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Farmer Feasible Soil Health Assessment

Helen Hughes

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Review

Towards a farmer-feasible soil health assessment that is globally applicable

H.M. Hughes [a], S. Koolen [b], M. Kuhnert [c], E.M. Baggs [a], S. Maund [d], G.W. Mullier [e], J. Hillier [a]

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Principles for farmer-feasible Soil Health Assessment

1. Sensitive to farm management
2. Measurable in field or accessible facilities
3. Repeatable and consistent
4. Relevant to decisions


Is there a Soil Health Assessment available for farmers?

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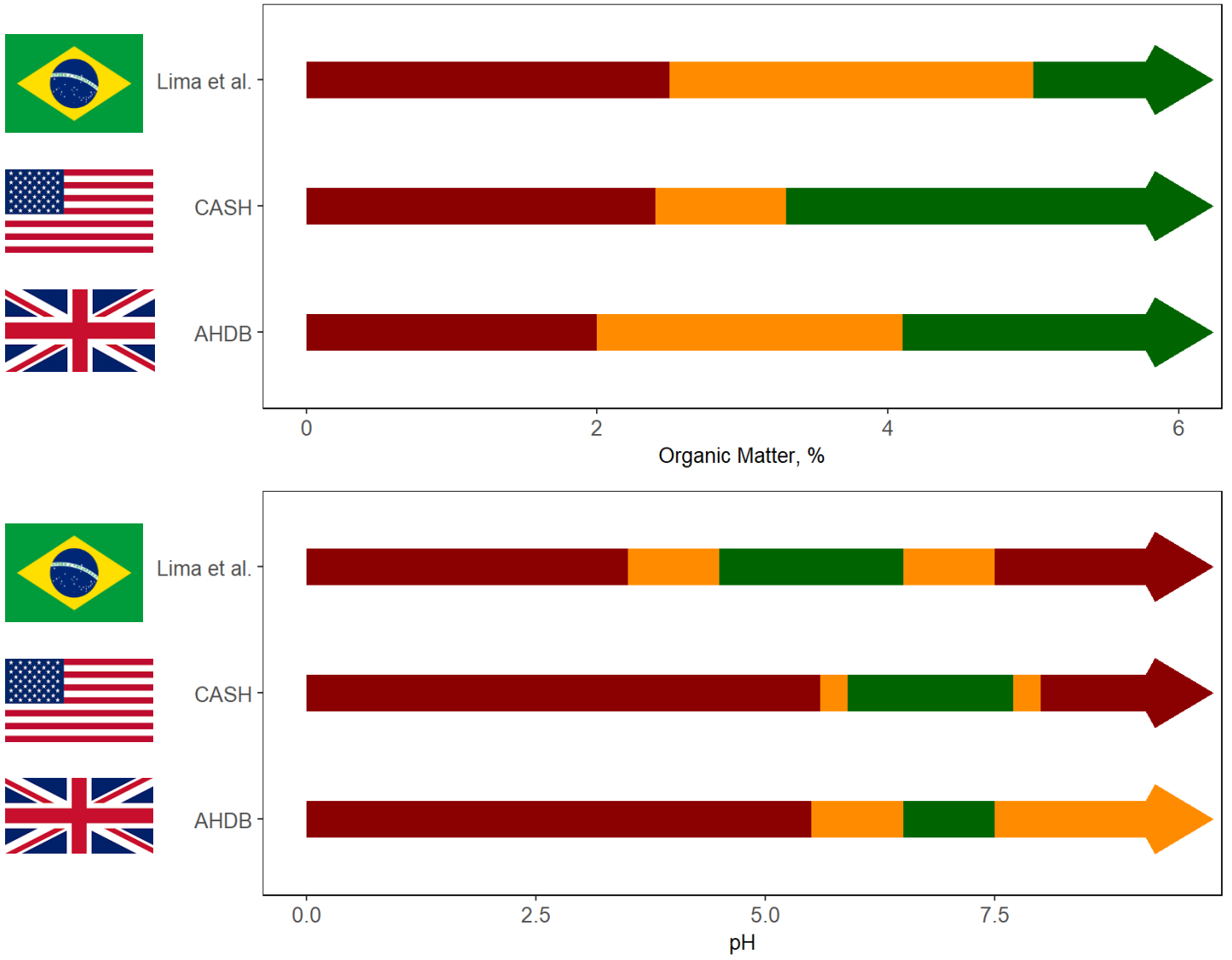
Agro-environmental context



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Average minimum dataset

11 indicators

Bünemann et al. (2018)

85% farms

≤ 2ha in size

Lowder et al. (2021)

What role for farmer knowledge?

