



On farm feed self-sufficiency – the wider sustainability impacts of feed choices

30th January 2023

Source: Jude L. Capper, 2023



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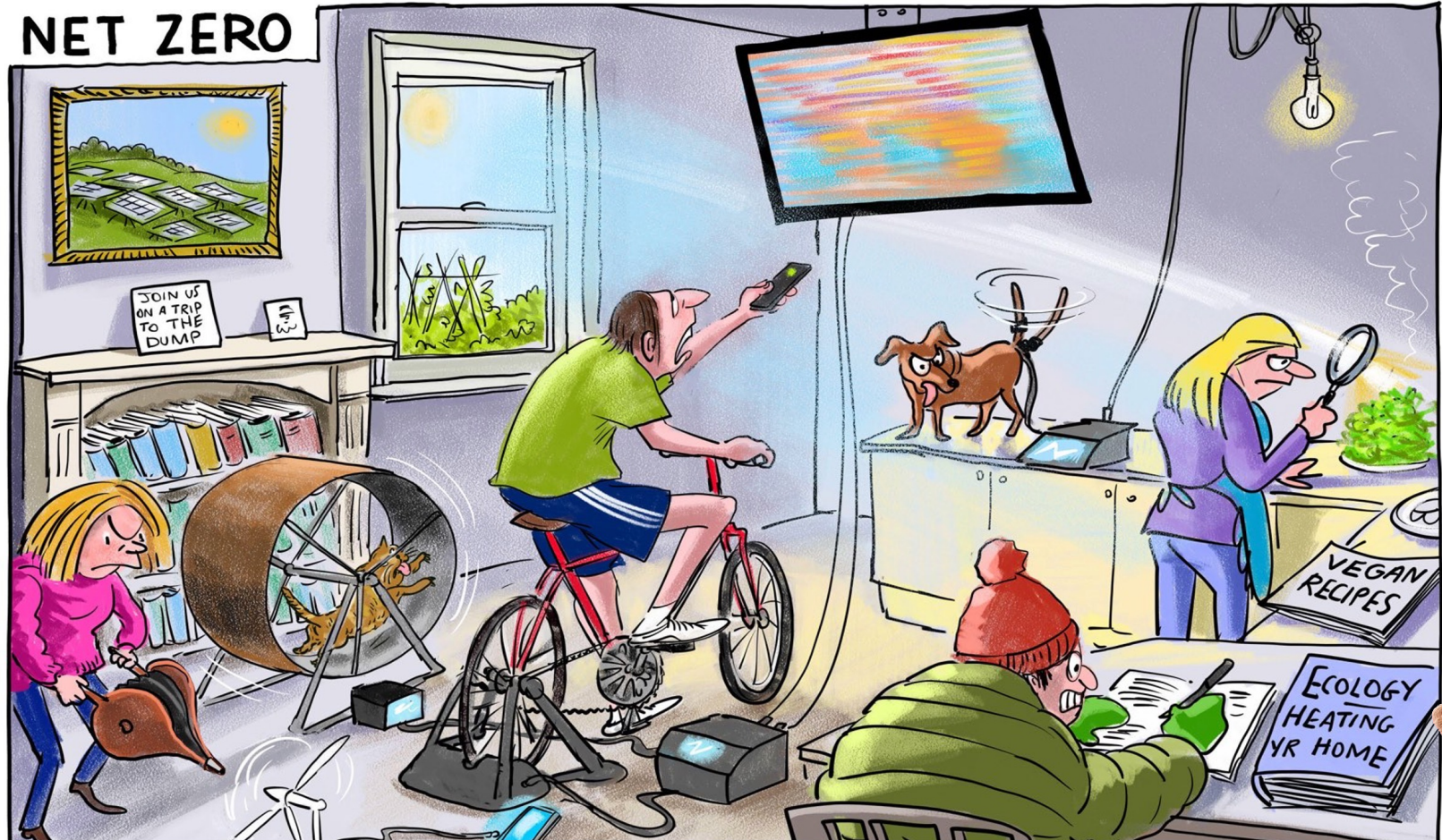
There is no definitive sustainable protein system – but every system can be sustainable



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Net Zero is a clear priority

NET ZERO



Source: Created by Dr. Jude L. Capper, 2021. Cartoon from: <https://twitter.com/Cartoon4sale/status/1384537729460056067?s=20>



