SOIL

EGU

Supplement of

On the rebound: soil organic carbon stocks can bounce back to near forest levels when agroforests replace agriculture in southern India

H. C. Hombegowda et al.

Correspondence to: H. C. Hombegowda (hombegowdaars@gmail.com)

a. Natural forest in humid zone
b. Natural forest in dry sub-humid zone
c. Agriculture in humid zone
d. Agriculture in moist sub-humid zone
e. Homegarden in humid zone
f. Homegarden in moist sub-humid
g. Coffee in humid zone
h. Coffee in moist sub-humid zone
i. Coconut in humid zone
j. Coconut in dry sub-humid zone
k. Mango in dry sub-humid zone
l. Mango in semi-arid zone

Figure S1. Photos of the six land use types investigated in two climatic zones.
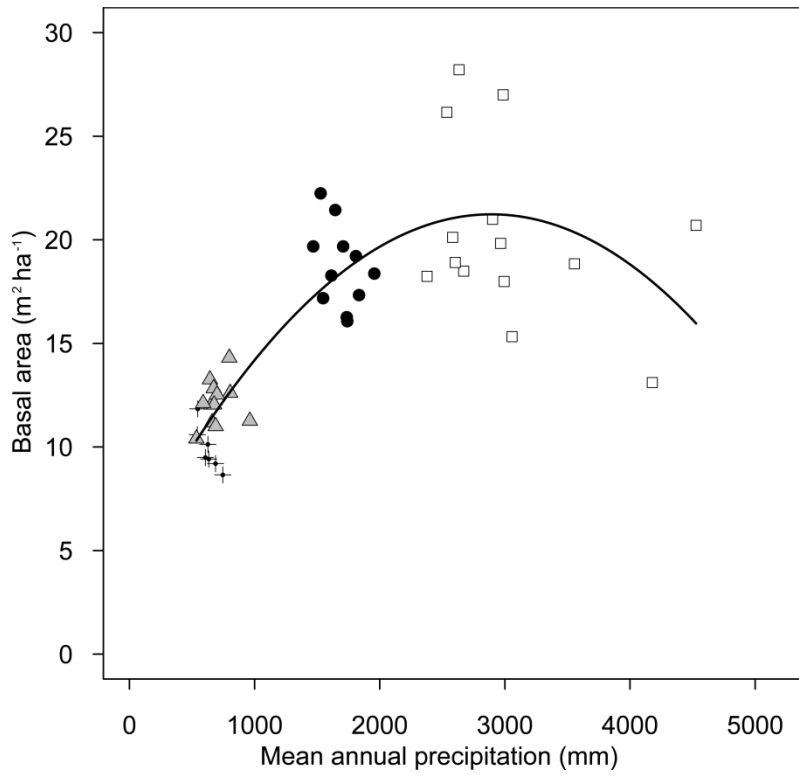
Figure S2. Scatterplot showing the relationship between basal area (m^2 ha^{-1}) and MAP (mm) across humid (□), moist-sub-humid (●), dry sub-humid (△) and semi-arid (+) climate zones.
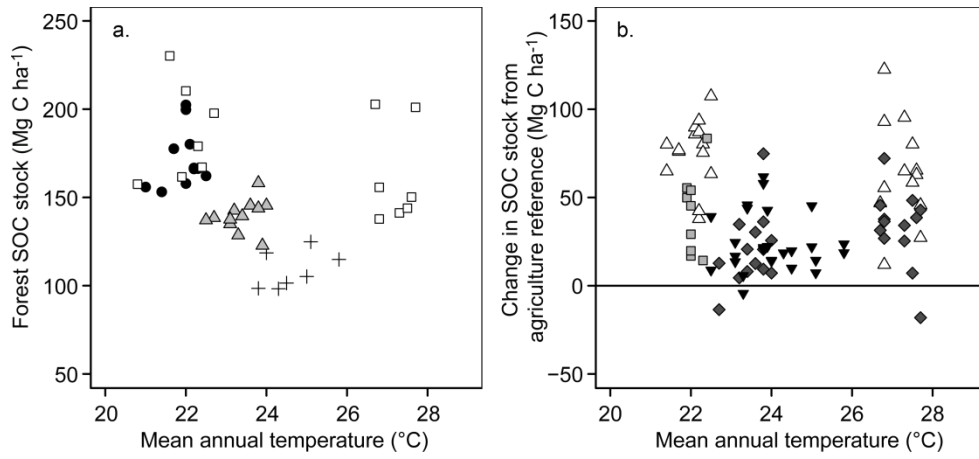
