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Sustainability of Small and Family Farms (SOILS)

Udržateľnosť malých a rodinných fariem
2016-1-SK01-KA203-022611



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Výstup O1: Metodika hodnotenia fariem

Output O1: Farm Evaluation Methodology

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Calculation of costs in plant production in Euro per 1 hectare of agricultural land (example of wheat)

Methodology

Wheat		Indicators per 1 Hectare					
Slovak Republic		Czech Republic	Lithuania	Hungary			
Seeds and Seedlings Purchased	63,78	Seeds and Seedlings Purchased	56,60	Seeds and Seedlings Purchased	78,60	Costs on Seeds and Reproductive Material	61,69
Seeds and Seedlings Produced	15,41	Seeds and Seedlings Produced	9,40	Seeds and Seedlings Produced	7,25	Cost of Artificial Fertilizer	141,14
Fertilizers Purchased	166,37	Fertilizers Purchased	185,00	Fertilizers and Lime	178,32	Cost of Organic Fertilizer	2,04
Fertilizers Produced	30,32	Fertilizers Produced	12,36	Chemical protection agents	108,79	Cost of Pesticides	72,84
Chemical protection agents	110,97	Chemical protection agents	130,36	Other Material	4,18	Wages	42,01
Other Direct Material	42,51	Other Direct Material	19,84	Wages Expenses	17,10	Social Contributions	11,49
Wages and Rewards Direct	21,27	Wages and Personal Expenses - Direct	18,52	Costs on Fixed Assets Repairs	87,76	Maintenance Costs	1,80
Social Expenses	5,90	Wages and Personal Expenses - Ancillary Activities	144,84	Depreciation of long – term Tangible Assets	159,51	Depreciation	53,28
Repairs and Services	2,80	Other Direct Costs and Services	109,56	Agricultural Services	20,25	Costs of Machine Mechanisms (Variable)	119,10
Depreciation of long – term Tangible Assets	5,91	Costs of Ancillary Activities	200,04	Fuel and Lubricants	53,09	Dehydration Costs	11,10
Agrotechnical Services	39,74	Production Overhead	122,64	Electricity, Water, Gas	5,07	Other Direct Variable Costs	3,27
Other Direct Costs and Services	62,19	Management Overhead	32,48	Rental of Land	71,68	Cost of External Machine Mechanisms Services	48,88
Costs of Ancillary Activities	180,10			Land Tax	2,77	Other Direct Costs	4,24
Production Overhead	77,17			Cost of Repair Works	64,28	General Operating Costs	13,21
Management Overhead	65,93			Use of Tangible Fixed Assets	24,65	Direct Insurance Costs	5,11
						Cost of Land Renting	84,27
						Direct Marketing Costs	4,28
						Overhead Costs	26,35
						Costs of the Main Product	127,59
Total Cost per 1 Hectare	890,37		1042,84		883,30		833,68



Cost calculation in livestock production – Dairy cows - values in Euro per 100 breeding days

Slovak Republic		Czech Republic		Lithuania		Hungary	
Feeds and Bedding Purchased	90,02	Feeds and Bedding purchased	141,24	Feeds	447,55	Feeds and Bedding purchased	166,10
Feeds and Bedding Produced	211,37	Feeds and Bedding produced	168,88			Feeds and Bedding produced	110,33
Medicines and Disinfectants	15,98	Medicines and Disinfectants	14,52	Medicines and Disinfectants	24,97		
Other Direct Material	28,42	Other Direct Material	20,64	Other Material	20,96		
Wages and Rewards Direct	71,11	Wages and Personal Expenses - Direct	92,36	Wages	74,08	Wages	67,23
Social Expenses	23,91					Social Contributions	16,93
		Wages and Personal Expenses - Indirect	54,24				
Repairs and Services	12,07			Preparation Costs of Fixed Assets	9,56	Maintenance Costs	2,37
Depreciation of long – term Tangible Ass	35,36	Depreciation of long – term Tangible/Intangible Assets	29,44	Depreciation of Long – term Assets	192,93	Depreciation of Long – term Assets	27,79
Depreciation of Livestock	63,19	Depreciation of Livestock	65,52			Depretiation of Stocks (Livestock)	47,69
Breeding and Veterinary Services	20,53	Other Direct Costs and Services	72,44	Agricultural Services	9,79	Costs on Animal Health	13,31
				Other Direct Costs	9,40	Costs of Natural and Artificial Fertilization	6,84
				Insurance	10,75	Cost of Performance Analysis	3,16
Other Direct Costs and Services	32,87			Fuel and Lubricants	8,35	Other Direct Variable Costs	46,09
				Electricity, Water, Gas	24,50	Expenditures on External Engineering Servi	0,42
Costs of Ancillary Activities	65,6	Costs of Ancillary Activities	34,24	Use of Tangible Fixed Assets	28,03	Machinery Costs (Variable)	28,59
				Repairs Costs	20,87	General Operating Costs	19,60
				Other Overhead Costs	1,56	Other Costs	2,85
Production Overhead	57,75	Production Overhead	34,04			Direct Insurance Costs	1,56
Management Overhead	54,6	Management Overhead	60,68			Direct Marketing Costs	0,62
						Overhead Costs	45,76
Total Cost per 100 Breeding Day	782,78		788,24		883,30		607,24