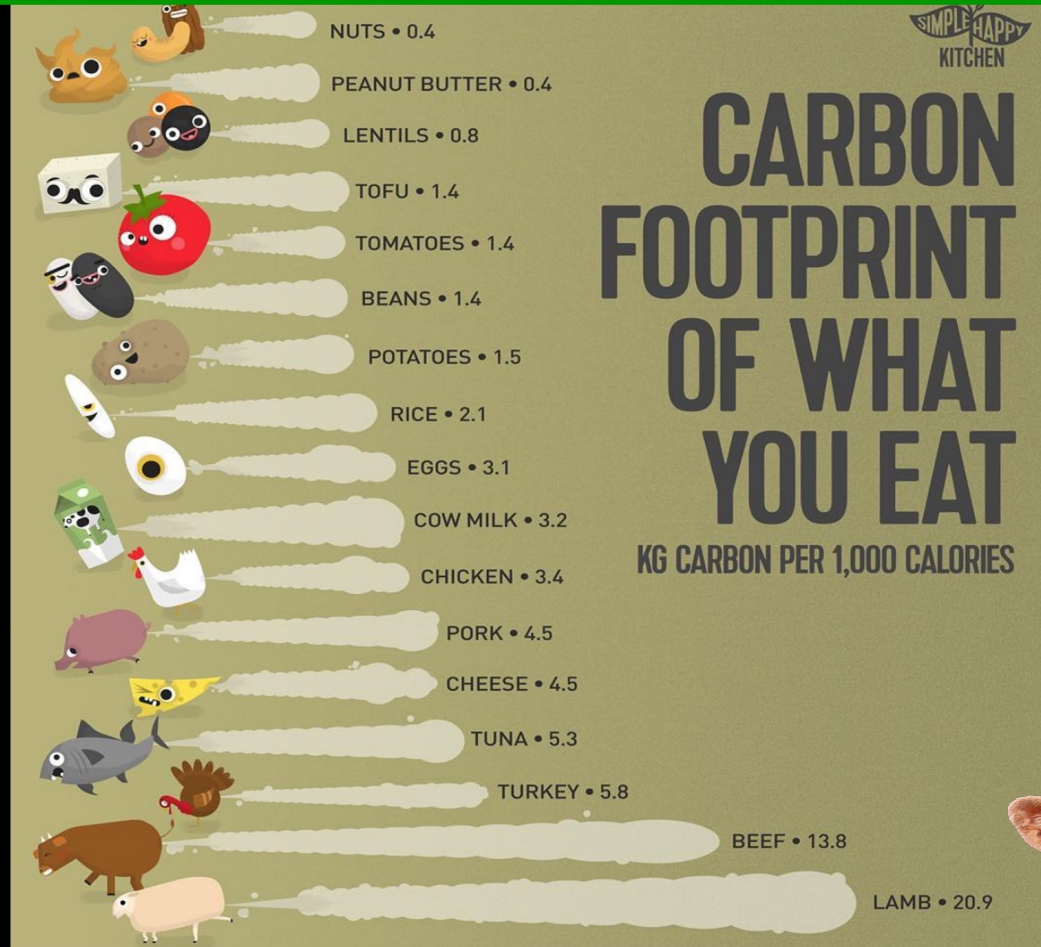
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Global averages are meaningless

The carbon footprints of the foods we eat vary considerably – global average figures are inappropriate when food production is regional



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Source: Created by Dr. Jude L. Capper, 2020, infographic from: https://www.instagram.com/simple_happy_kitchen/



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Environmental impacts are not limited to greenhouse gas emissions



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Source: Created by Dr. Jude L. Capper, 2020



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Feed efficiency is one of the principal issues used to denigrate animal agriculture

IF EVERY AMERICAN STOPPED EATING MEAT THERE WOULD BE ENOUGH GRAIN TO FEED 1.4 BILLION PEOPLE

#IMAGREENMONSTER

Source: Created by Dr. Jude L. Capper, 2015. Picture from: <http://www.onegreenplanet.org/animalsandnature/eat-for-the-planet-meat-and-the-environment/>



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Can we grow human food crops everywhere?



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Source: Created by Dr. Jude L. Capper, 2021



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Can we grow human food crops everywhere?



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Can we grow human food crops everywhere?



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Source: Created by Dr. Jude L. Capper, 2021



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>60% of UK land is not suitable for growing arable crops



