

Energy Use in Food Systems

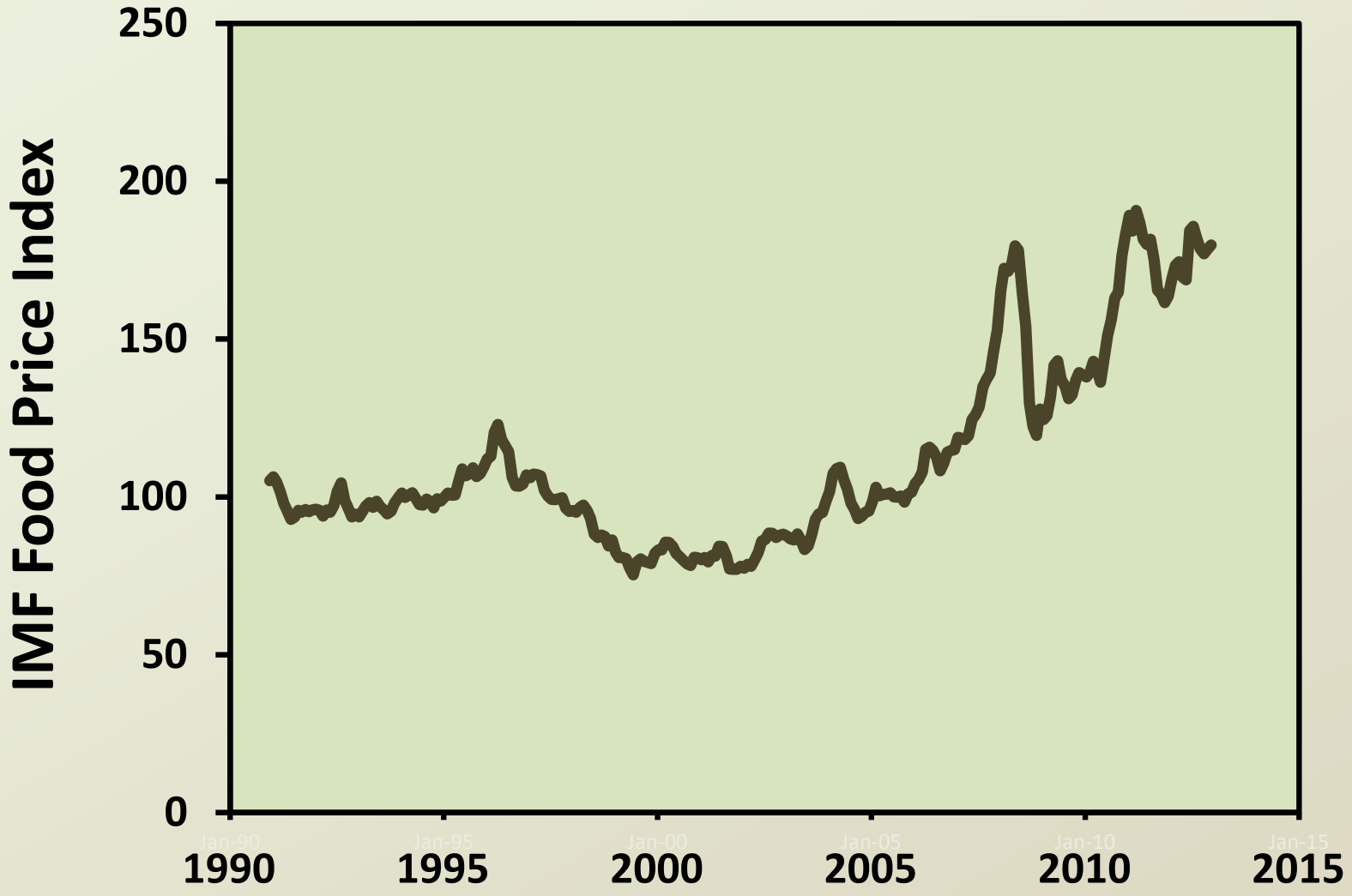
The Big Picture

Eric Garza, PhD

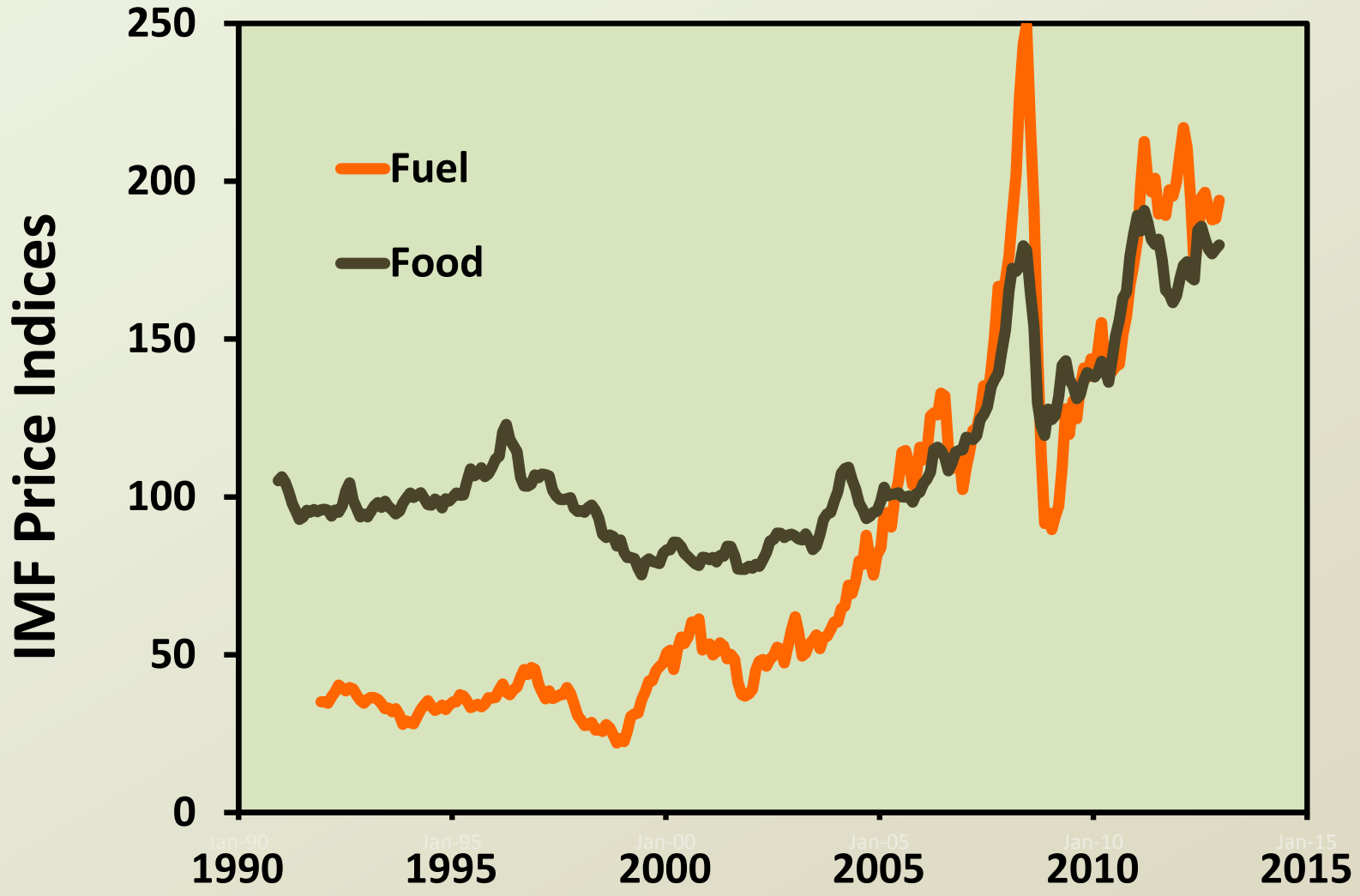
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Campus Food and Energy Seminar Series





Source: International Monetary Fund



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$$ROI = \frac{\textit{Output}}{\textit{Input}}$$

