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BIOCHAR-PROSPECTS FOR AFRICA

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Projected cereal yield in 2025

Region	Shortfall (million tons)
Sub-Saharan Africa	-88.7
East & Southeast Asia	-126.9
Middle East	-132.7

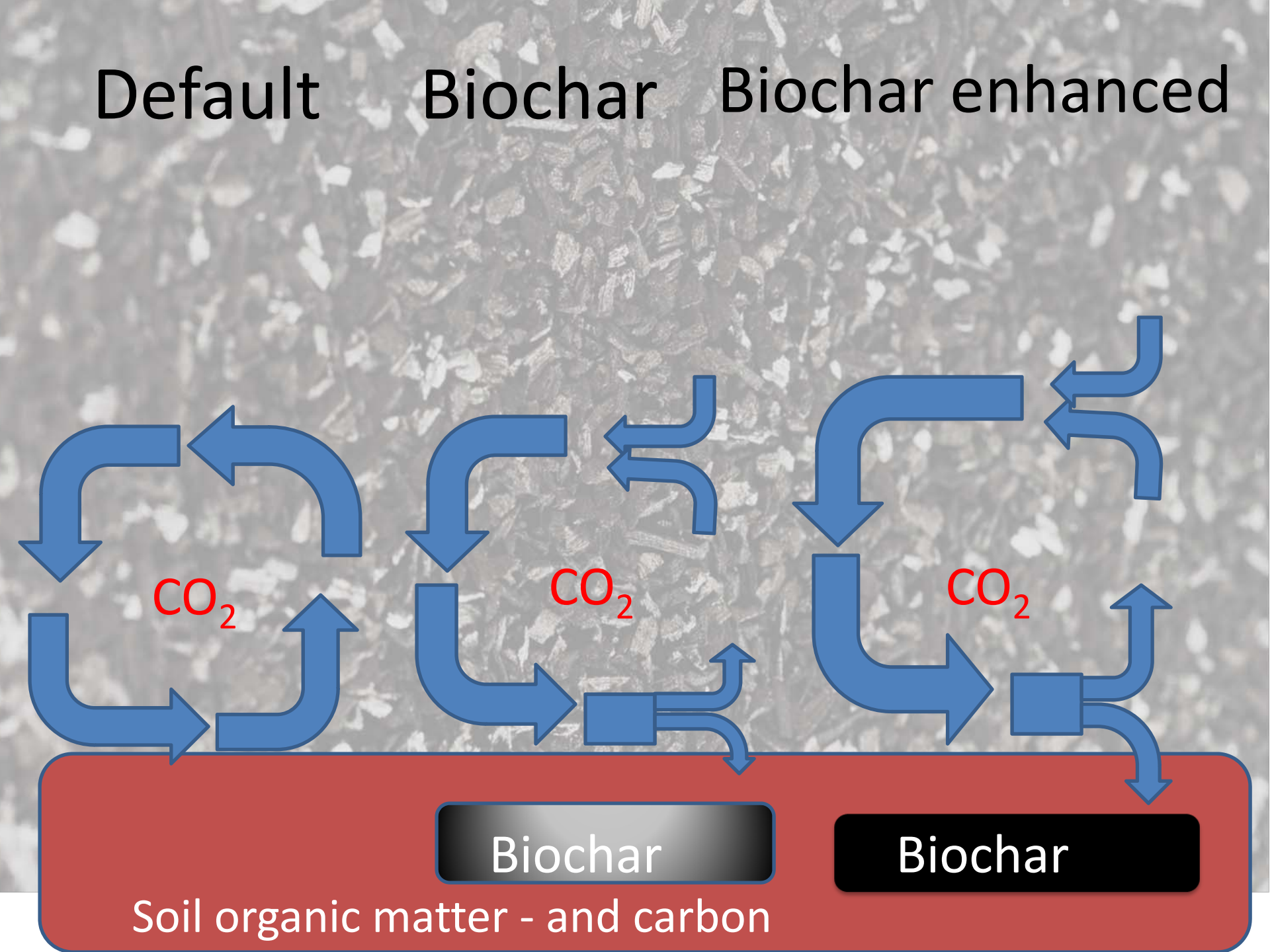
WHY BIOCHAR?

- Plants use sunlight to make energy rich bonds that fix carbon from CO_2 to build and maintain biomass.