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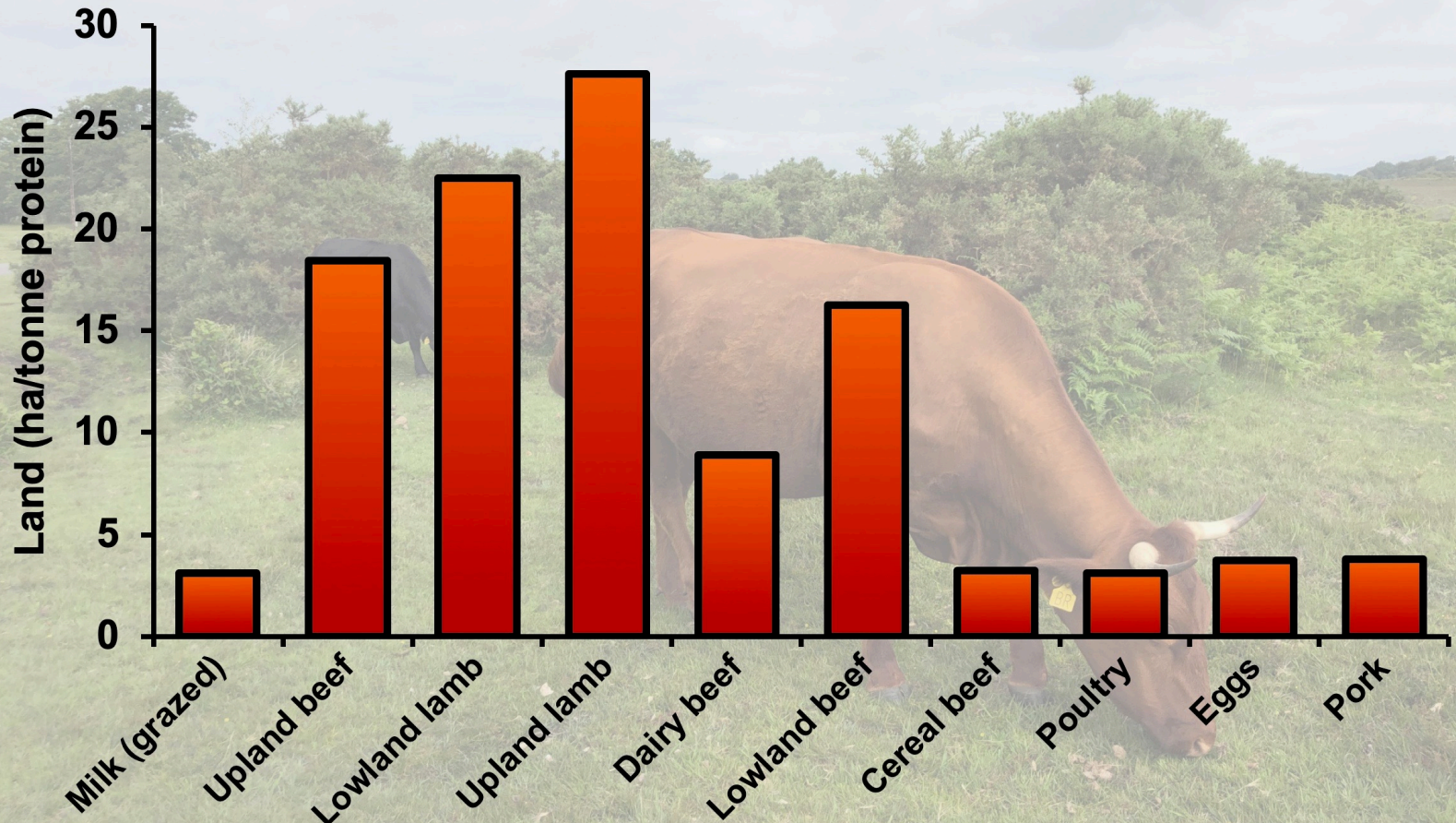


Source: Created by Dr. Jude L. Capper, 2020. Grazing land includes temporary grass on arable land (5% of total). Data from DEFRA. 2020. Farming statistics - provisional crop areas, yields and livestock populations at 1 June 2020 – United Kingdom.
https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/946161/structure-jun2020final-uk-22dec20.pdf



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Livestock systems vary widely in land use

