Definition:

$$\frac{Financial\ benefits}{Money}$$

Description

Benefit: This impact area assesses benefits via their appreciation by markets (Di Maio et al., 2017). It is sensitive to various socio-economic factors because commodity prices reflect demand and are also influenced by value systems and policies through effects of financial incentives and tax regulations.

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

[135] Micro irrigation treatment had higher benefit cost ratio than check basin irrigation
[149] including labor cost, profit ratio of smaller farms is much lower than of bigger farms
[162] Studies proved reduction of field crop yields from organic fields in comparison to conventional ones
[288] Formation of a mixed economy in the agrarian sector

Strength & weaknesses pertaining to measurement of this impact area

Financial Benefits: Financial indicators are well suited for integrating or comparing agricultural production processes with products for very different end uses. For calculating benefit-cost ratios (BCR), indicators that reflect revenue should be used. In most other cases, indicators that reflect net benefits (after deduction of charges, costs and expenses) provide a more realistic picture of benefits generated. Price volatilities make efficiency calculations valid only for a certain point in time and space.

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: No Scale

Indicator	Unit	Indicator values from
[288] Overall labor productivity (Gross output/Current costs)	$ * -	

Table 2: Field Scale

Indicator	Unit	Indicator values from
[135] Benefit cost ratio (Annual return of crops/Total costs (initial investment for irrigation system+ present worth value of annual cost))	$ * $^{-1}$	

Table 3: Farm Scale

Indicator	Unit	Indicator values from
[149] Profit ratio (Economic benefit (total income – material costs – labor input costs) [Chinese yuan]/Total costs (Material costs (costs for machinery/animal operations + seed + chemical fertilizer + manure + agricultural plastic film + farm chemicals + irrigation + fuels and energy + small farm tools + total depreciation on the fixed asset) + labor input costs) [Chinese yuan])	$ * $^{-1}$	
[149] Profit ratio (Economic benefit (total income – material costs)/Material costs)	$ * $^{-1}$	
[162] Cost effectiveness of fertilization (Additional profit earned as a result of fertilization/Expenses on fertilization)	$ * $^{-1}$	

Table 4: Regional Scale

Indicator	Unit	Indicator values from
[1] Value of yields (including subsidies)/Wage costs	$ * $^{-1}$	
[1] Added value/Wage costs	$ * $^{-1}$	

References

ID	Citation	[1]Soil type & texture
1	Adamisin, P., et al. (2015). "Natural climatic conditions as a determinant of productivity and economic efficiency of agricultural entities." Agricultural Economics-Zemedelska Ekonomika 61(6): 265-274.	n/a
135	Kumar, M., et al. (2009). "Integrating water harvesting and gravity-fed micro-irrigation system for efficient water management in terraced land for growing vegetables." Biosystems Engineering **102**(1): 106-113.	n/a
149*	Li, G., et al. (2013). "Re-examining the inverse relationship between farm size and efficiency: The empirical evidence in China." China Agricultural Economic Review **5**(4): 473-488.	n/a
162	Manolova, V., et al. (2015). "Economic efficiency of fertilization and its residual-effect during conversion period to organic field crop production." Bulgarian Journal of Agricultural Science **21**(5): 1022-1026.	n/a
288	Zotov, V. P., et al. (2014). "The main labor-forming factors and the assessment of labor efficiency in agriculture (by the example of kemerovo oblast)." Foods and Raw Materials **2**(1): 91-97.	n/a

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

*The impact area discussed on this factsheet is not a focus of the cited paper