maps of Ethiopia

Ethiopian ATA
Agricultural Transformation Agency
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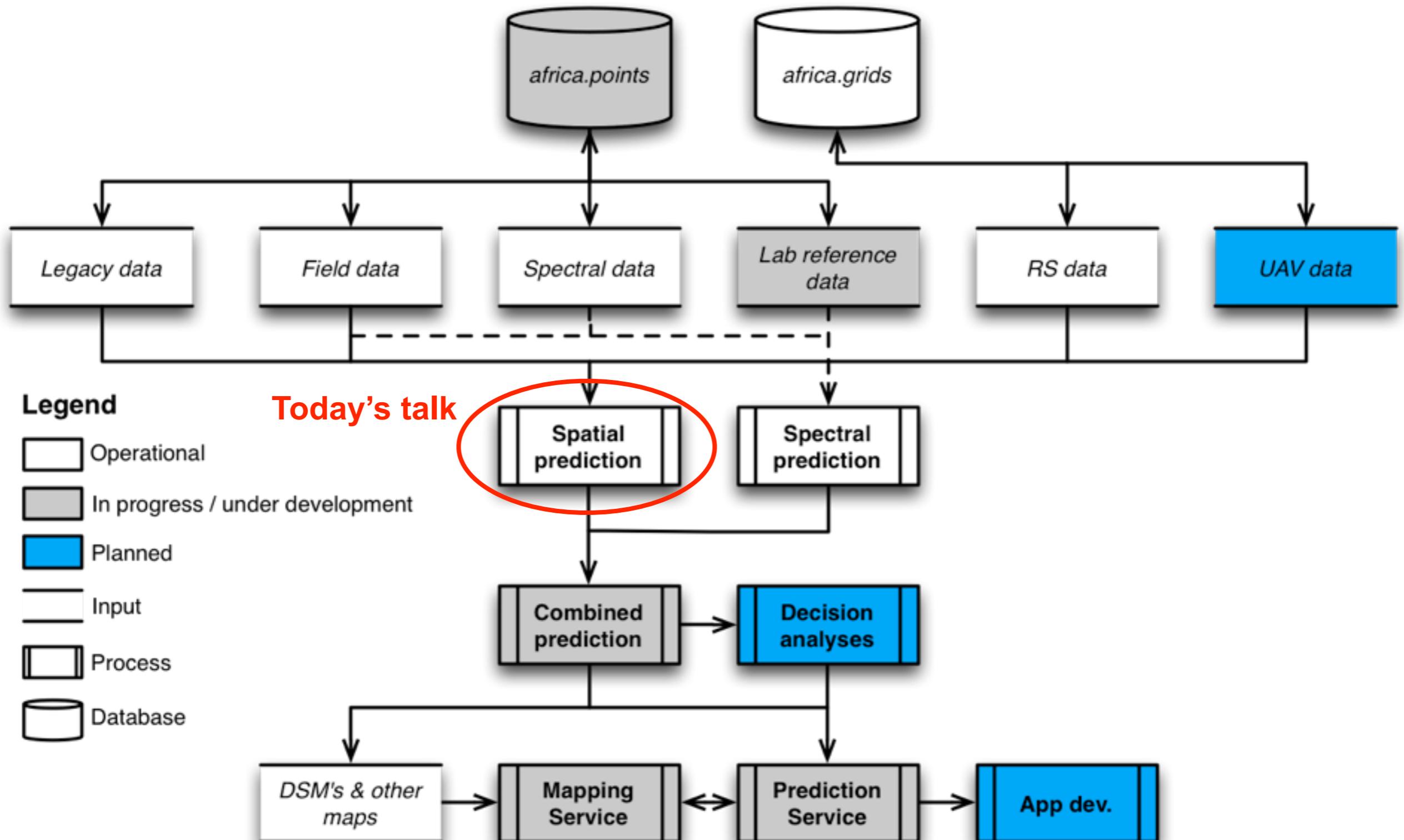
Africa Soil Information Service
www.africasoils.net



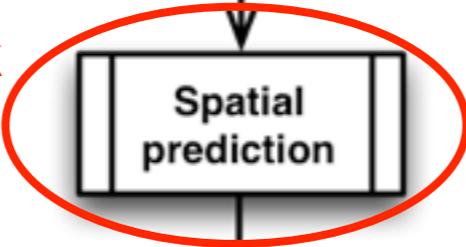
CC license



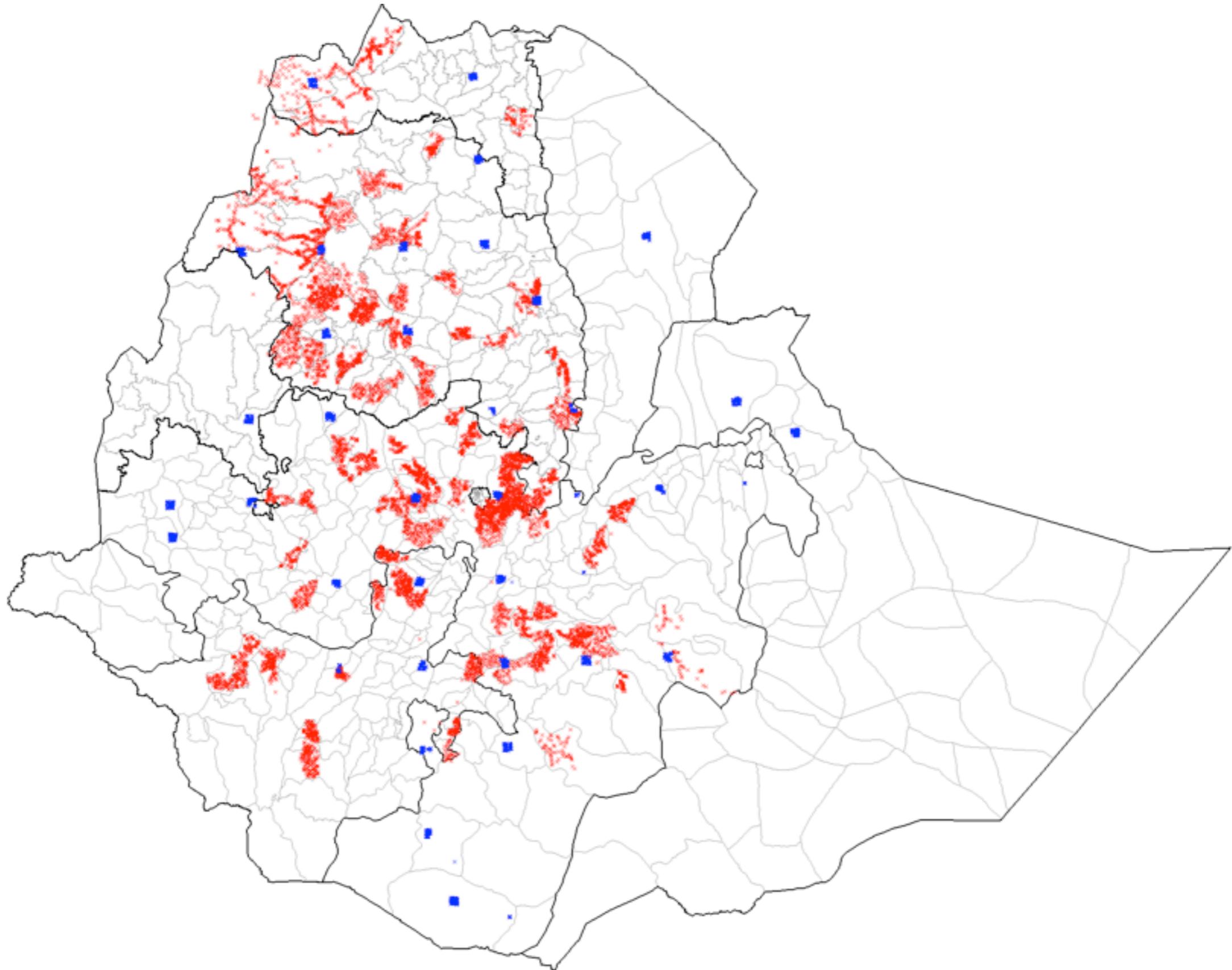
Main AfSIS workflow, products & services overview, August 2013