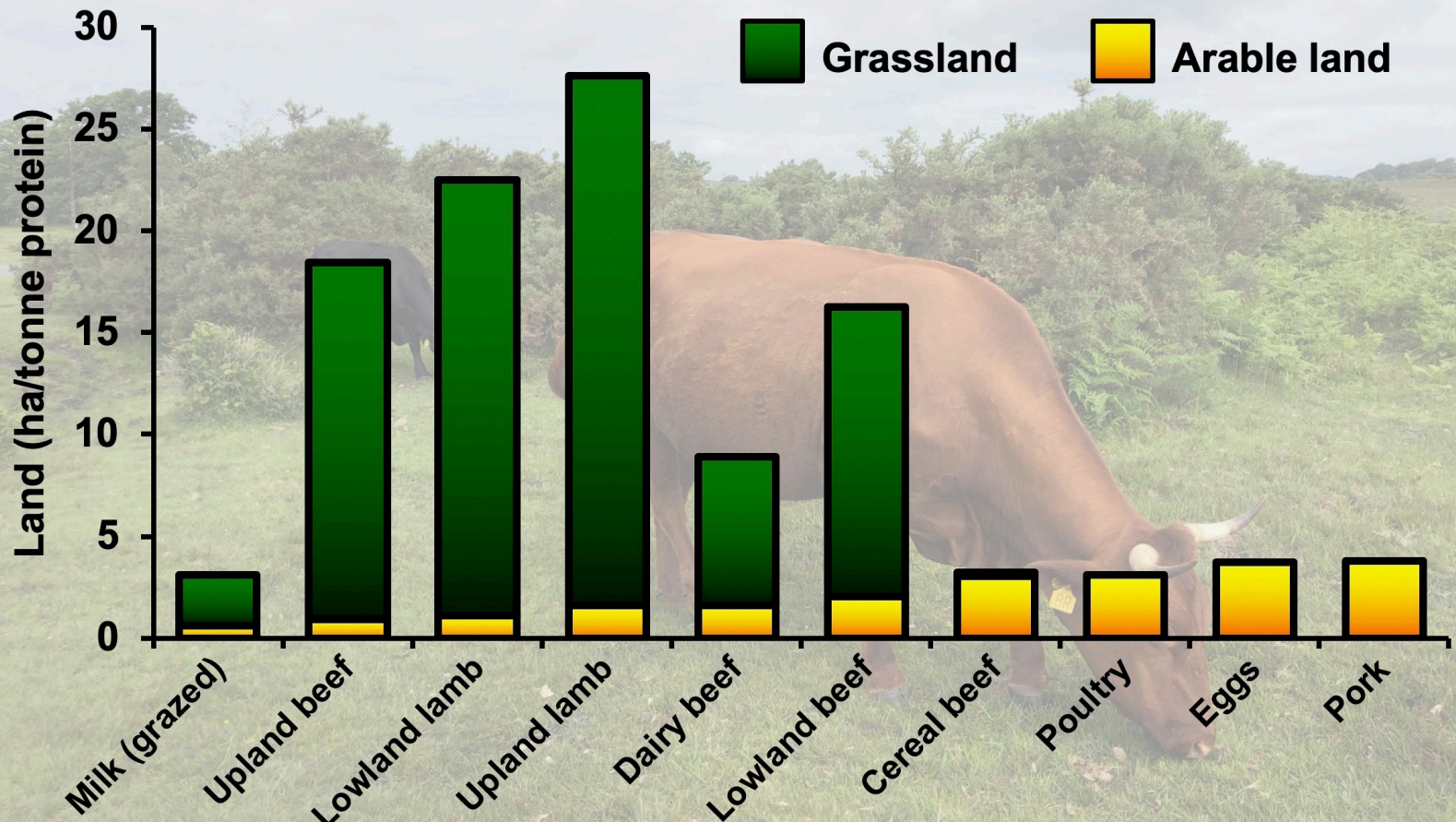


Source: Created by Dr. Jude L. Capper, 2020; data from Wilkinson and Lee (2018) Review: Use of human-edible animal feeds by ruminant livestock. *Animal*.



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Livestock systems vary widely in arable and grassland use



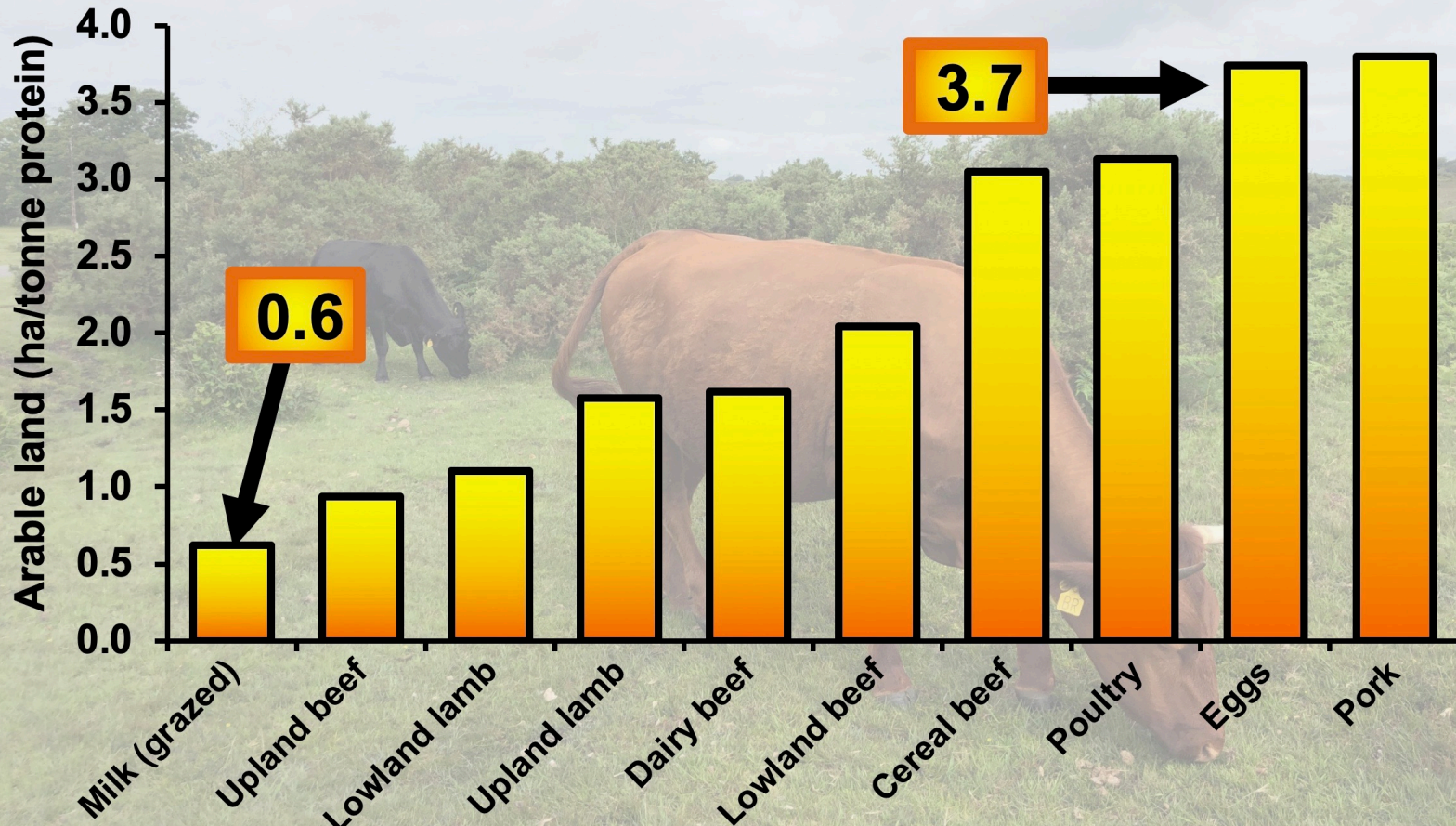
Source: Created by Dr. Jude L. Capper, 2020; data from Wilkinson and Lee (2018) Review: Use of human-edible animal feeds by ruminant livestock. *Animal*.