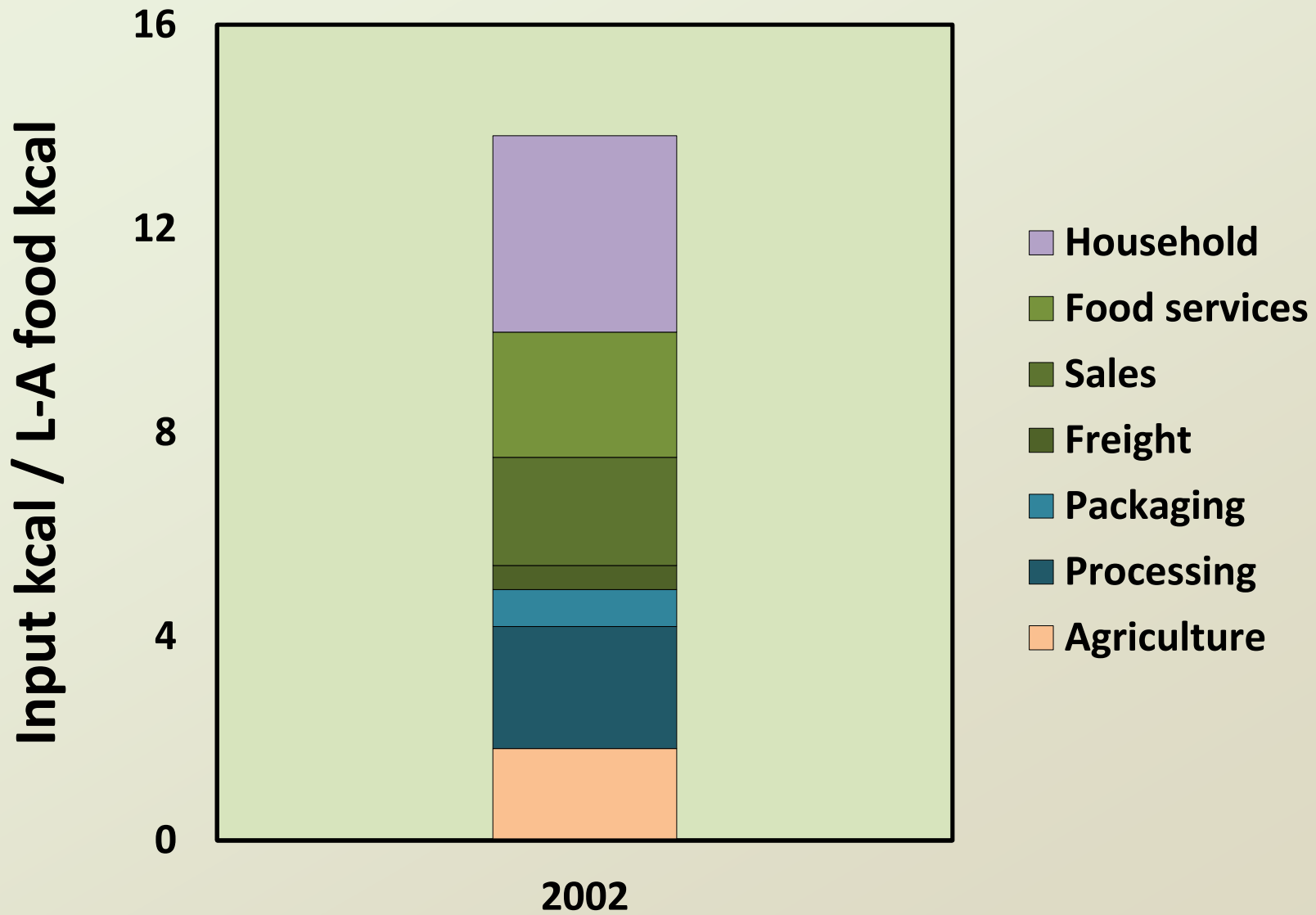
$$EROI = \frac{E_o}{E_D + E_I}$$

EROI = Energy Return on Investment

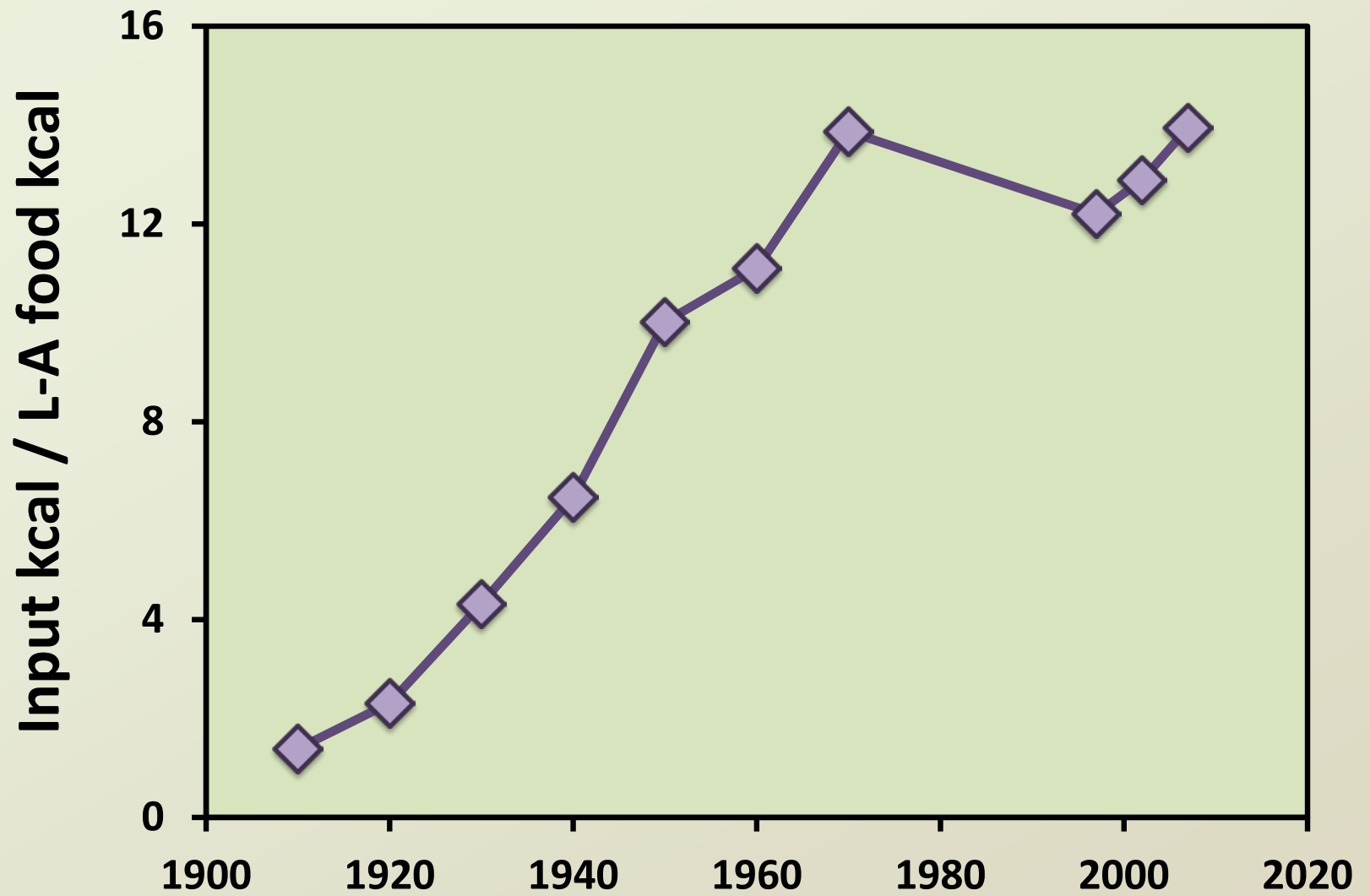