Today's talk

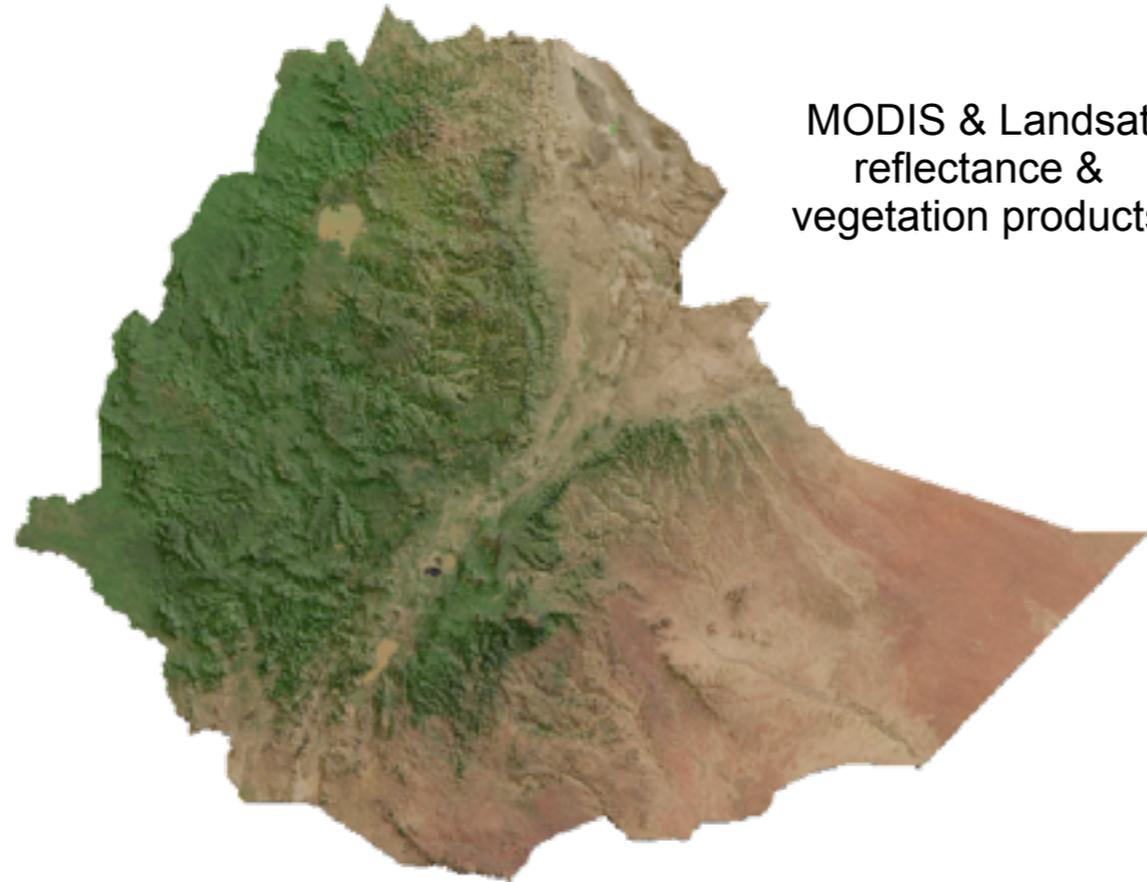


Ethiopia: current spatial coverage of new ground observations and measurements

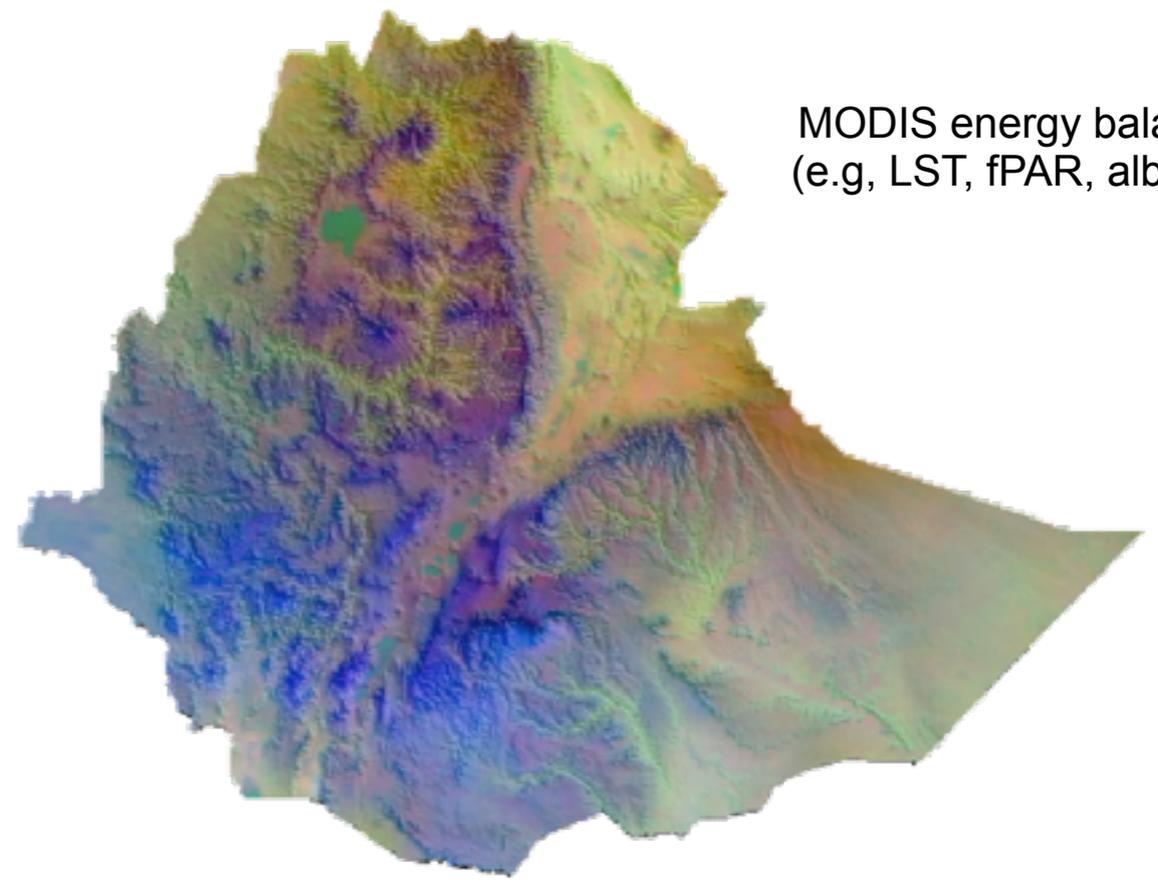


Examples of useful remote sensing covariates for digital soil mapping & monitoring

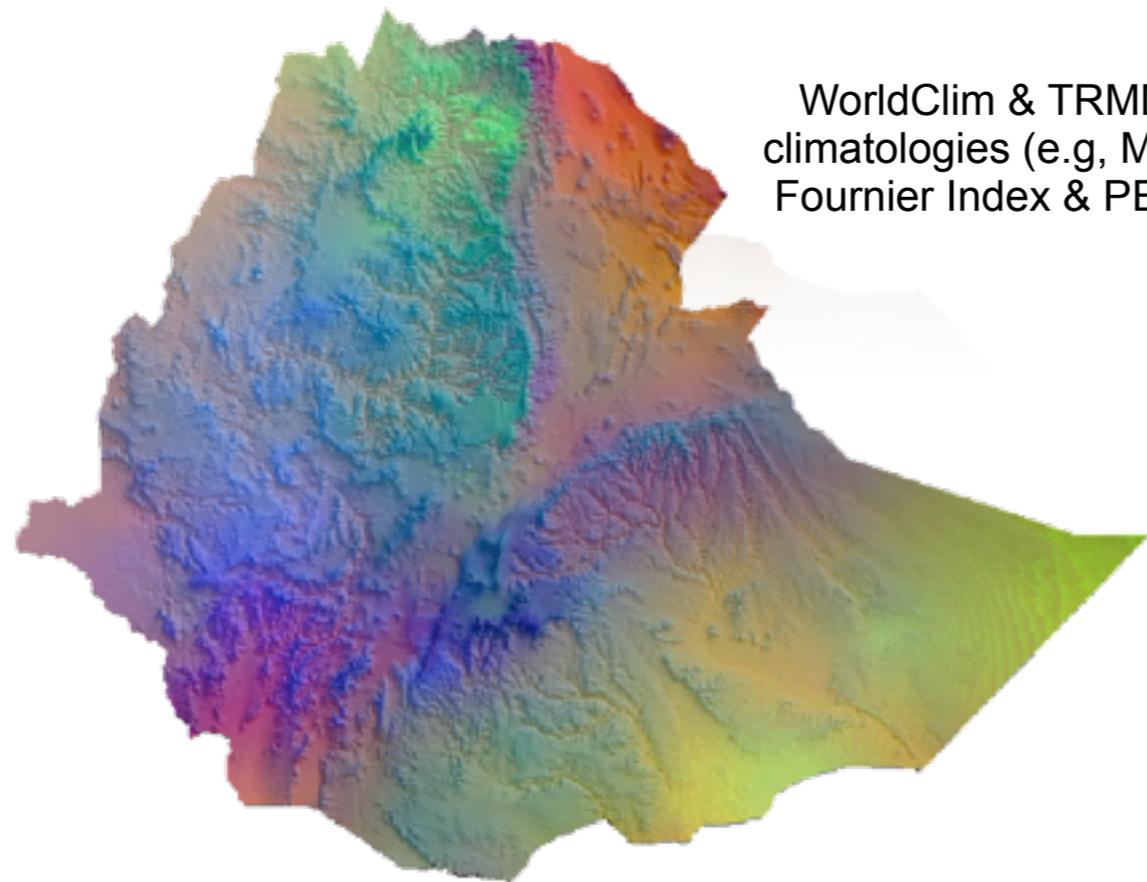
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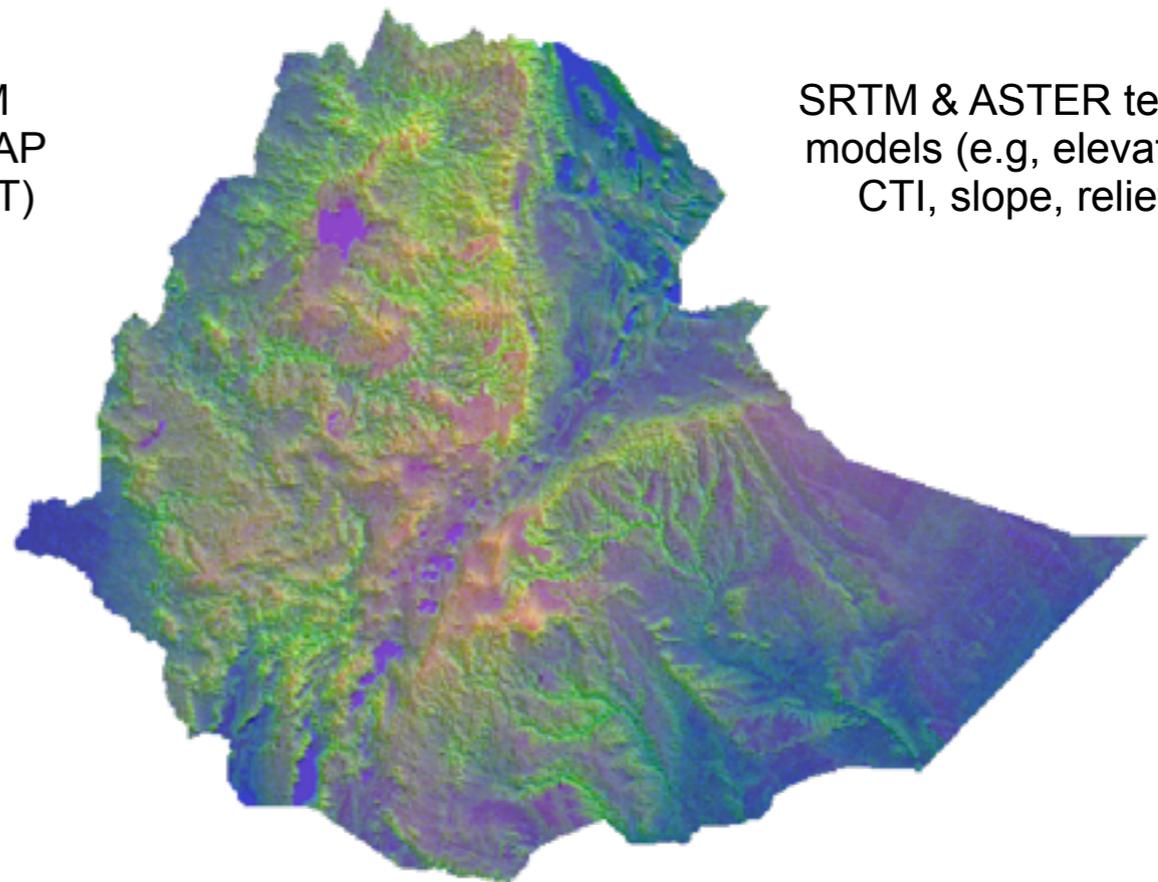
MODIS & Landsat
reflectance &
vegetation products