Own costs - description and explanation of cost comparison between individual countries

The calculation of own costs determines the own costs per unit of production. Own costs of inventories generated by own activities include direct costs incurred in the production or other activity, alternatively part of the indirect costs linked to the production or other activity. Based on the characteristics of own costs of inventories created by own activity they include, in addition to direct costs, also the share of production overheads, resp. share of administrative overhead. The direct costs spent on the calculated output as well as the share of production overhead are considered to be directly related to the corresponding output, which are referred to as output costs or, in a narrower sense, as production costs. The costs of administrative overhead incurred in the economic activity process are considered to be costs not identifiable with the relevant output, which are referred to as the costs of the period and, in the narrow sense, as non-productive cost. For the purposes of this methodology outputs are considered as products, works and services, or their groups, intended to be sold or to be transferred within the enterprise (in-house services). The objective of O1 was to establish methodology for solving analyses of the position of small and family farms in selected EU regions through the use of methods of analysis, synthesis, deduction, induction and economic-statistical methods. This objective was fulfilled as the individual in-house cost items were analysed in detail. It was necessary to study specifying of individual calculating items, as many items under the same name included something else that had to be regulated (a description of the individual calculating items is given in the second part of this document). Specifically, we solved the comparison of calculations on selected commodities. When solving the given output, we started from two problems. First of all, it was necessary to select sample tracking commodities so that we could observe on specific numbers what was included in each calculation item. The second was to deal with different accounting and using other accounting calculating items (many had different names in different countries). Tables of calculations comparison are presented on selected commodities in crop production on wheat commodity and in animal production on commodity dairy cows. The reason for choosing these commodities, respectively of these animals, is the fact that these sectors are among the most numerous in all observed countries (Slovakia, Czech Republic, Hungary and Latvia). As the tables show, each country has a slightly different calculation, but on the other hand the sum of all its own costs is the same and therefore it is possible to claim according to the analysis that all direct and indirect cost items are included in their own costs and can be compared in summary terms.

Description and content of calculating items in crop and livestock production per 1 ha of harvest area, 100 resp. 1000 feed days) is as follows:

Consumption of purchased seeds, seedlings, feed, litter

The consumption of purchased seeds and seedlings for individual crops of crop production and purchased feeds and litters in individual livestock production is reported here. Into the used purchased seeds and seedlings in the crop production are also included seeds used last year for the crop production of the current year.



Usage of produced seed, seedlings, feed, litter

The usage of produced own seeds and seedlings in plant production and produced own feed and litter in livestock production is reported here. It is the usage of own products. In livestock production, the price of pasture on pastures and meadows, if used for grazing bovine animals and sheep, shall be included in the usage of produced own feed.

Usage of purchased fertilizers

The usage of purchased manufactured, respectively organic fertilizers in plant production is listed here. Similarly to the consumption of purchased seeds, the usage of purchased fertilizers last year is also included for the crop production of the current year.

Usage of produced fertilizers

In crop production the usage of organic fertilizers of own production for the crop production of the current year is reported, divided into individual crops according to recalculated areas. Direct usage of produced manure, compost and other organic fertilizers for arable crops and for meadows and pasture fertilization up to 30 June of the current year shall be included in the calculation section "Fertilization for the current year harvest", usage of these fertilisers from 30 June to 31 December of the current year is included in the calculation section "Fertilizer for next year harvest". The costs of transportation, spreading and incorporating livestock manure and compost into the soil are included in the costs of each directly fertilized crop. The usage of organic fertilizers in vegetable, fruit and hop growing as well as in land reclamation is included in the costs of these activities without recalculation.