E_o = Energy output (energy value of food)

E_D = Direct energy inputs (heating value of fuels)

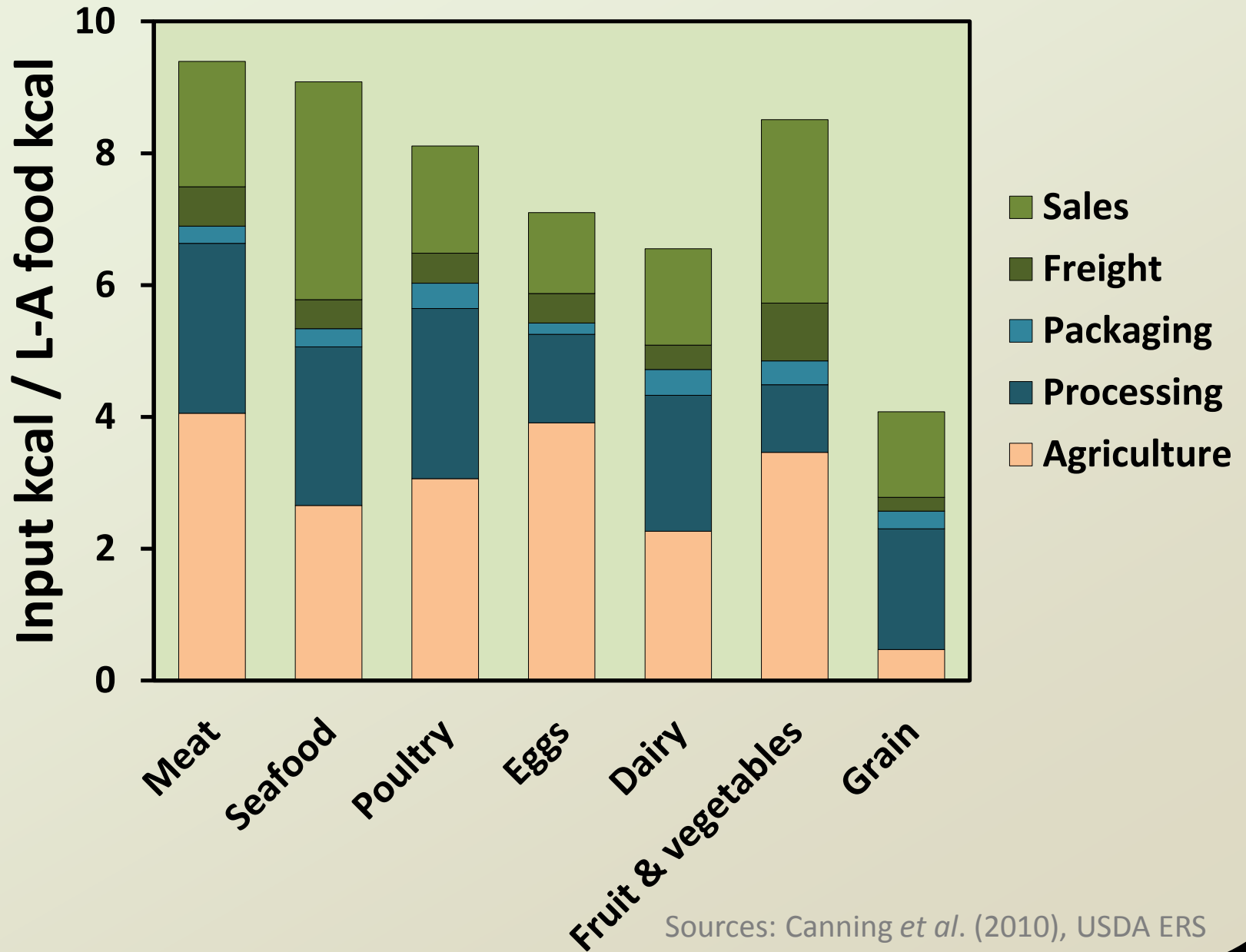
E_I = Indirect energy inputs (embodied energy)