MODIS energy balance
(e.g., LST, fPAR, albedo)



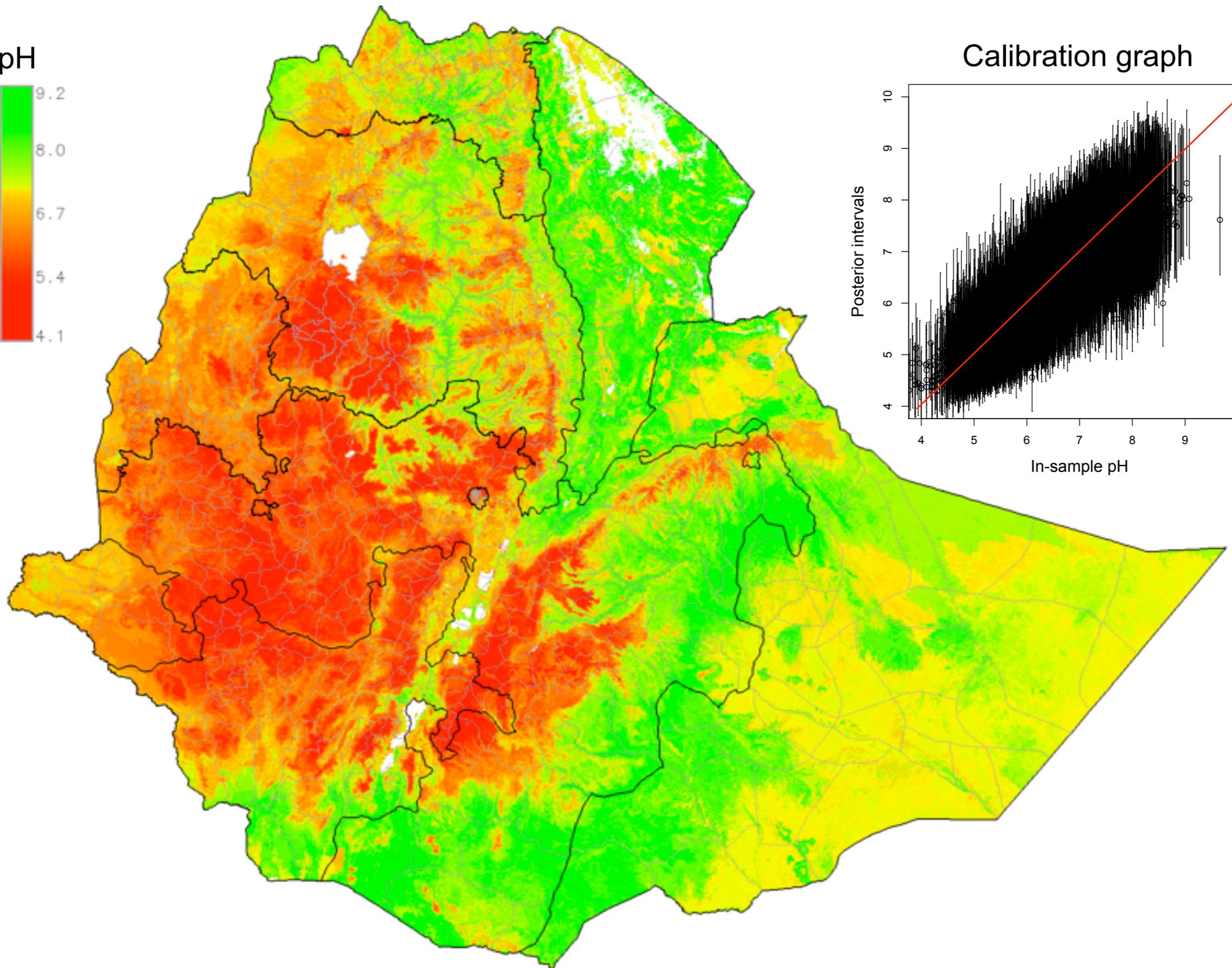
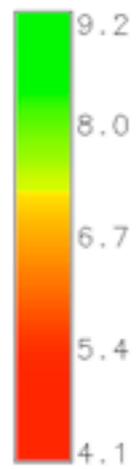
WorldClim & TRMM
climatologies (e.g., MAP
Fournier Index & PET)



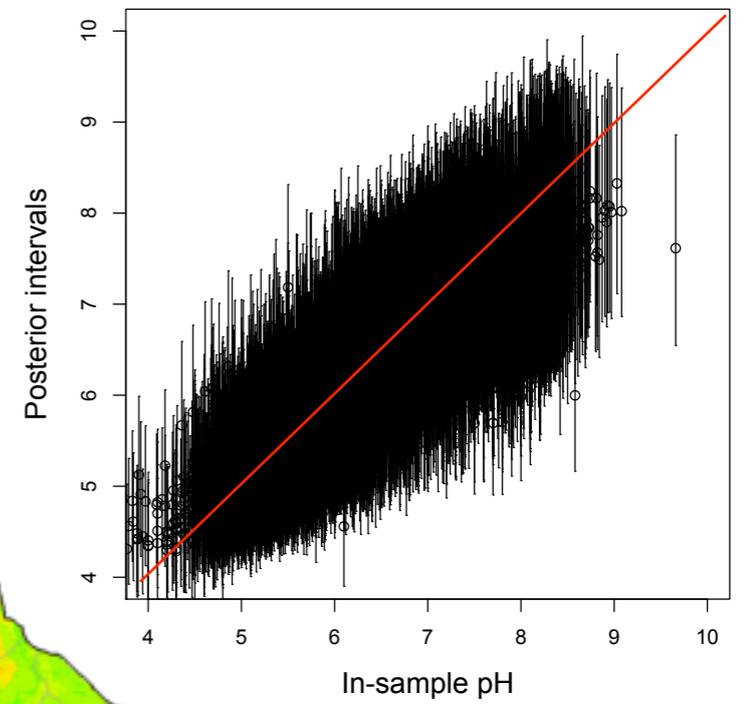
SRTM & ASTER terrain
models (e.g., elevation,
CTI, slope, relief)