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Livestock systems vary widely in arable land use

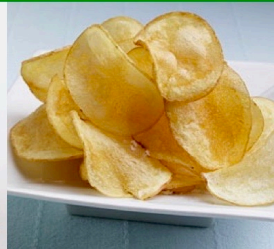
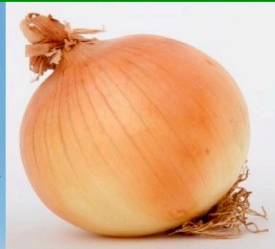


Source: Created by Dr. Jude L. Capper, 2020; data from Wilkinson and Lee (2018) Review: Use of human-edible animal feeds by ruminant livestock. *Animal*.



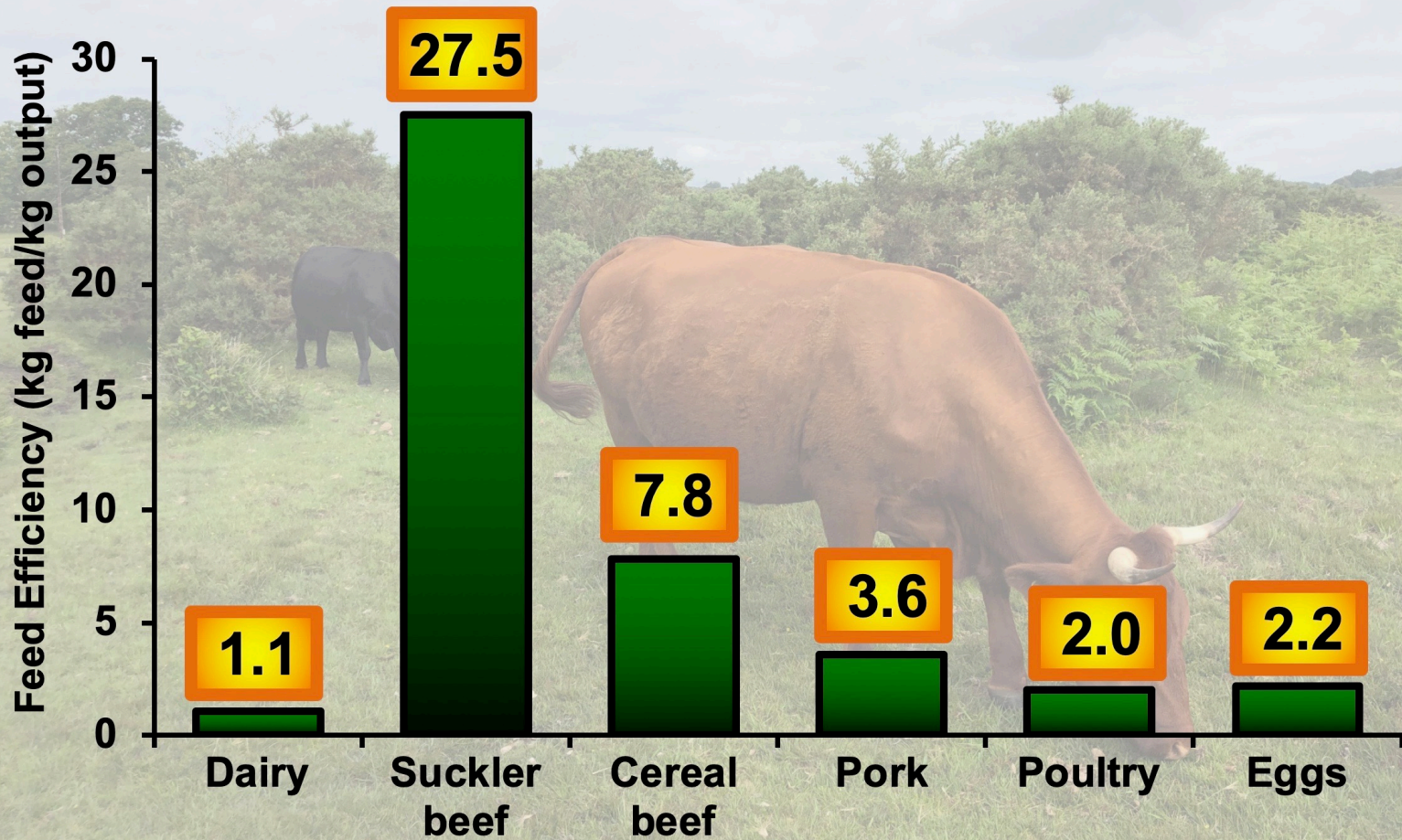
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What do these industries have in common? They all provide by-products fed to animals



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Feed efficiency ratios vary between systems and species