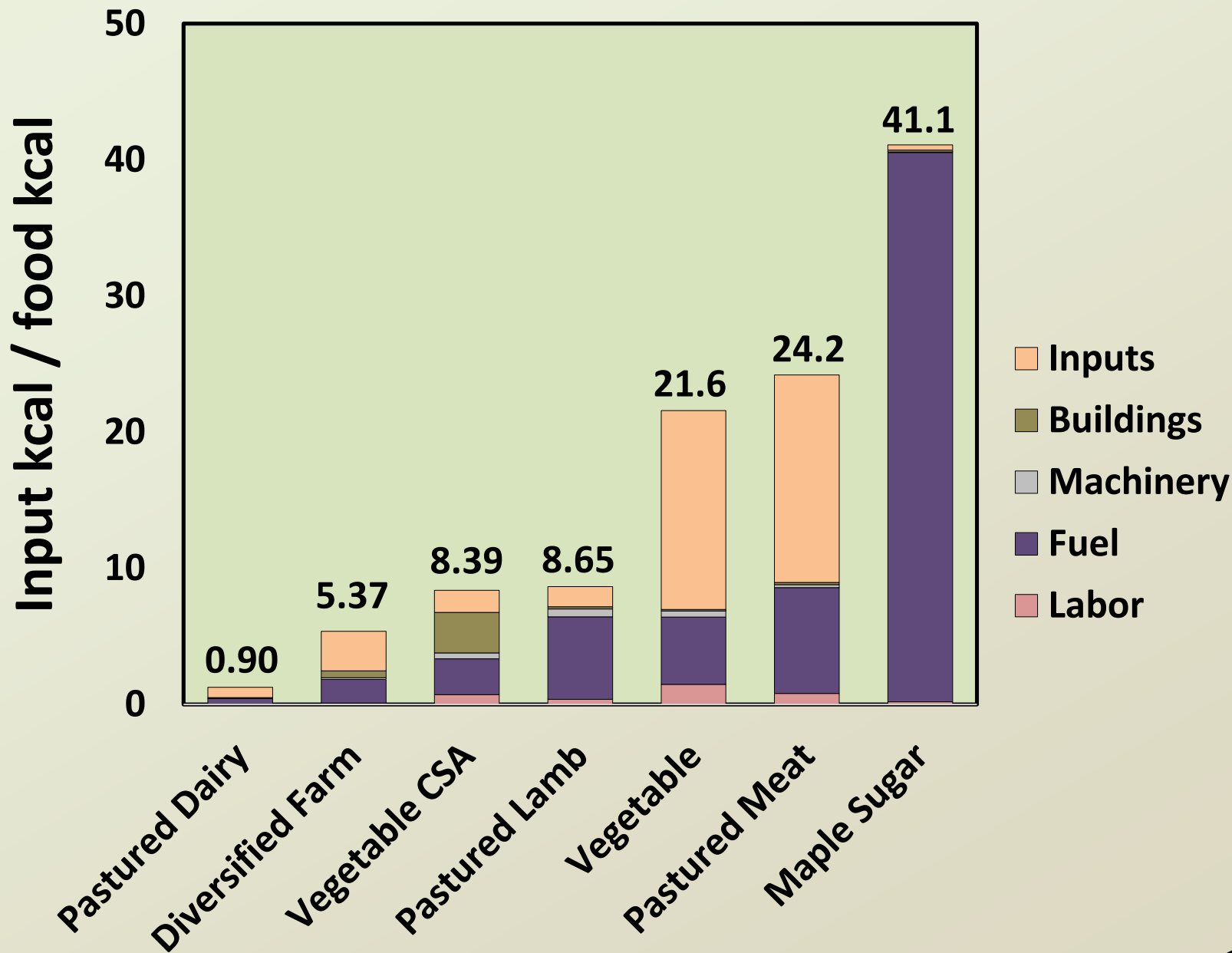


Sources: Canning *et al.* (2010), USDA ERS