"Best" current spatial topsoil pH prediction

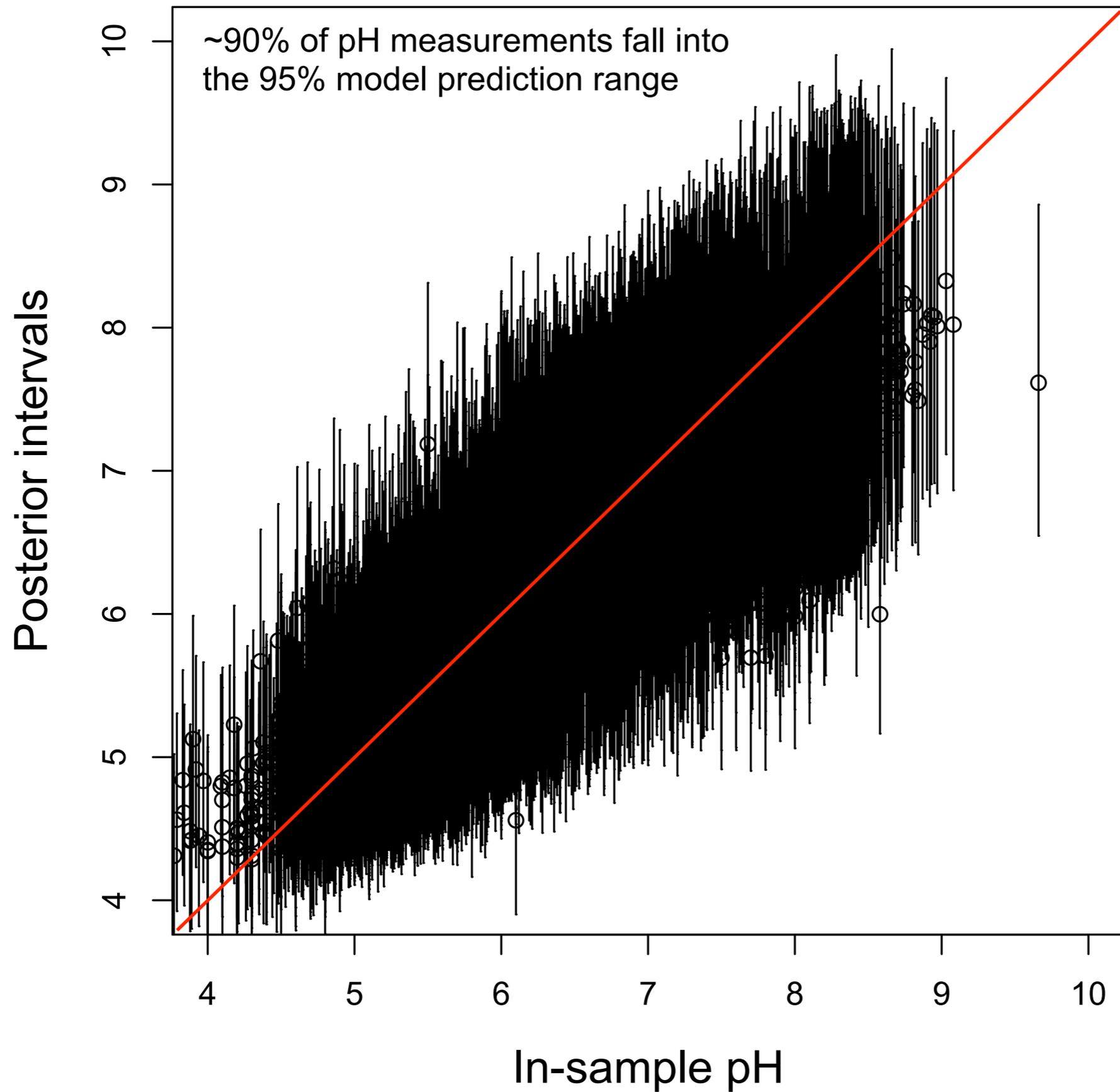
pH



Calibration graph



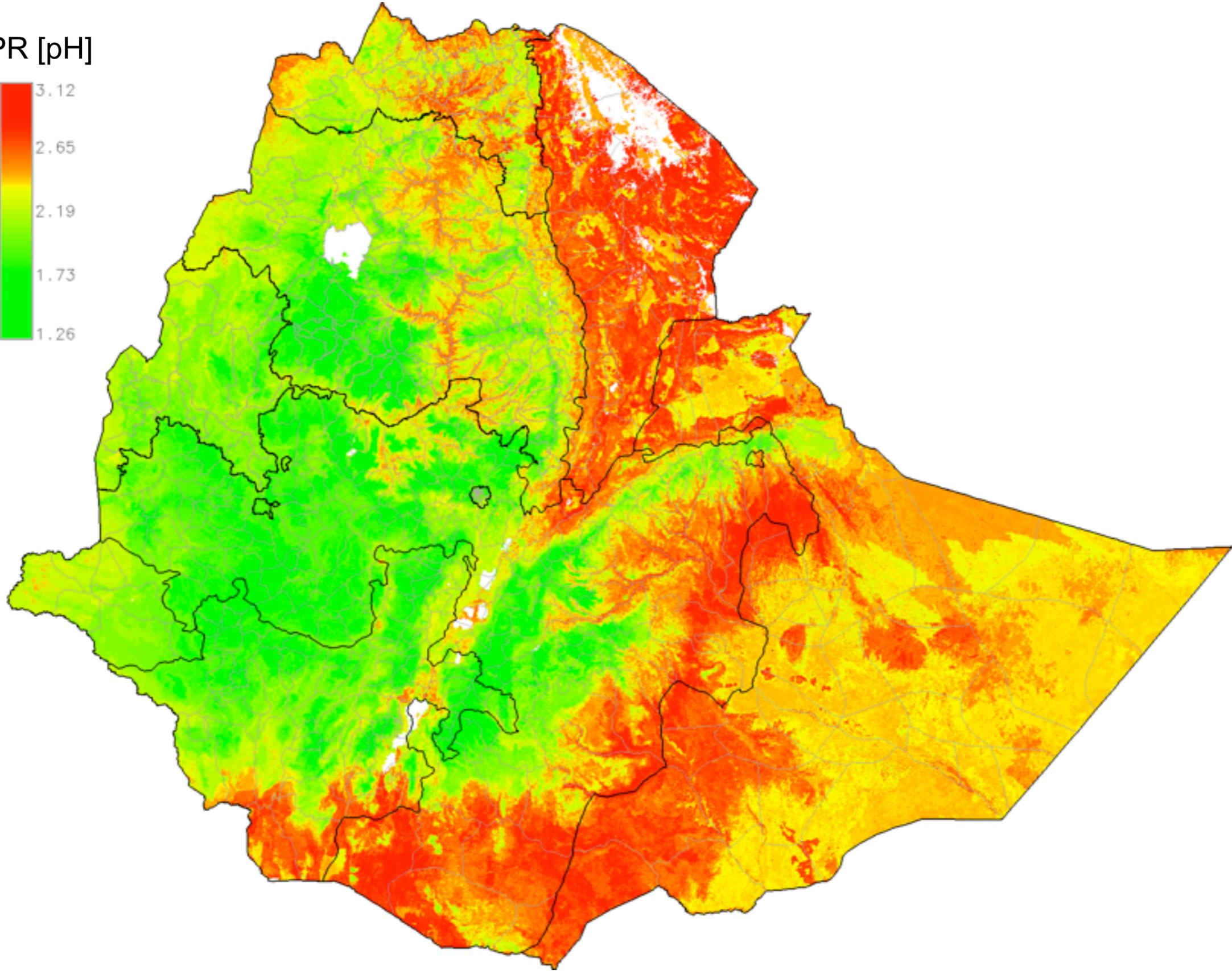
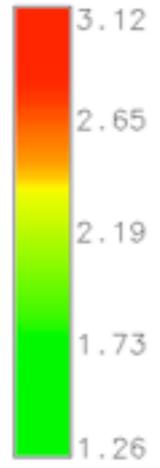
“Best” current topsoil spatial pH prediction, model calibration graph



Topsoil pH 95% prediction ranges

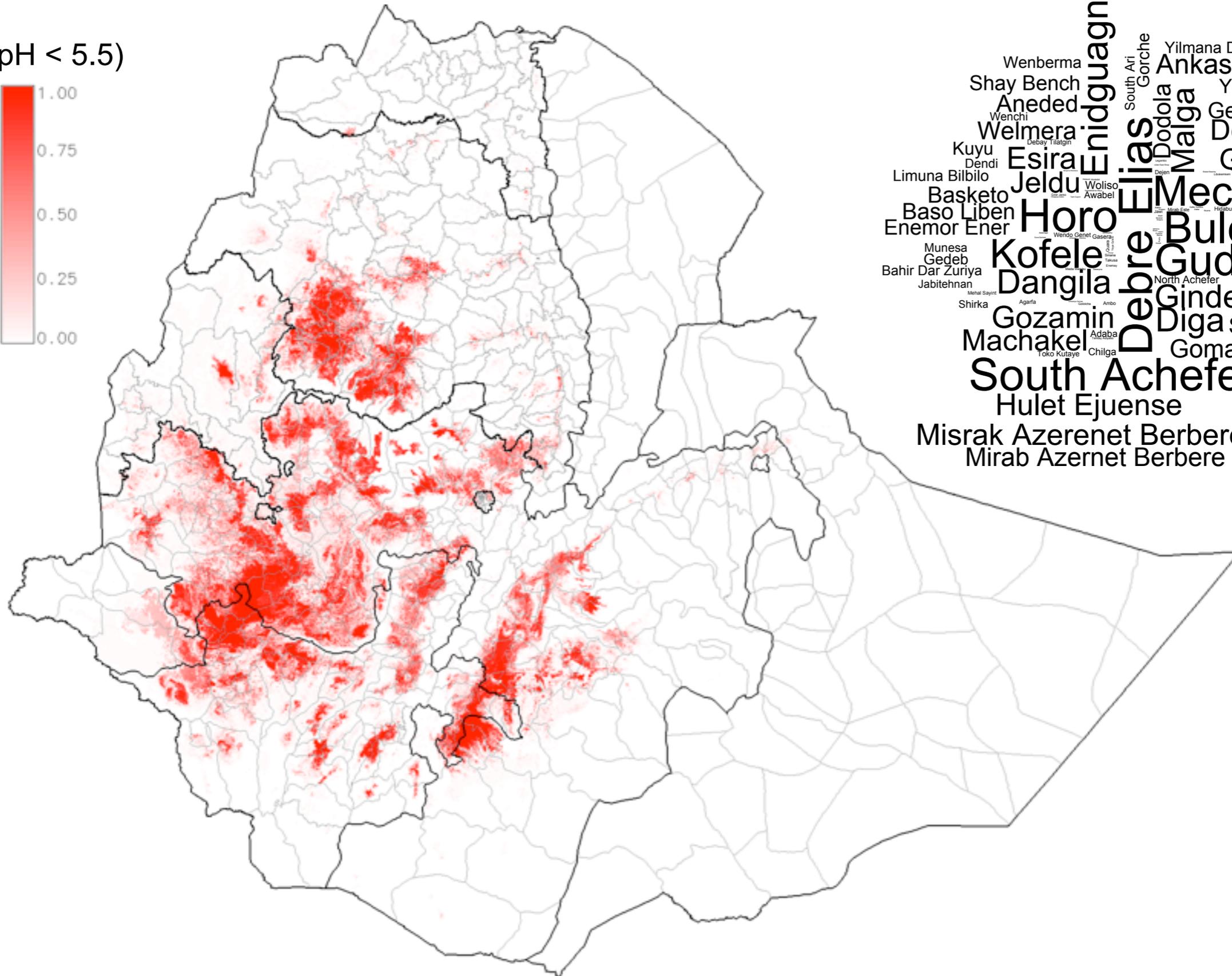
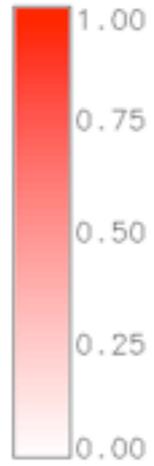
95PR = [upper 2.5%] - [lower 2.5%]

95PR [pH]