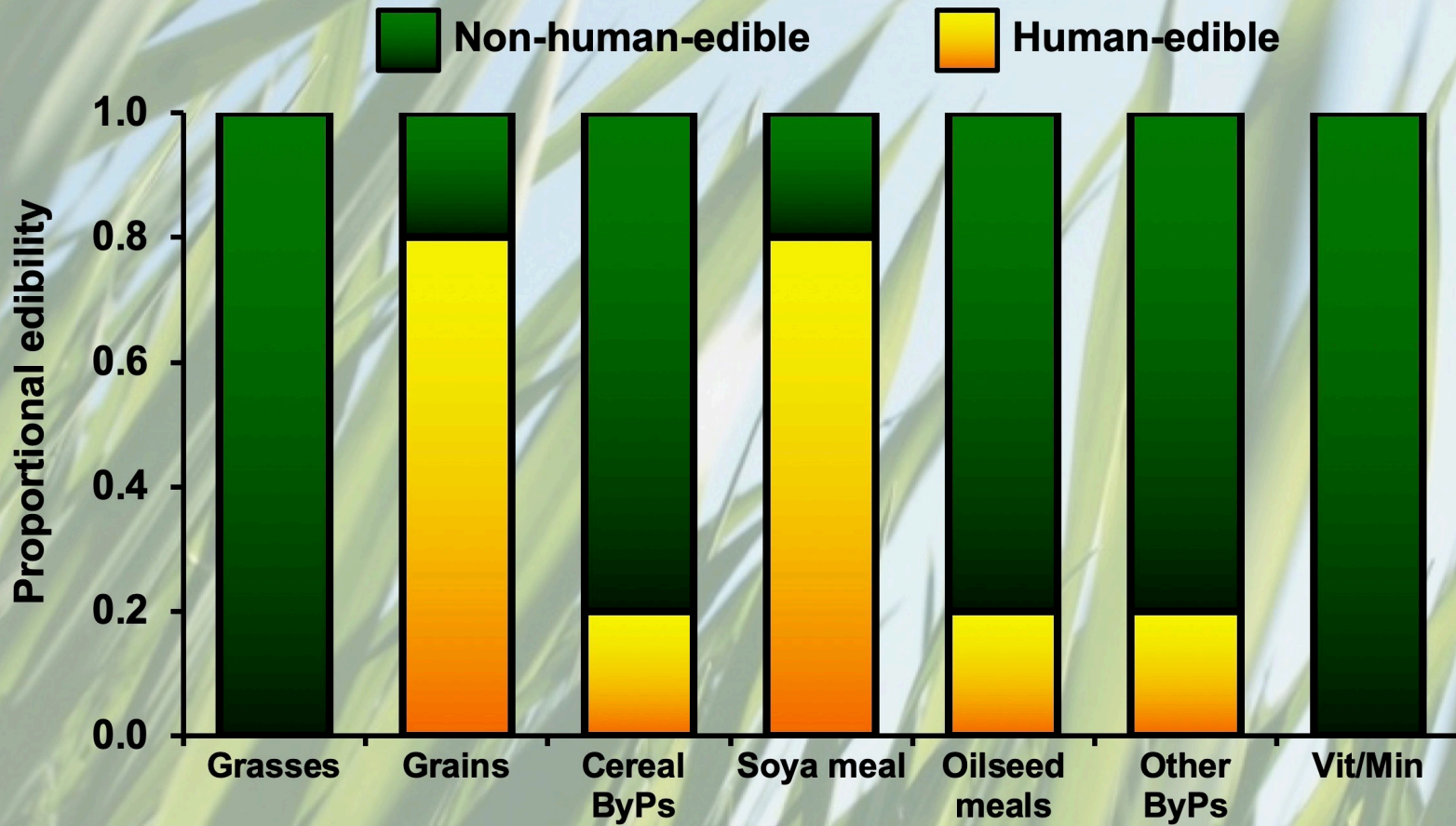


Source: Created by Dr. Jude L. Capper, 2020; data from Wilkinson (2011) Re-defining efficiency of feed use by livestock. *Animal*.



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Feed efficiency metrics must consider competition for human-edible foods