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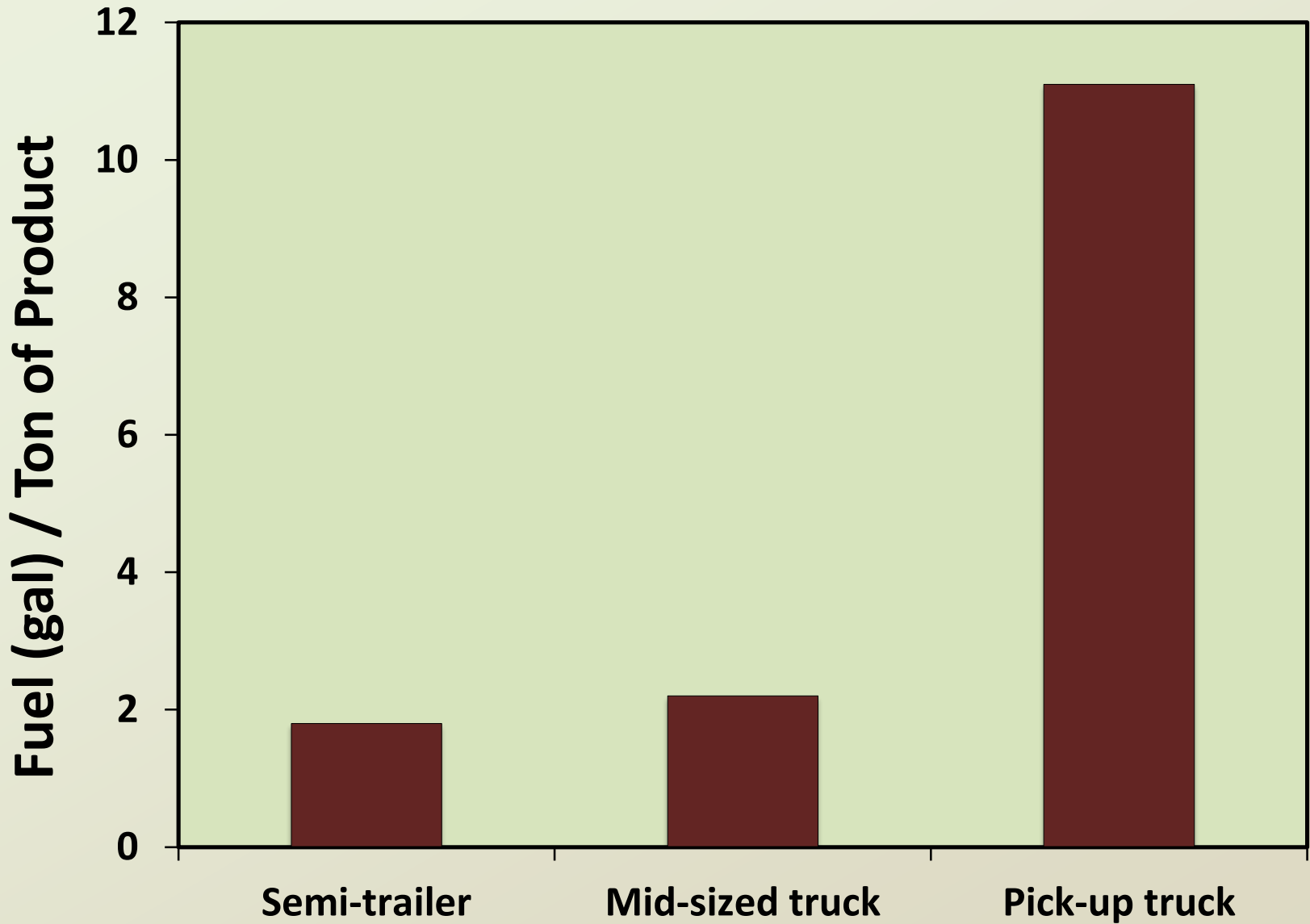




Questions?