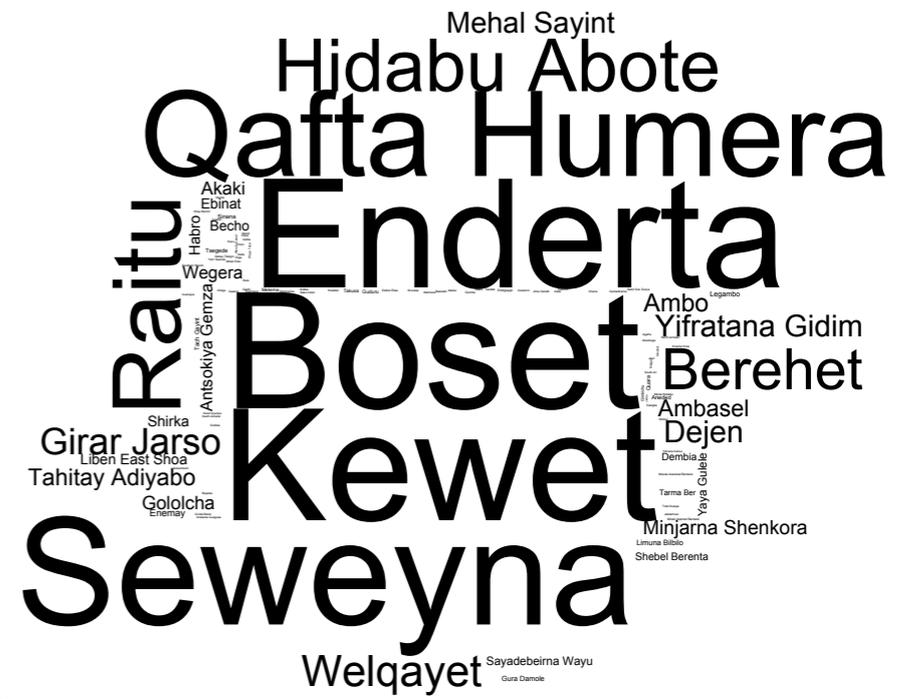
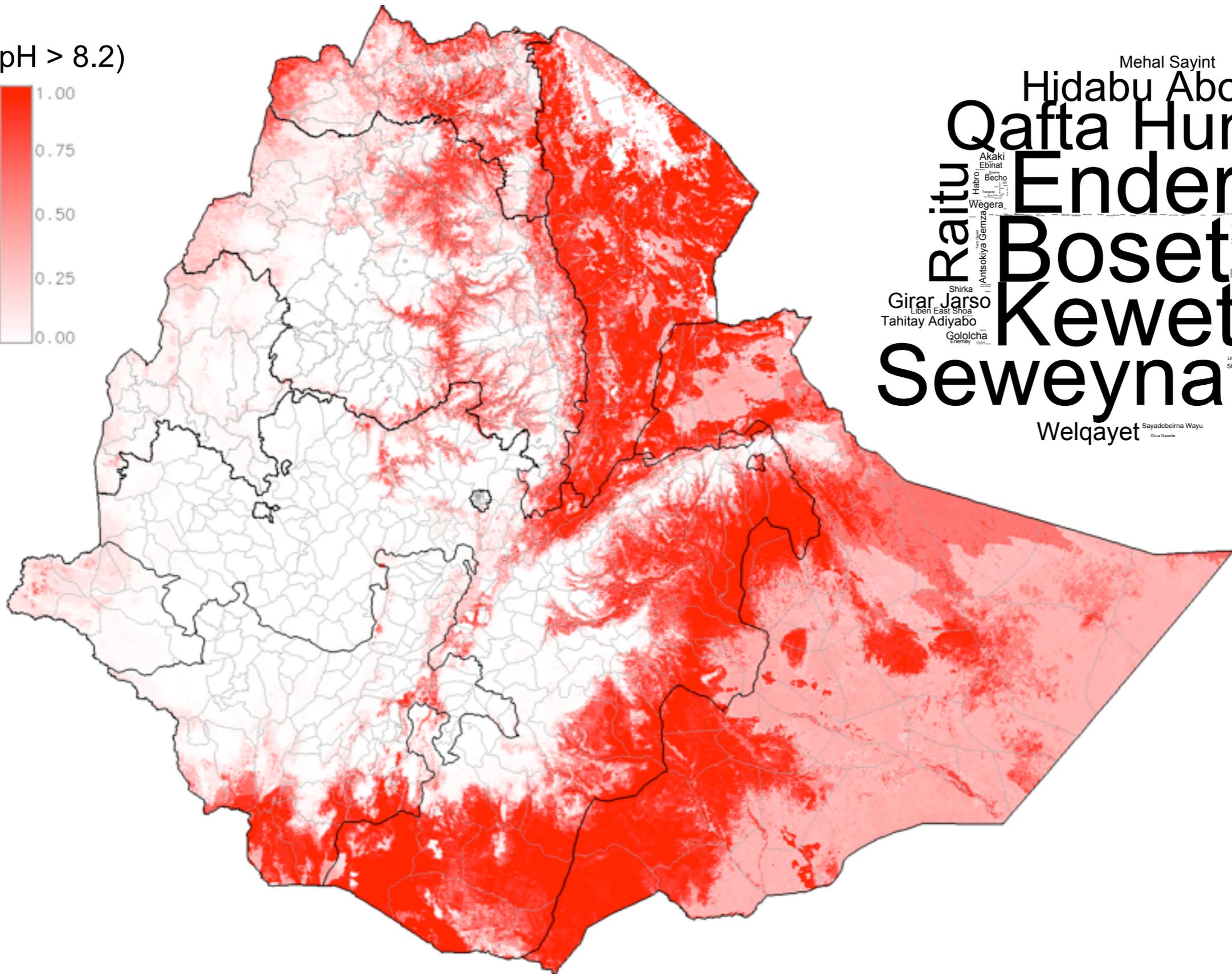
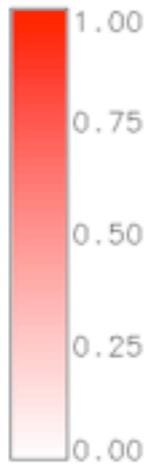
Probability topsoil pH < 5.5 ... very acid soils

prob(pH < 5.5)



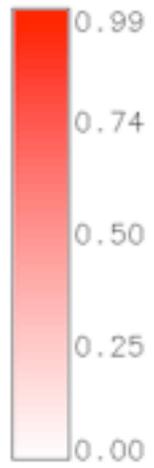
Probability topsoil pH > 8.2 ... very basic soils

prob(pH > 8.2)

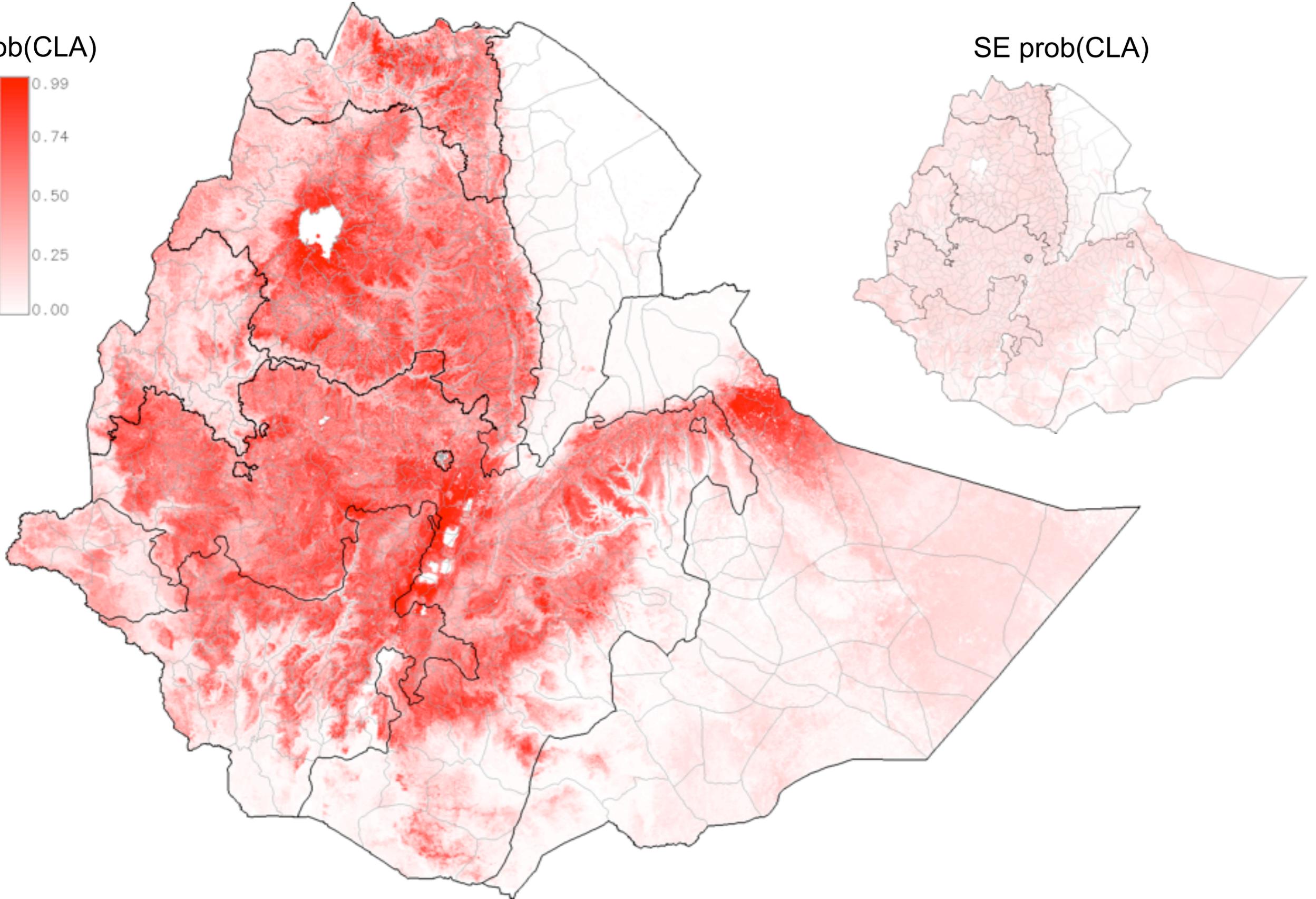
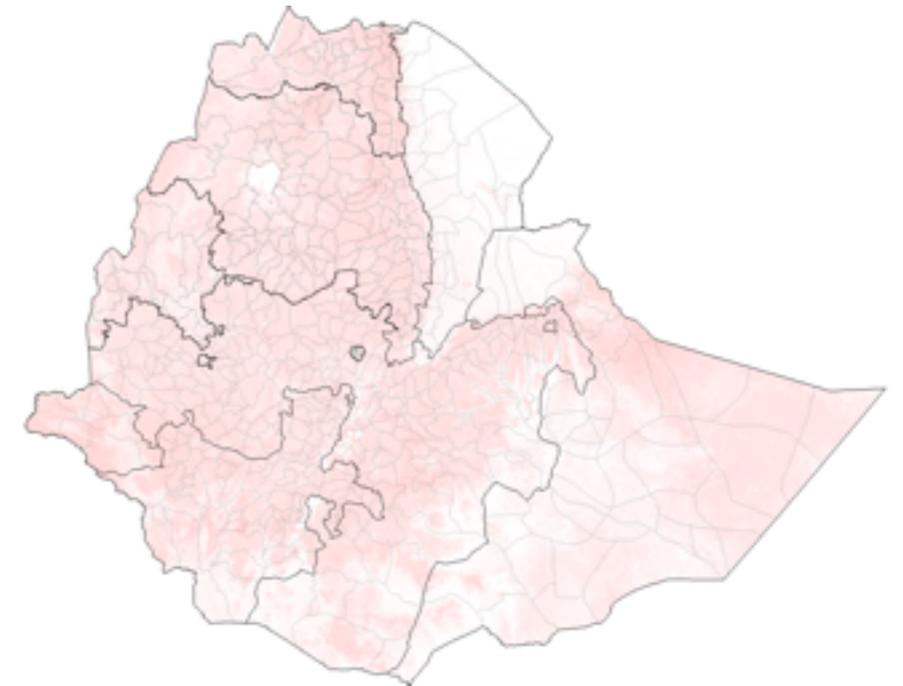


Cultivated land area prediction, prob(CLA)

prob(CLA)

