Definition:

$$\frac{Grain/Fruit/\ Tuber\ yield}{Human\ labour}$$

Description

Benefit: This impact area refers to the weight of harvested parts of plants that possess economic value. It is suitable, where production is to be used food or feed purposes or as a non-energetic production factor in bio-refineries. Crops with high per hectare yield will show high efficiencies in this impact area.

Resource: The use of labour is closely connected with the provision of employment and therefore a reduction is not always positive. If the main benefit of a reduction in the use of labour is reducing factor costs, it is recommended to use monetary indicators instead. However, where reductions serve the purpose of reducing hard physical labour and thereby increasing human health, labour should be used as indicator.

Correlation with soil management

[182] Improving the conditions of mineral nutrition by introducing balanced doses of fertilizers for all elements contributed to a sufficiently high yield

Strength & weaknesses pertaining to measurement of this impact area

Yield: Yield values are generally easy to measure and readily available at farm level or in the form of national inventories. However, their informative value is limited where they do not account for qualitative differences between types of biomass and are not accompanied by information on site conditions such as local climate or soil fertility. Therefore, comparisons between efficiencies of different production processes with regard to yields should only be made where products and site conditions are similar. In some cases, it may be advisable to select alternative indicators where the type of benefit is more clearly defined (e.g., energetic value, financial benefit).

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: Regional Scale

Indicator	**Unit**	**Indicator values from**
[182] Yield of grain/Labor	kg * No^{-1}	
[202] Gross yield (weight of all harvested fruits)/Working hours	Mg * h^{-1}	
[202] Fresh marketable yield (gross yield minus the fruit discarded as a result of fruit rot or small size, or fruit used for processed products)/Working hours	Mg * h^{-1}	

Table 2: National Scale

Indicator	**Unit**	**Indicator values from**
[202] Gross yield (weight of all harvested fruits)/Working hours	Mg * h^{-1}	
[202] Fresh marketable yield (gross yield minus the fruit discarded as a result of fruit rot or small size, or fruit used for processed products)/Working hours	Mg * h^{-1}	

References

ID	Citation	[1]Soil type/ texture
182	Neshchadim, N. N., et al. (2018). "Bioenergetic assessment and economic efficiency of predecessors and fertilizer systems in the cultivation of winter wheat." International Journal of Engineering and Technology(UAE) **7**(4.38 Special Issue 38): 685-689.	Ordinary chernozem with low content of humus (4.5-5.5%)
202	Plénet, D., et al. (2009). "Using on-field data to develop the EFI© information system to characterise agronomic productivity and labour efficiency in peach (Prunus persica L. Batsch) orchards in France." Agricultural Systems **100**(1-3): 1-10.	n/a

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