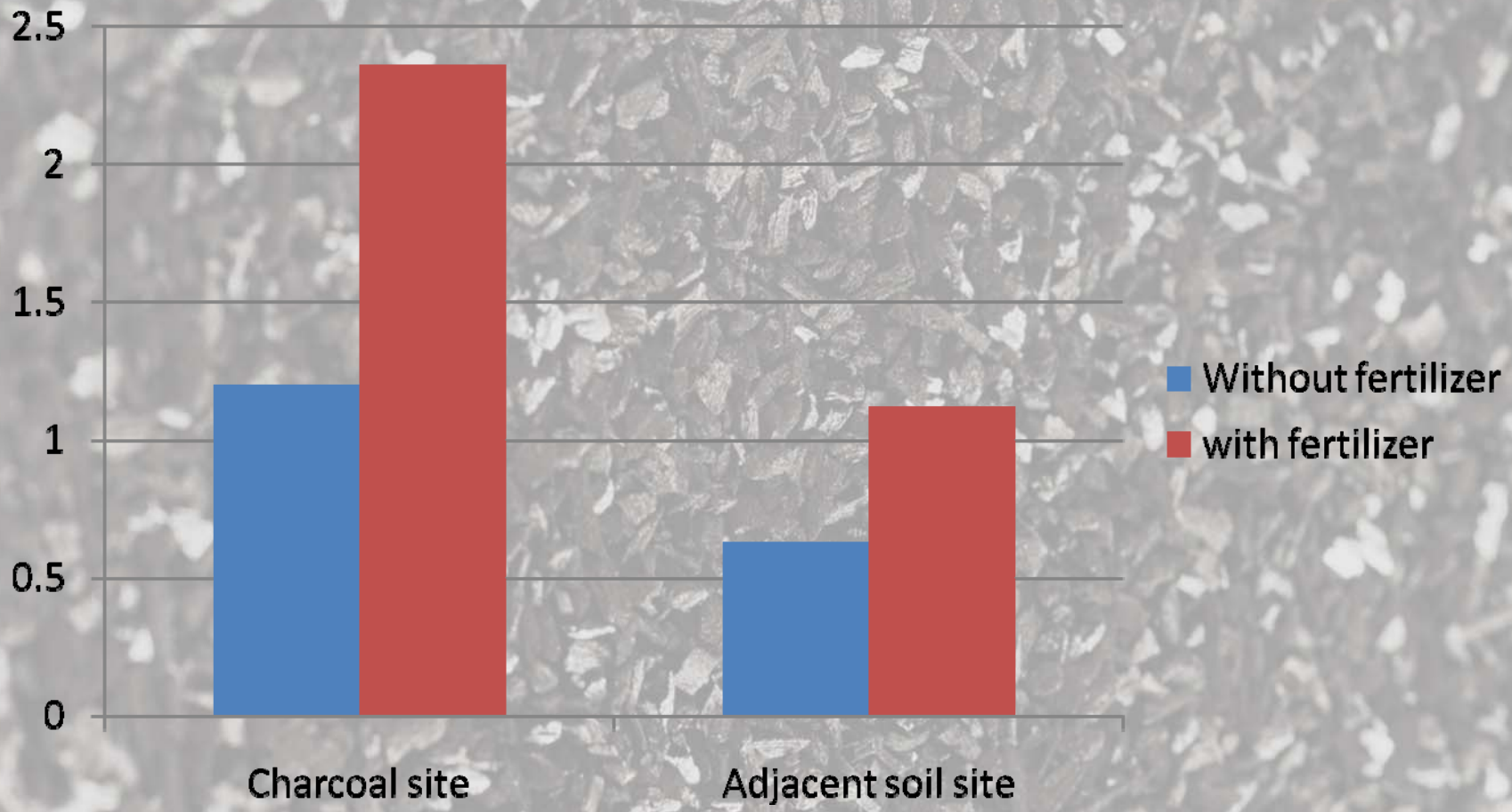
- Microbes release this energy from dead plant materials in soil and the carbon is returned to the atmosphere.

- This happens rapidly in tropical environment so although important plant nutrients are released, the contribution to soil structural properties provided by soil organic matter is short-lived .