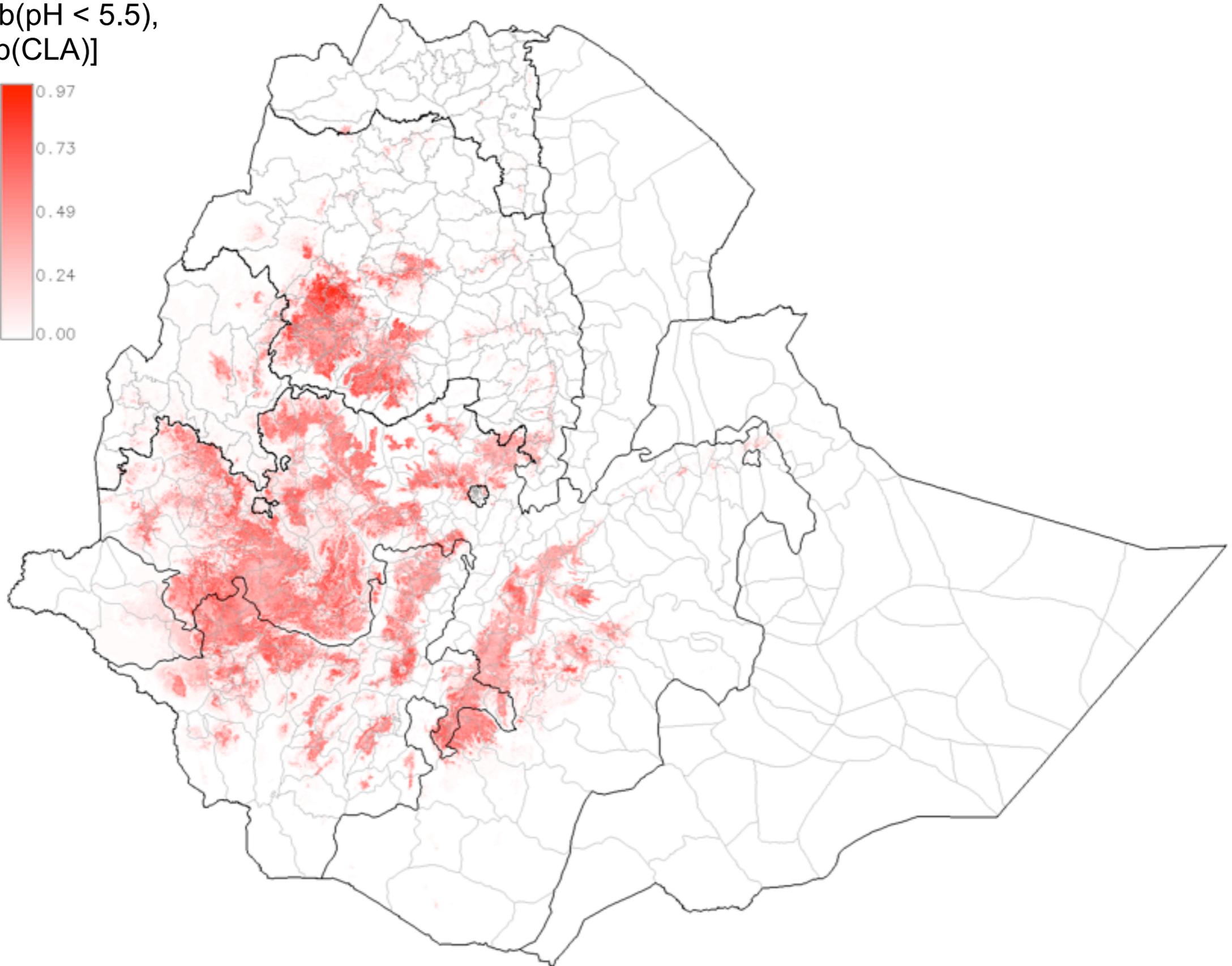


SE prob(CLA)



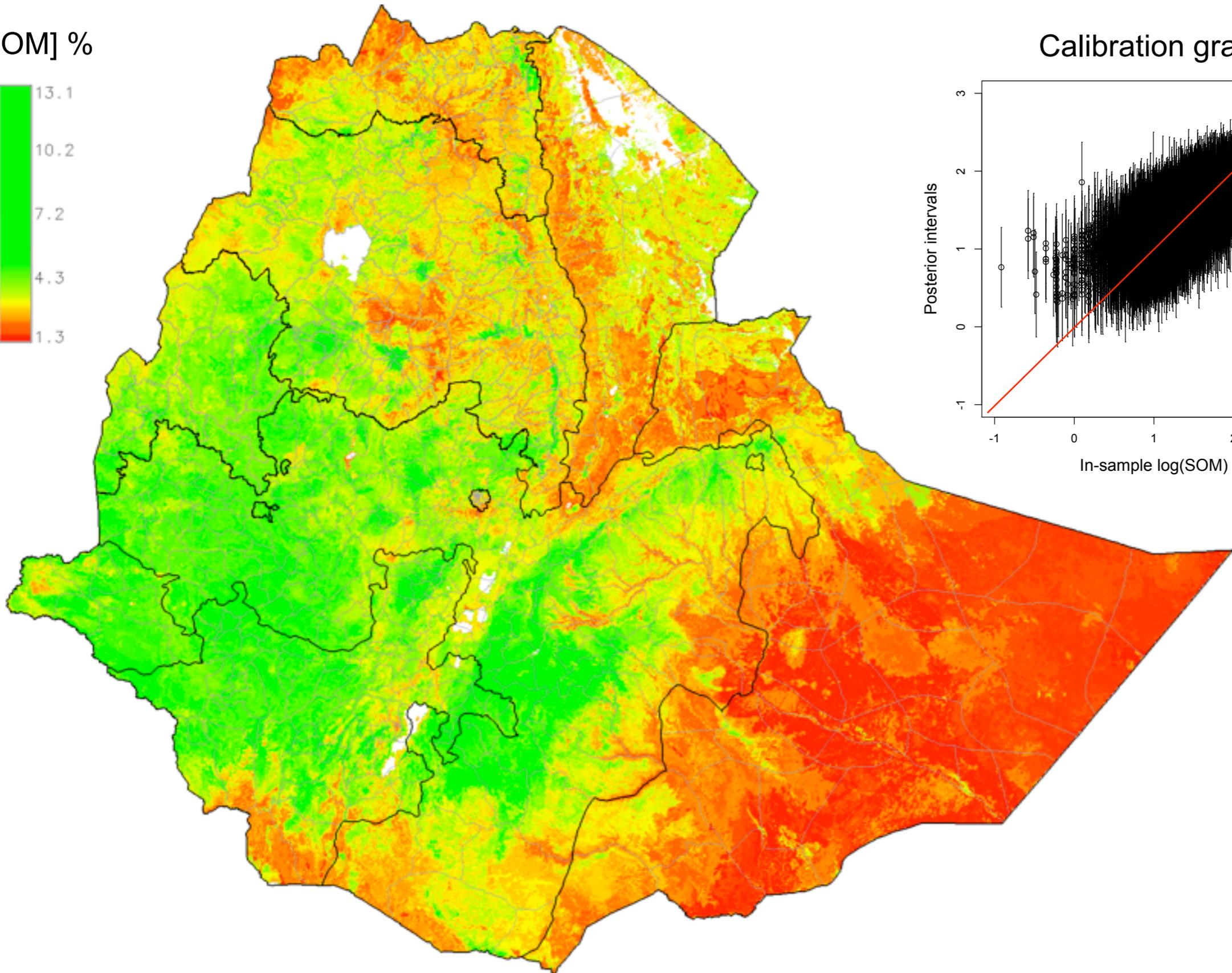
Current lime requirement ? ~ min [prob(pH < 5.5), prob(CLA)]

min [prob(pH < 5.5),
prob(CLA)]