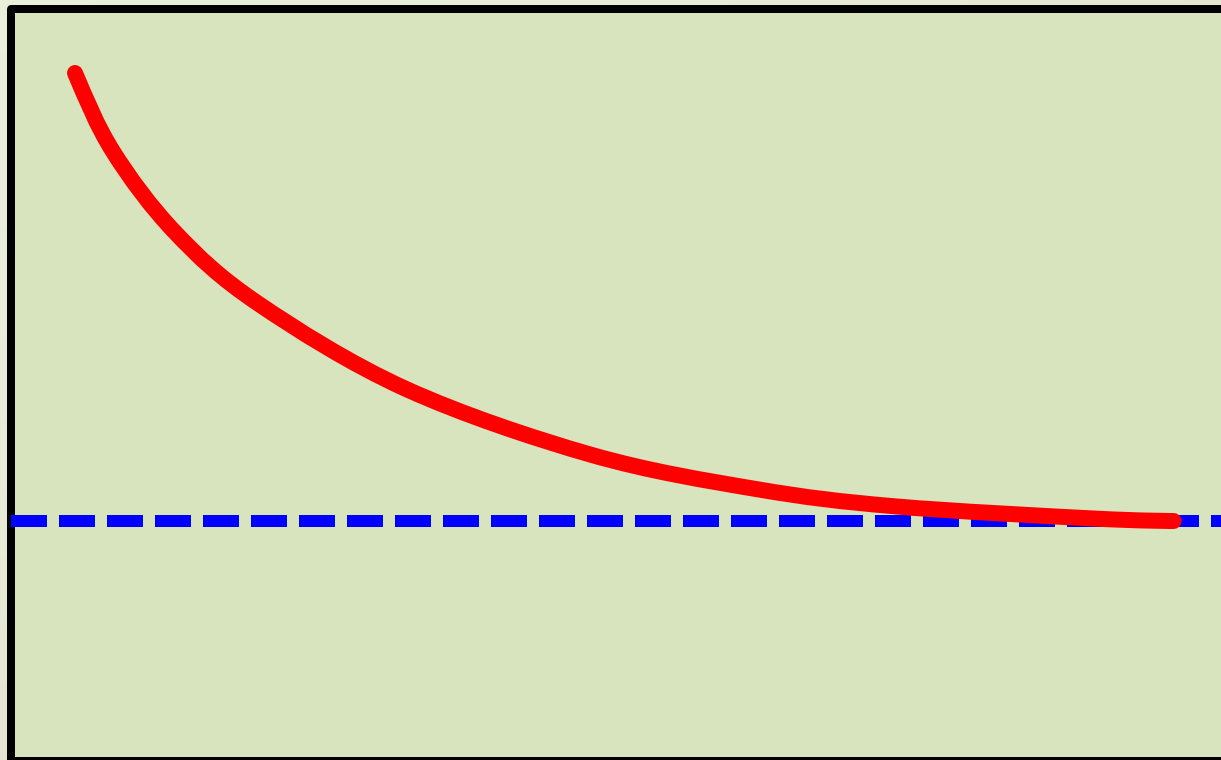


Eric.Garza@uvm.edu



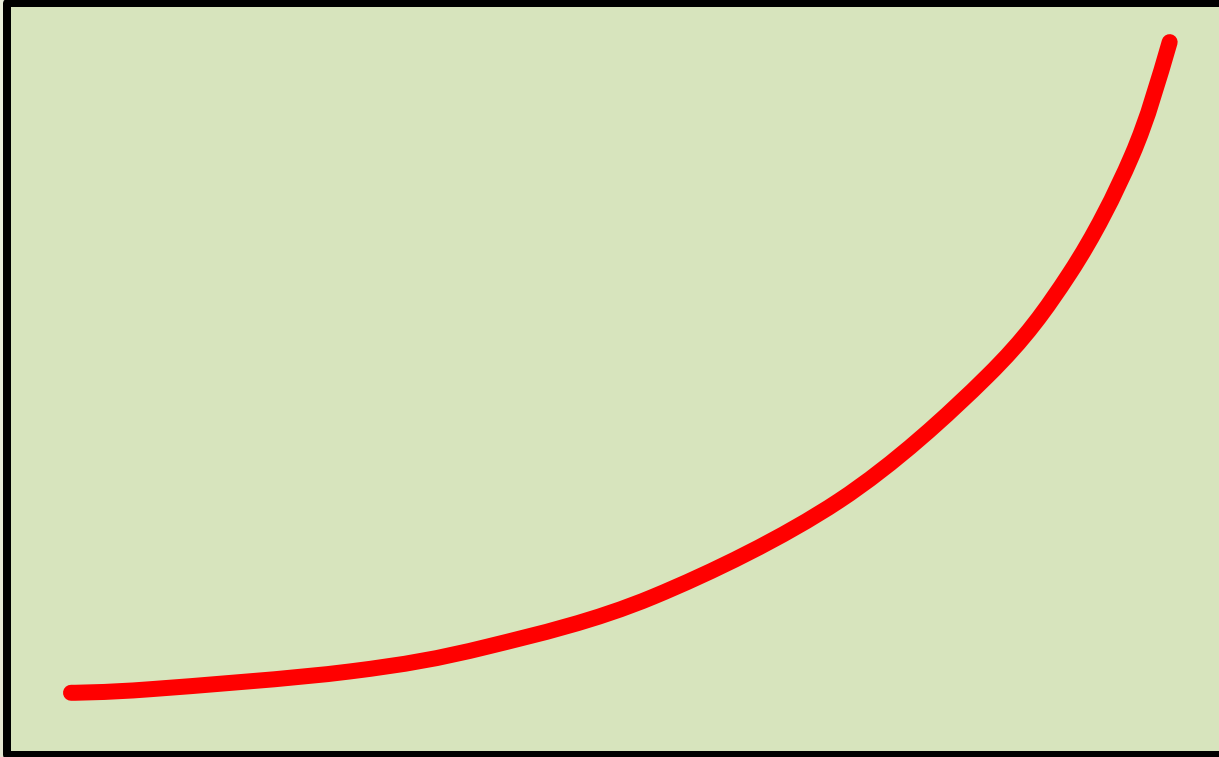
Sources: King *et al.* (2010)