Bünemann, E.K., Bongiorno, G., Bai, Z., Creamer, R.E., De Deyn, G., De Goede, R., Fleskens, L., Geissen, V., Kuyper, T.W., Mäder, P. and Pulleman, M., 2018. Soil quality–A critical review. *Soil biology and biochemistry*, *120*, pp.105-125.
Lowder, S.K., Sánchez, M.V. and Bertini, R., 2021. Which farms feed the world and has farmland become more concentrated?. *World Development*, *142*, p.105455.

Recap

- Existing Soil Health Assessments are only parameterised for specific geographies
- New indicators and technologies can help, but reliance on expensive technology and lab-based measurement is an obstacle for many farmers
- Farmers have strong expertise on soil health and management, but their indicators are not necessarily global or quantifiable

How can Soil Health Assessment go between local and global?

Different priorities?

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Farmer priorities	Supply chain priorities
Tools	Targets
Consistent	Standardised
Decision relevant	Evidence-based, verifiable
Affordable, practical	Benchmarked
(Hyper-) Locally applicable	Globally applicable

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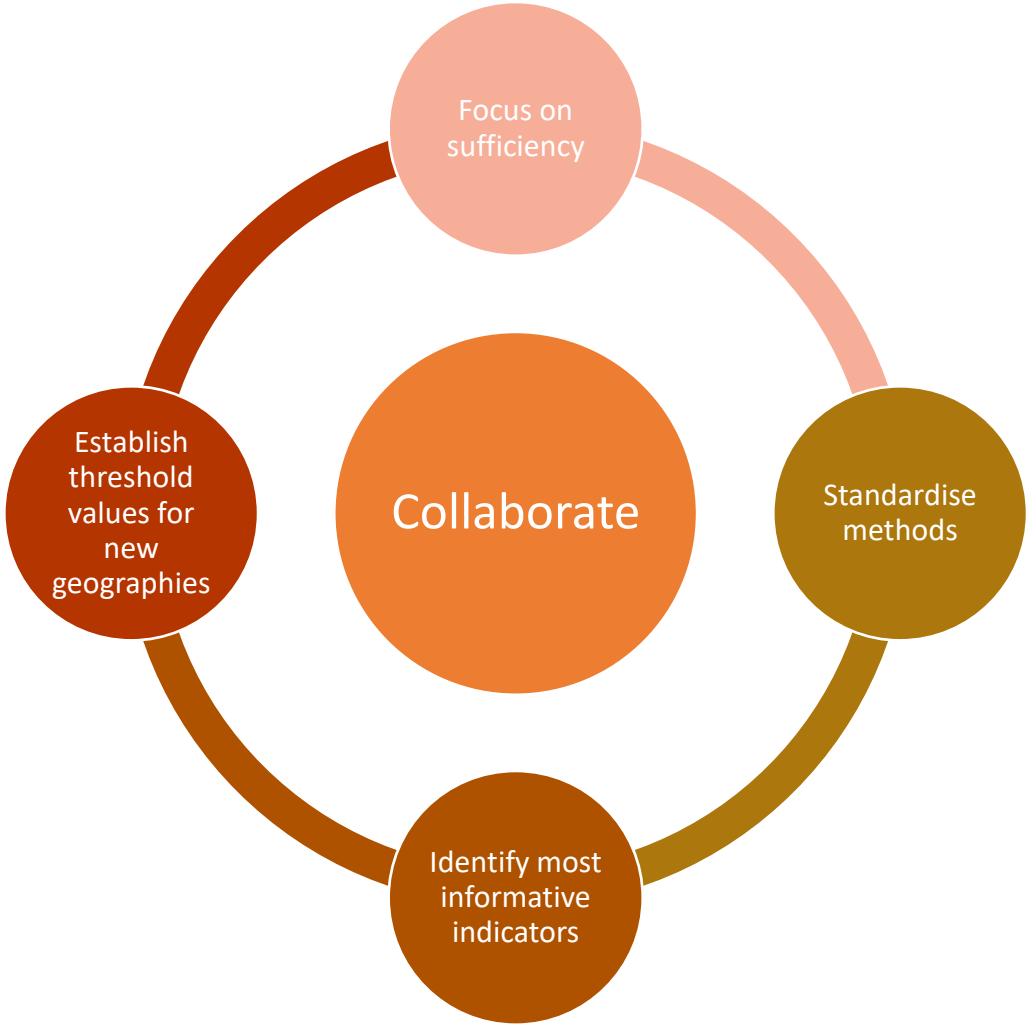
Priorities for progress

Globally relevant and locally adapted



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Thank you

Email:
H.M.Hughes@sms.ed.ac.uk