Definition:

$$\frac{Sequestered\ Carbon}{Money}$$

Description

Benefit: Carbon sequestered in soils or in long life products helps to achieve global climate change mitigation targets.

Resource: Evaluation of costs is imperative for all agronomic planning and central to management decisions made by farmers. For this indicator, it is necessary to define whether investment costs are considered and what interest rates are applied.

Correlation with soil management

[125]Conservation management (including the use of organic compost, cover crops, and reduced level of tillage) was more cost-effective (Mg of carbon retained/ cost) than conventional management
[285]Analytical results provided evidence to guide agribusiness in improving their current performance toward sustainability under the BRI

Strength & weaknesses pertaining to measurement of this impact area

Sequestered Carbon: For carbon sequestration, additionally and stability over time are usually relevant. Unfortunately, stability over time is very difficult to estimate. Depending on system boundaries and context, it may be appropriate to consider only a share of the sequestered carbon if external factors (like climate change, management change) are likely to result in emissions of previously sequestered carbon at a later point in time.

Can be measured as

Sequestered Carbon:

- carbon sequestered [t C]
- carbon sequestered until 2050 [t C]

Money:

- variable costs [$]
- total costs [$]

Sample Indicators

Indicator values from		Survey	
Experiment or direct measurement		Statistical- or census data	
Expert assessment		Literature values	
Model		Maps or GIS	
Stakeholder participation		Not provided	

Table 1: Field Scale

Indicator	**Unit**	**Indicator values from**
[125]Carbon retained in potatos and aboveground residue/Production cost of potatos	Mg * $^{-1}$	
[285]Carbon Emissions Per Product (Total Carbon Emissions (CO2+diesel+recycled waste)/Total Amount of Products)	kg * $^{-1}$	,

References

ID	**Citation**	**[1]Soil type & texture**
125	Khakbazan, M., et al. (2017). "Energy Use Efficiency of Conventional versus Conservation Management Practices for Irrigated Potato Production in Southern Alberta." American Journal of Potato Research**94**(2): 105-119.	Mainly orthic brown Chernozemic soils
285	Zhao, R., et al. (2018). "Enhancing eco-efficiency of agro-products' closed-loop supply chain under the belt and road initiatives: A system dynamics approach." Sustainability (Switzerland)**10**(3).	n/a

[1]**Soil type/ texture:** If provided, what aretype and texture of the soils studied in the paper?