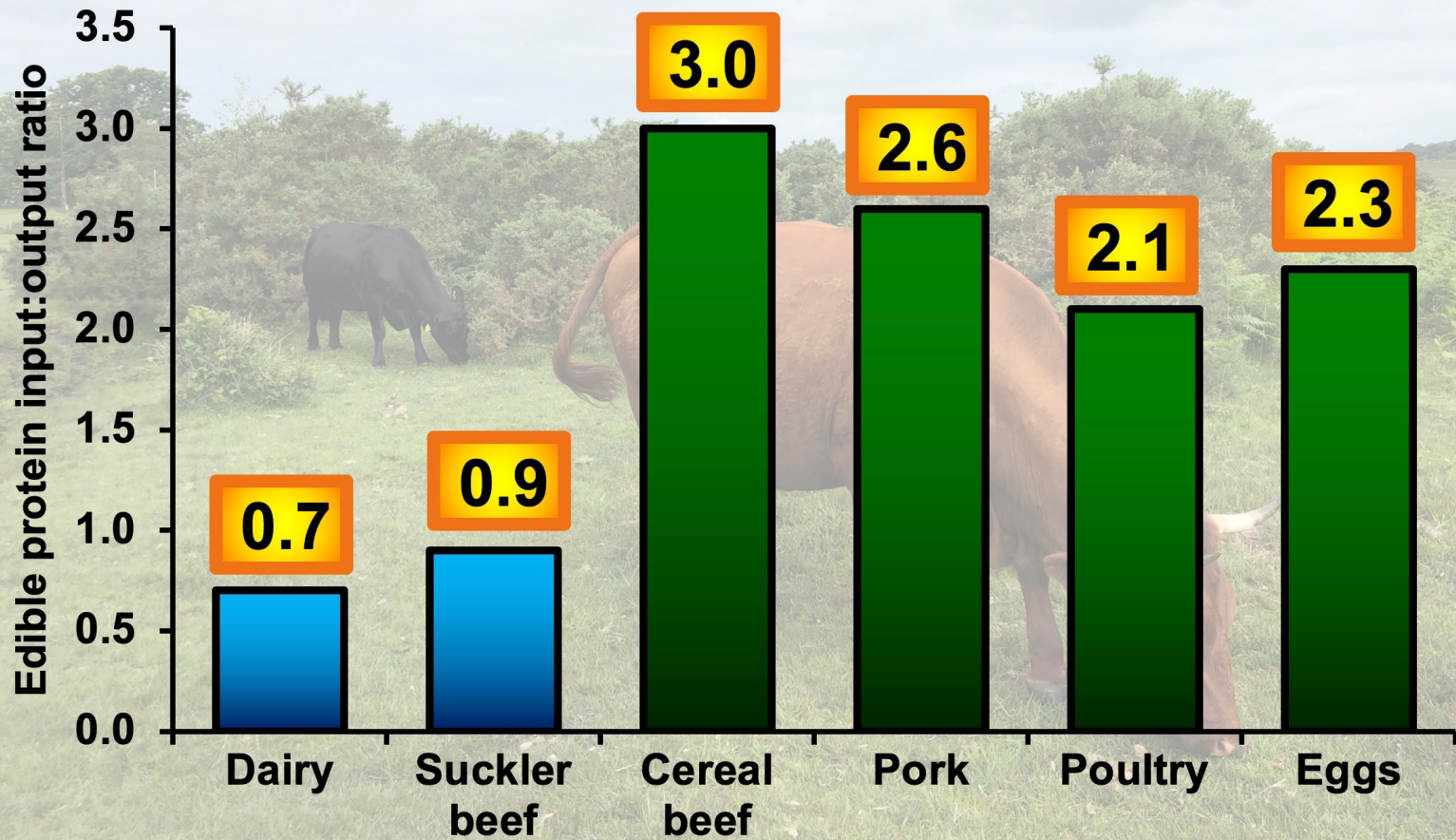


Source: Created by Dr. Jude L. Capper, 2020; data from Wilkinson (2011) Re-defining efficiency of feed use by livestock. *Animal*.



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Grazing cattle systems produce more human-edible protein than they consume



Source: Created by Dr. Jude L. Capper, 2020; data from Wilkinson (2011) Re-defining efficiency of feed use by livestock. *Animal*.



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Grazed land provides much more than food



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Source: Created by and photo by Dr. Jude L. Capper, 2020