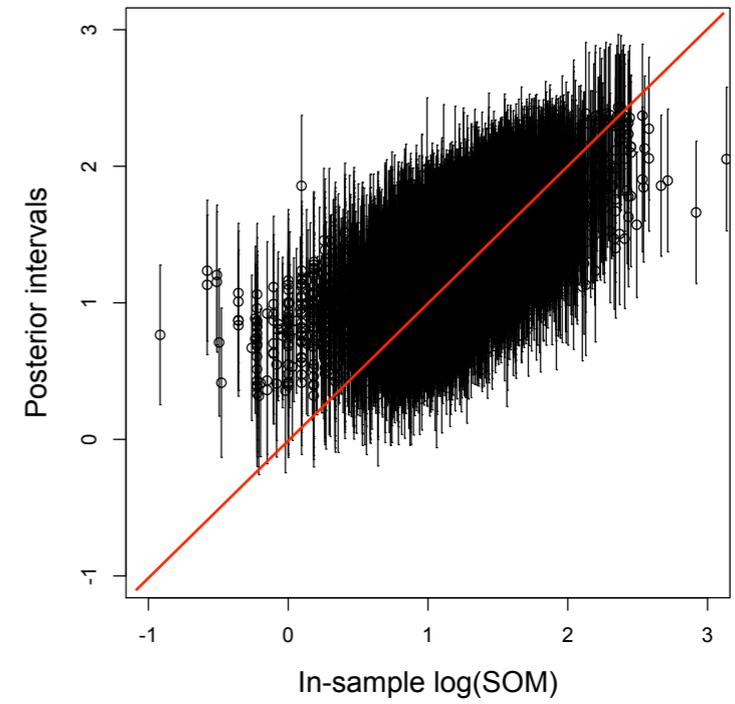


“Best” current topsoil organic matter (SOM) concentration prediction

[SOM] %



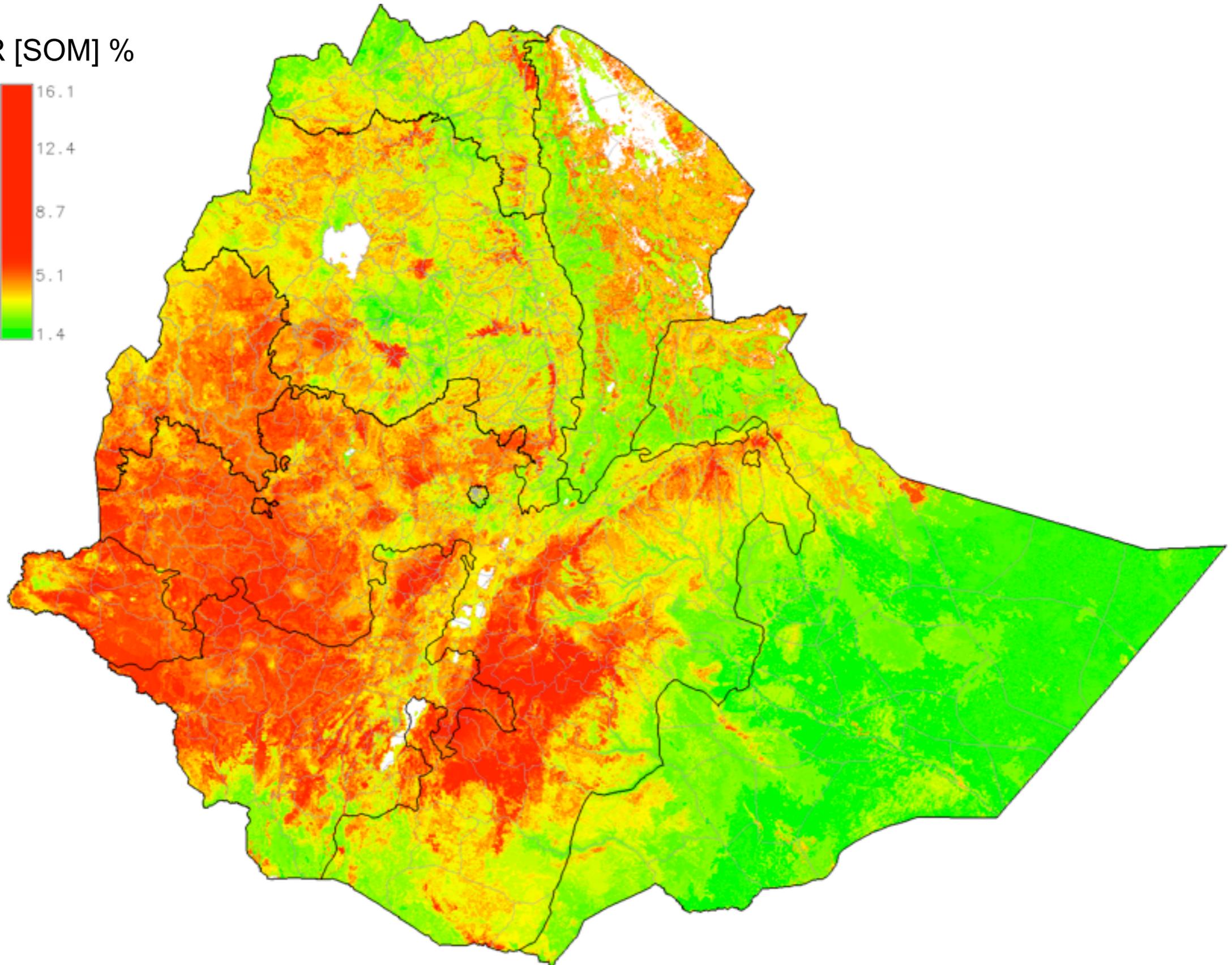
Calibration graph



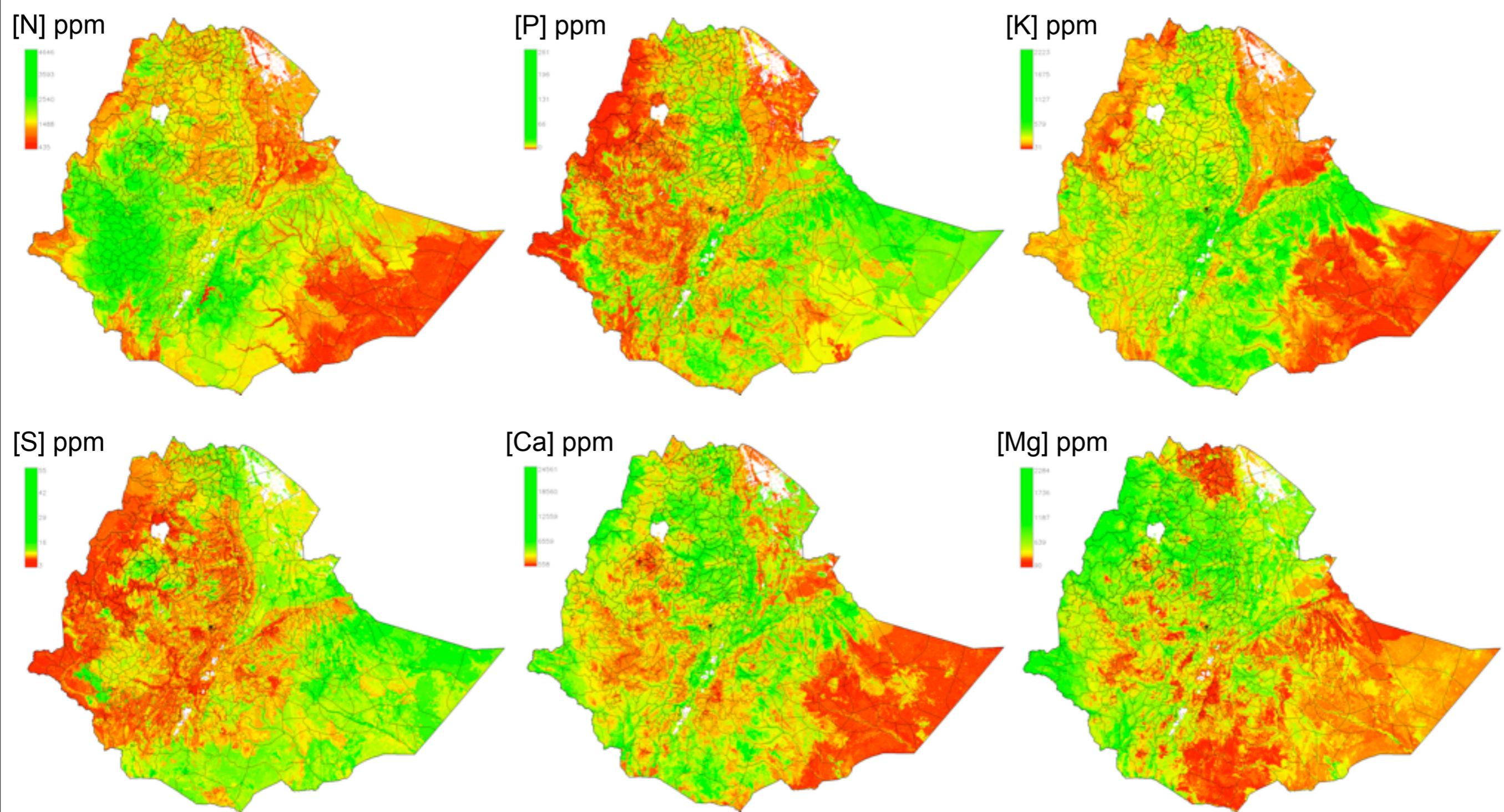
Topsoil organic matter (SOM) 95% prediction ranges

95PR = [upper 2.5%] - [lower 2.5%]

95PR [SOM] %

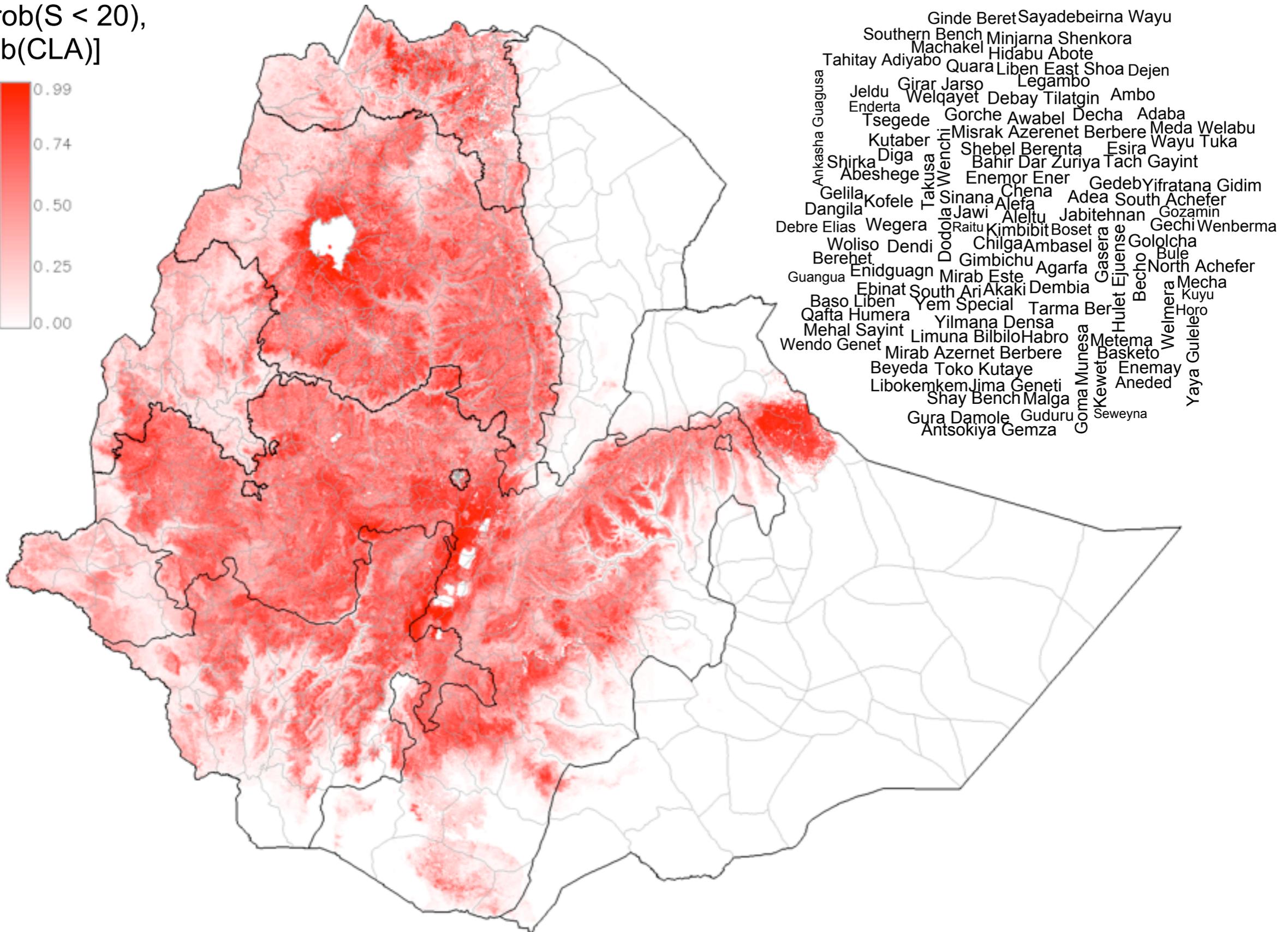


“Best” current topsoil macro-nutrient (N,P,K,S,Ca & Mg) concentration predictions