EROI ↑

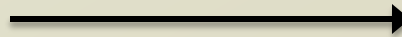


SCOPE →

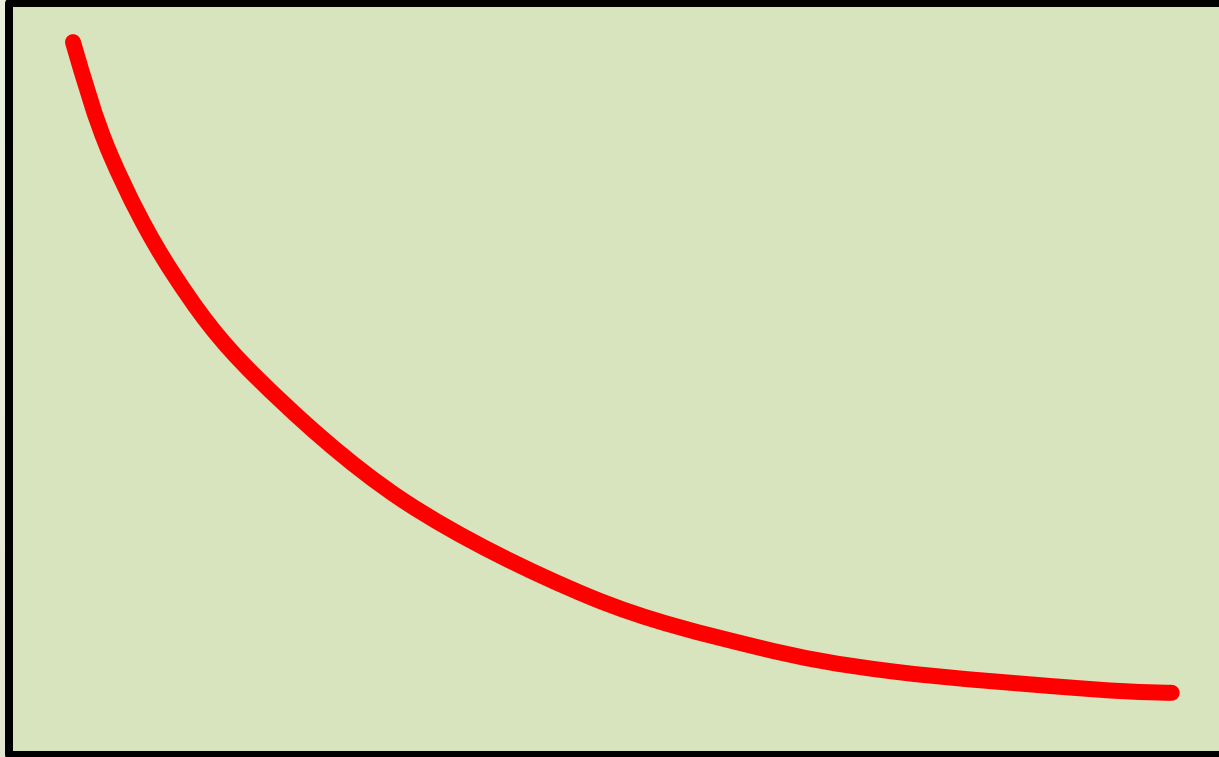
COST



SCOPE



CERTAINTY ↑



SCOPE →