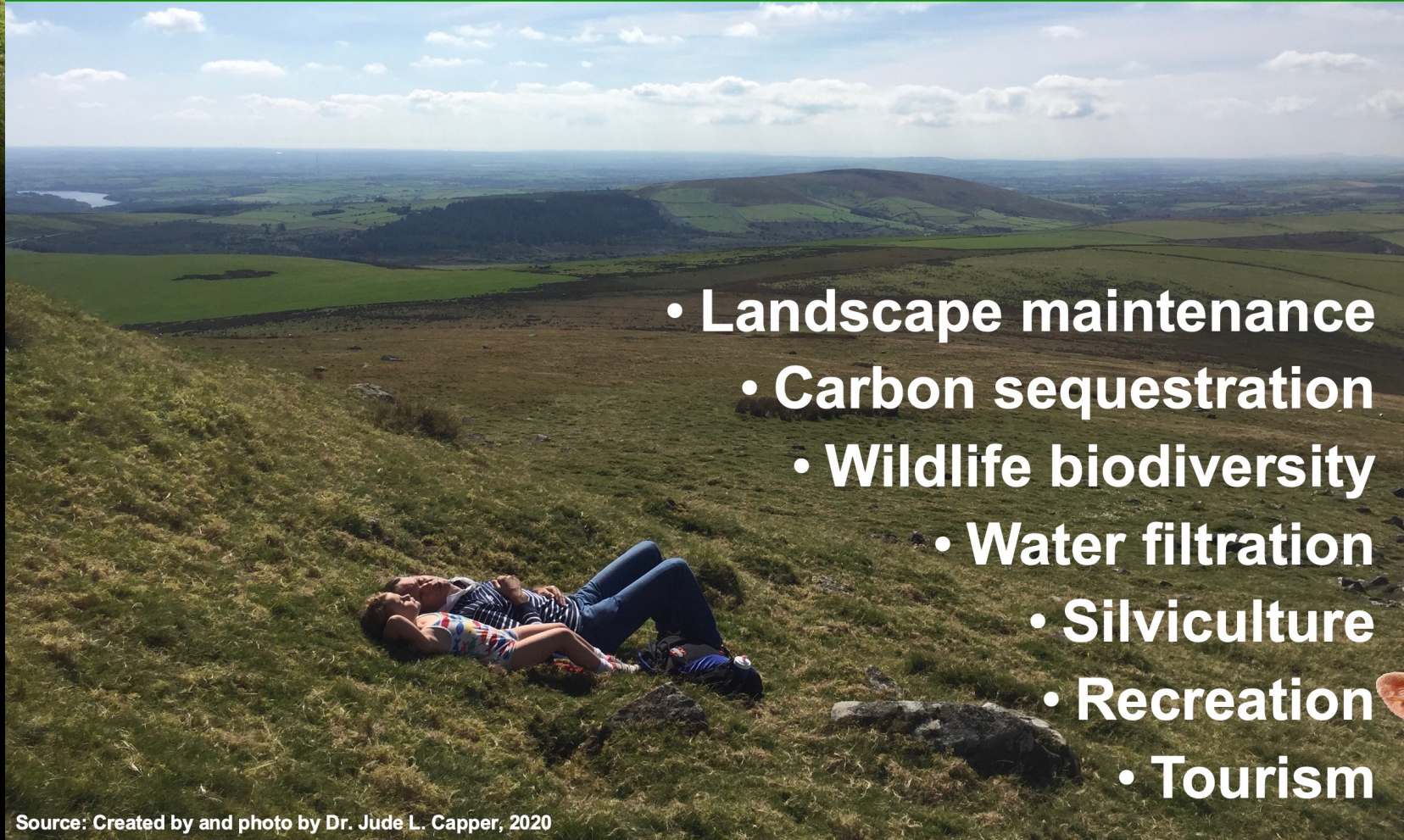


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Grazed land provides much more than food

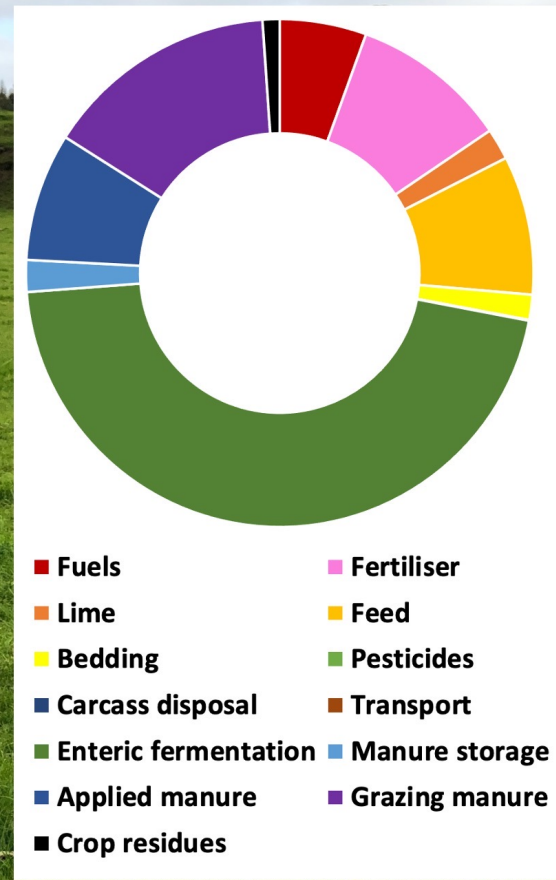
- Landscape maintenance
- Carbon sequestration
- Wildlife biodiversity
- Water filtration
- Silviculture
- Recreation
- Tourism

Source: Created by and photo by Dr. Jude L. Capper, 2020



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Standard footprinting tool urgently needed across the industry



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Source: Created by Dr. Jude L. Capper, 2021. Example carbon footprint results based on a beef finishing farm.



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You don't have to be the biggest,
you do need to do your best



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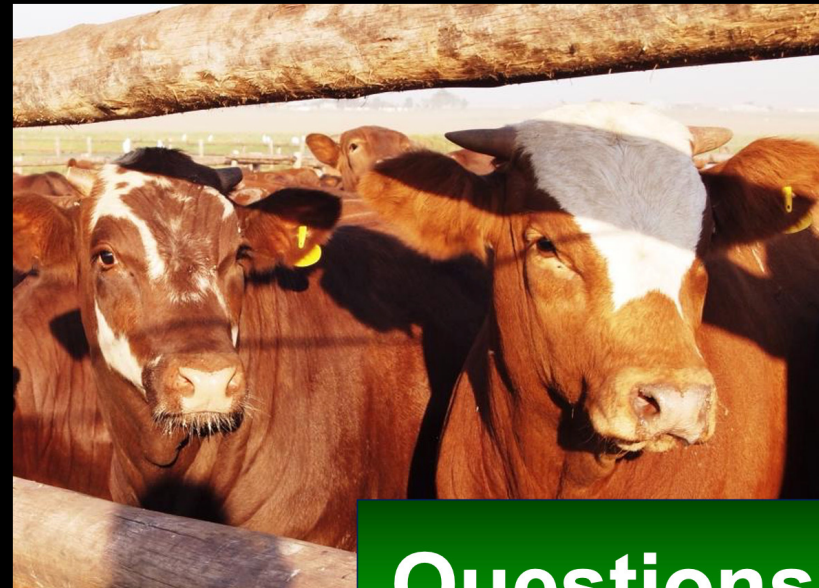
Source: Created by Dr. Jude L. Capper, 2021.

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Thank you!

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<http://bovidiva.com/presentationlinks>

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Questions?



Source: Created by Dr. Jude L. Capper, 2021. Cartoon from: <http://RubesCartoons.com>