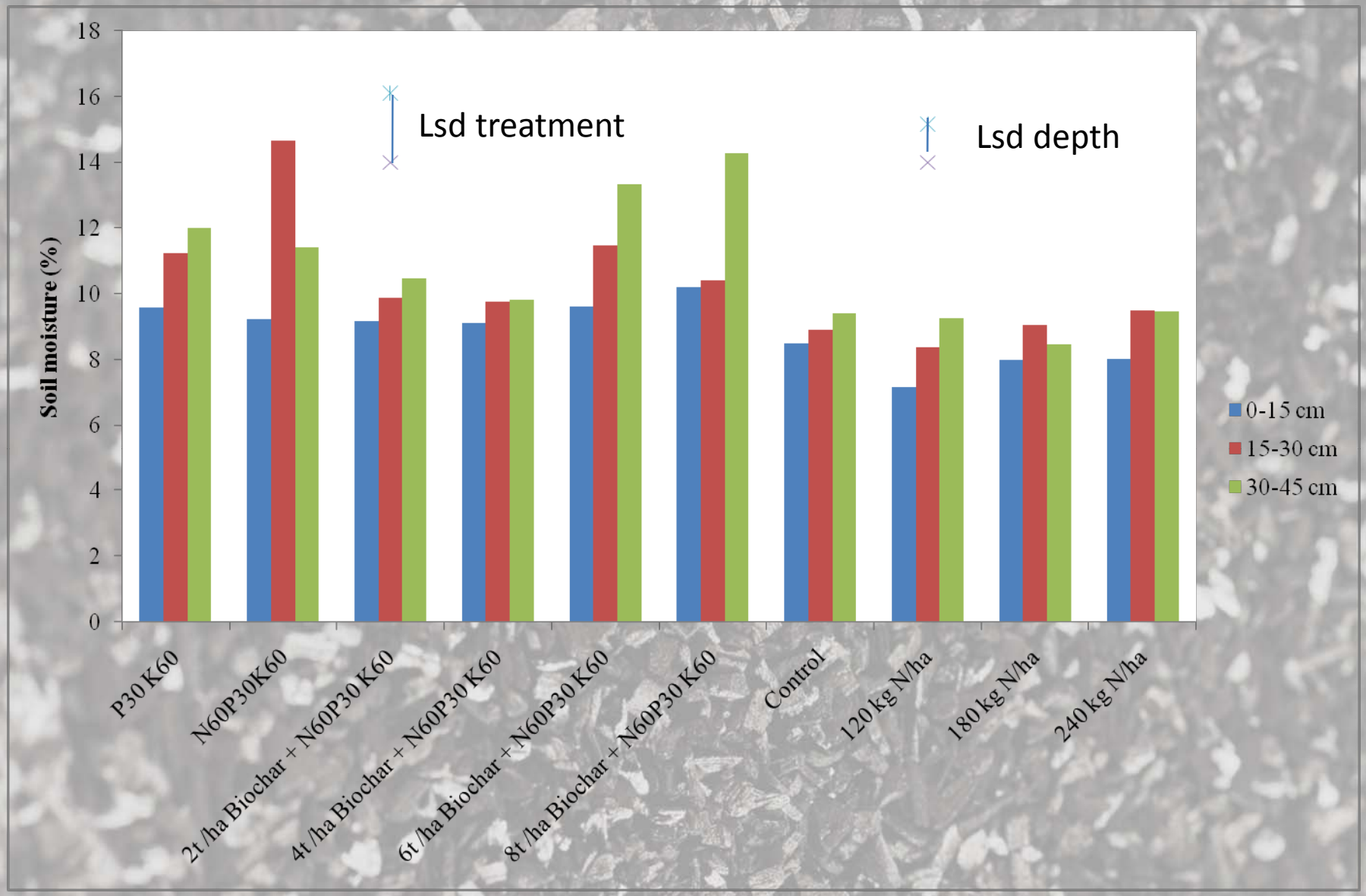
- Prior stabilization of organic resources by charring prevents CO_2 release, builds soil carbon and promises enduring benefits to crop production