Figure S3. Scatterplots showing the relationship (or lack thereof) between MAT (°C) and (a) forest SOC stocks across humid (□), moist-sub-humid (●), dry sub-humid (△) and semi-arid (+) climate zones and (b) changes in SOC stocks in in homegardens (△), coffee (▣), coconut (◆) and mango (▼) AFS.
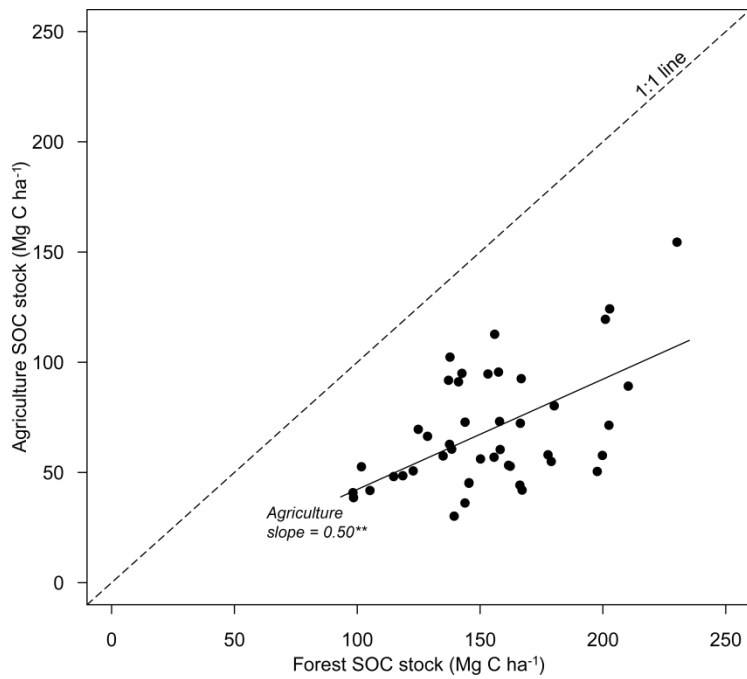
Figure S4. a) Agriculture SOC stocks (●) in comparison to forest reference SOC stock in the 100 cm soil profile. The slope of the linear regression (m) that differed significantly from one highlight an uneven response of carbon loss or gain as affected by the initial SOC stocks. The stars, ** indicates that the linear regression slope is significantly different from one (P <0.01).
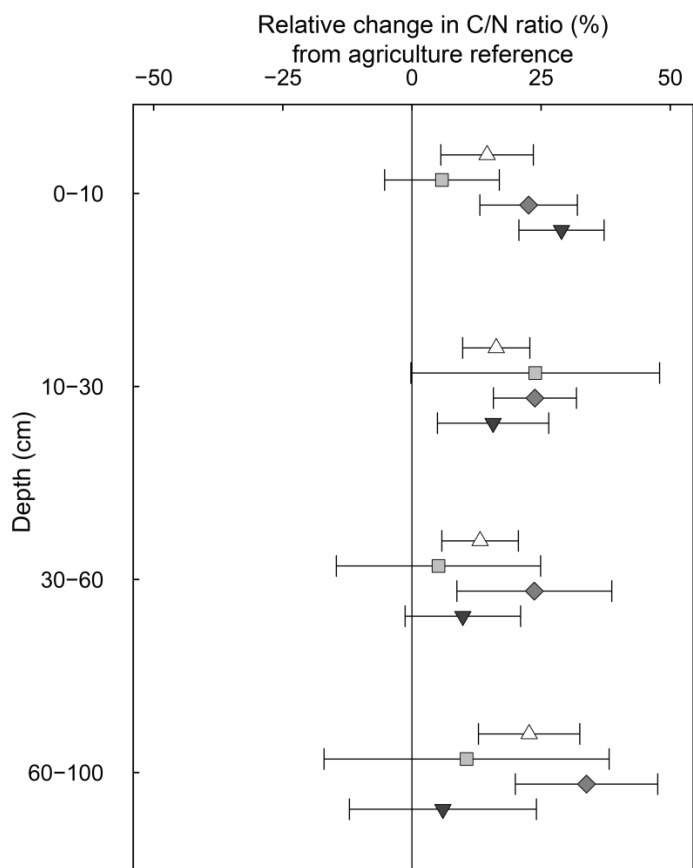
Figure S5. Relative change in C/N ratio in the 1-m soil profile from agriculture to agroforestry systems (homegarden (△; n=27), coffee (▢; n=9) coconut (◇; n=28) and mango (▼; n=28). Error bars indicate the 95% confidence intervals based on the Student's T distribution.