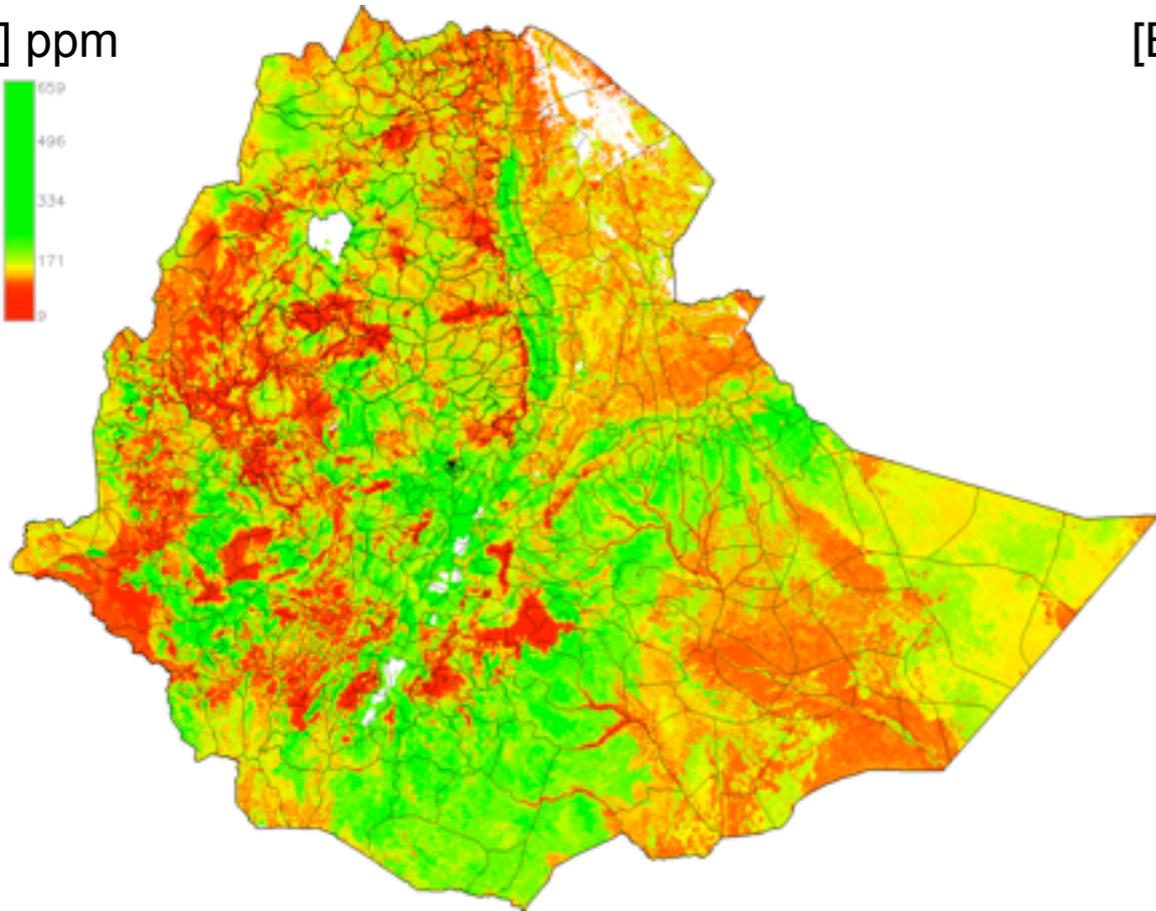
Current S requirement ? ~ min [prob(S < 20), prob(CLA)]

min [prob(S < 20),
prob(CLA)]

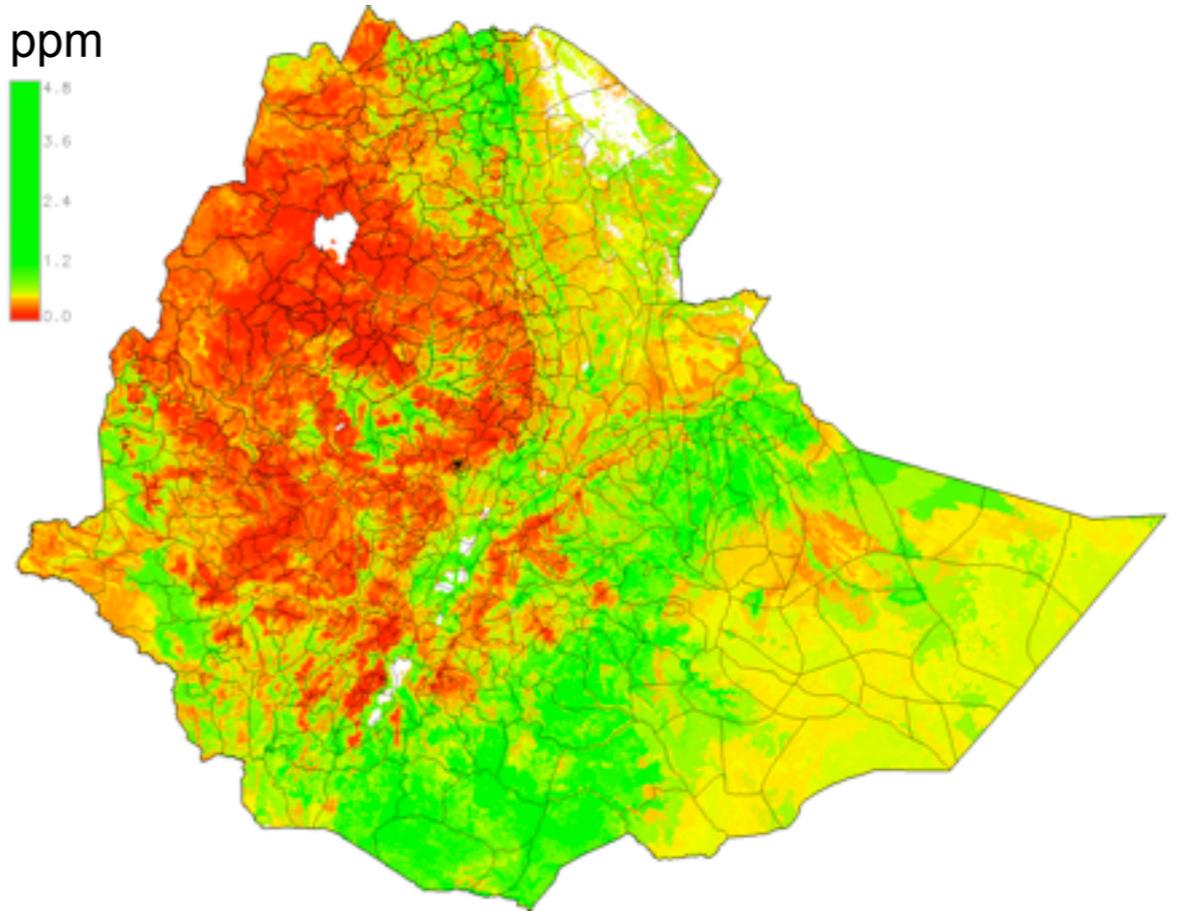


“Best” current topsoil micro-nutrient (Mn,B,Cu & Zn) concentration predictions

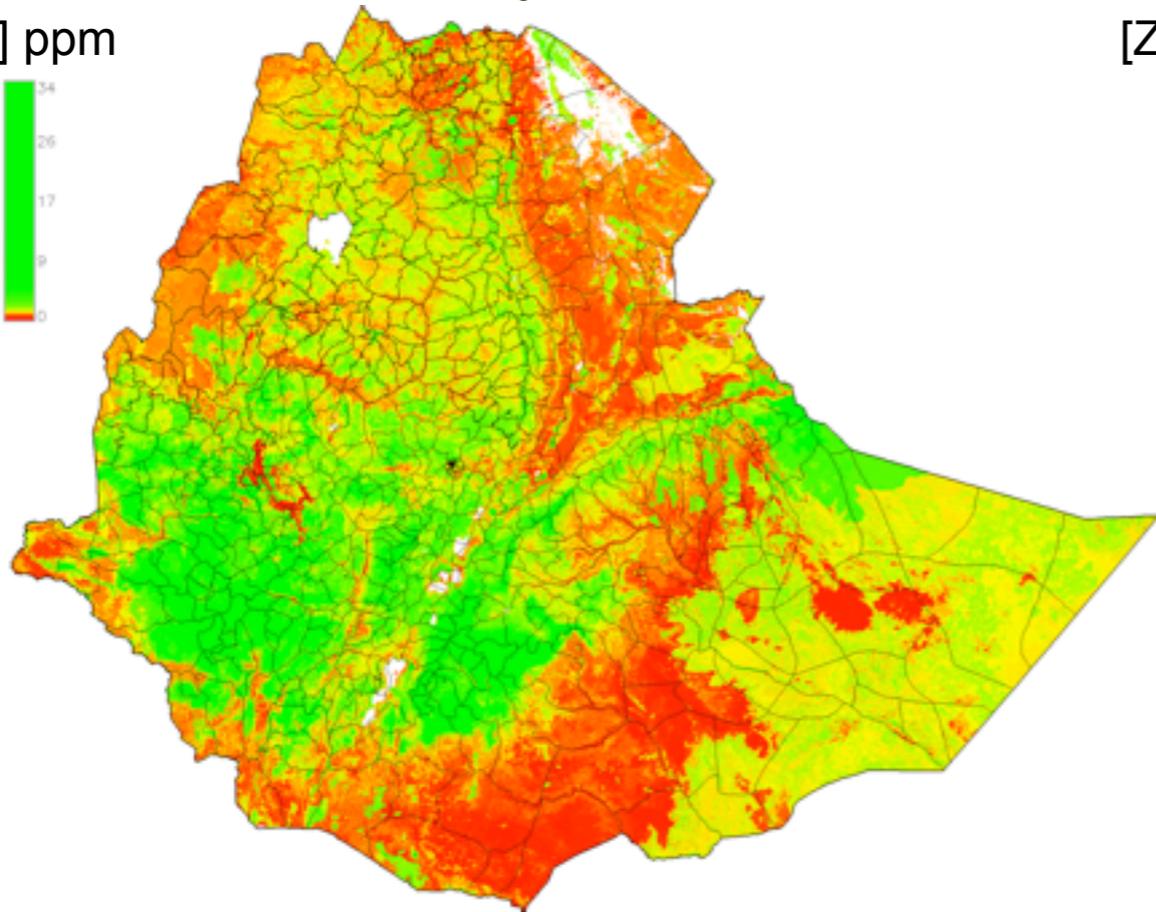
[Mn] ppm



[B] ppm



[Cu] ppm



[Zn] ppm