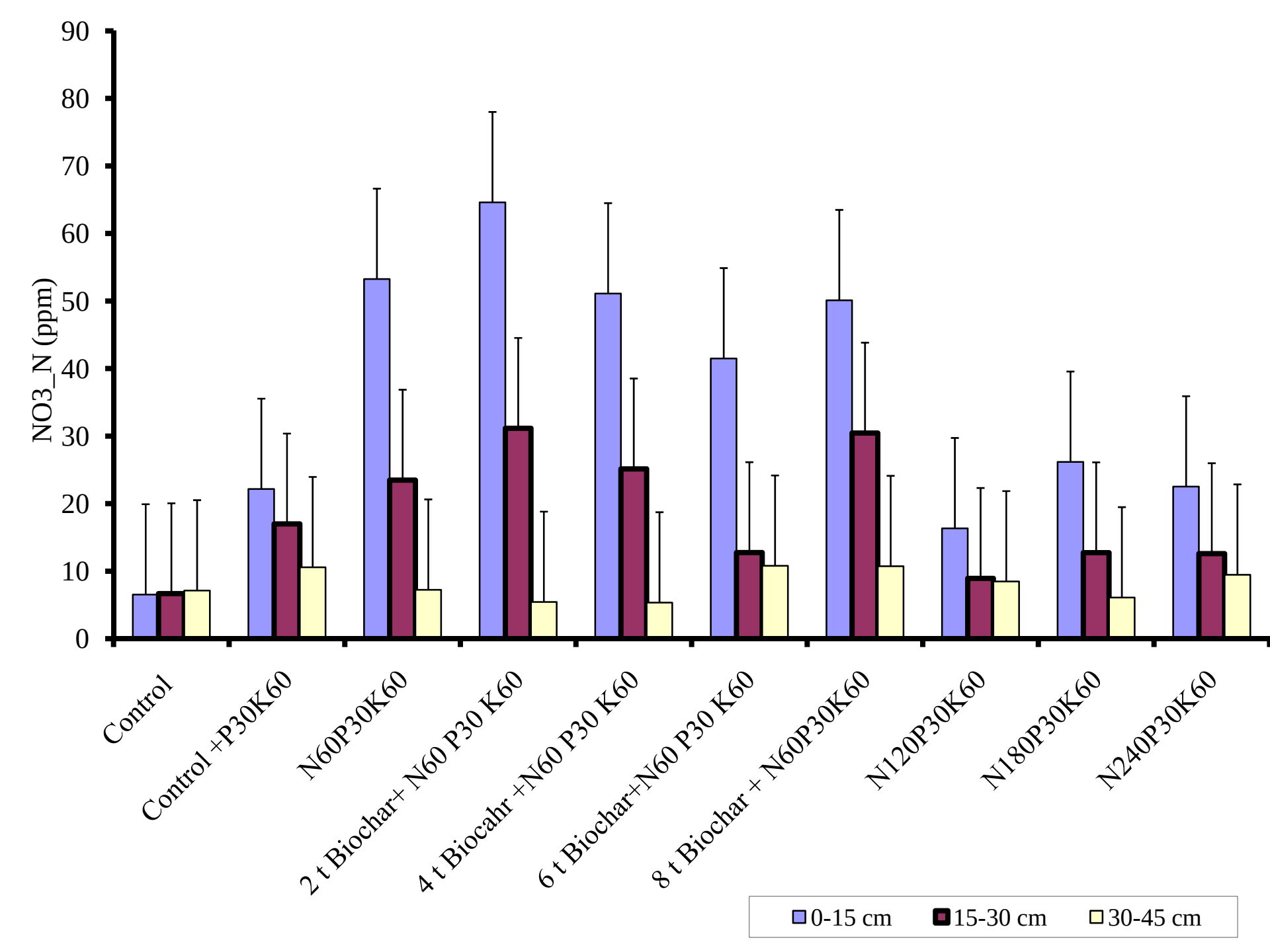

Default
Biochar
Biochar enhanced
CO_2
CO_2
CO_2
Biochar
Biochar
Soil organic matter - and carbon

Maize grain yield (t/ha)



Source: Oguntunde et al, 2004 (Ejura, Ghana)


Soil moisture (%)
18
16
14
12
10
8
6
4
2
0
Lsd treatment
Lsd depth
0-15 cm
15-30 cm
30-45 cm
P30 K60
N60P30K60
2t /ha Biochar + N60P30 K60
4t /ha Biochar + N60P30 K60
6t /ha Biochar + N60P30 K60
8t /ha Biochar + N60P30 K60
Control
120 kg N/ha
180 kg N/ha
240 kg N/ha


NO3_N (ppm)
90
80
70
60
50
40
30
20
10
0
Control
Control +P30K60
N60P30K60
2 t Biochar+ N60 P30 K60
4 t Biocahr +N60 P30 K60
6 t Biochar+N60 P30 K60
8 t Biochar + N60P30K60
N120P30K60
N180P30K60
N240P30K60
0-15 cm
15-30 cm
30-45 cm

Conclusions

- Biochar is a single approach that addresses four of the major global challenges
- Farmers can benefit commercially from Carbon neutral foods

ACKNOWLEDGEMENTS

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