Usage of other purchased material

Usage of other purchased material in crop and livestock production is reported here. In crop production these are mainly chemical protective equipment and other supplementary materials, or usage of fuels for drying products (hops, tobacco, etc.), for heating greenhouses, usage of bags and packaging for preparing products for dispatch and usage of small tangible assets accounted in inventories. In livestock production this includes the consumption of pharmaceuticals, disinfectant material, cleaning and small maintenance material for the maintenance of single-purpose buildings and structures for livestock production, and the consumption of small tangible assets accounted in inventories. Where the holding has hatching of poultry, the usage of purchased hatching eggs shall also be reported.



Consumption of other products

The possible usage of other own products in crop or livestock production not mentioned in the previous columns is reported here. In livestock production, the usage of own eggs for hatching is given here if the holding has hatching of poultry as well as the non-culpable death of the animals.

Wages and bonuses from employment

It refers the wage costs, income of partners and cooperative members from dependent activity, which are directly related to work on crops and animal production. These are generally the salaries of operating employees for time worked or for certain work completed, or other workers, if their wage is related to production and can be determined directly for crops and animal production. It also includes related salary components of workers who are not in service with the company. These are mostly remuneration on the basis of agreements to perform work. In plant production - this includes the wages of employees for both manual and machine work, e.g. wages of workers, tractor drivers, harvesters, drivers of motor vehicles, etc. The additional wages of these employees are included in crop production overheads. In livestock production - this includes wages, including the additional wages of animal keepers and other livestock production workers. This item also includes the wages of tractor drivers, drivers of motor vehicles and other employees realizing transportation of animal feed and litter to the stabling place. The additional wages of these workers fall under the livestock production overhead.

Wages and remuneration charged from other centres

This includes direct wages charged by other centres in cases where workers of another centre have carried out labour for crop or livestock production. These are billed internal labour costs, determined from the auxiliary or internal registers.

Social costs

This includes the costs of statutory social and health insurance and unemployment insurance, or other social insurance, related to the wage costs and income from dependent activities of partners or cooperative members insofar as they relate directly to the calculation section, i.e. for crops or animal breeding.

Repair and maintenance external

External repair costs that are directly related to individual crops or animal breeding are reported here. These are the costs of repairing and maintaining such tangible fixed assets whose depreciation is included in direct costs, i.e. single-purpose machines, equipment and buildings, and group machines and equipment.



Repair and maintenance own

It includes the costs of repair and maintenance carried out in-house (internal work of repair and maintenance centres) that are directly related to individual crops or breeding. Similarly, to external repairs, it is a repair of single-purpose machines, equipment and buildings and group machines and equipment. They are obtained from the auxiliary or in-house registers.

Depreciation of tangible and intangible fixed assets (excluding animals)

This includes depreciation of tangible and intangible fixed assets, except for animals that can be determined directly for crops, crop groups or animal breeding.

In crop production this includes:

- (a) Depreciation of single-purpose machinery, equipment and buildings.
- (b) Depreciation of group machinery and equipment that is included in the direct costs of individual crops as determined by the sown area. This item included in direct crop production costs does not include depreciation of multipurpose machinery, equipment and buildings that are included in crop production overheads.
- (c) Depreciation of amelioration and rigging plods is included in the calculation area "Soil reclamation".

In livestock production this includes: depreciation of stalls, depreciation of livestock machinery and equipment used in animal breeding.

Depreciation of animals

Depreciation of basic herd animals (cows, sows, sheep or other breeding) is determined. For the depreciation of basic herd animals under the Accounting Procedures, depreciation may be expressed as the proportion of the purchase price of the animals reduced by the estimated revenue of cracking (the numerator) and the expected number of years in the breeding of the basic herd (denominator). In such a depreciation procedure, animals are not depreciated up to the cost of acquisition, but their residual value at disposal will be approximately equal to the achieved sales of cracking (from realization).



Other direct costs

This includes other direct costs, as far as they can be effectively quantified directly per crop or animal breeding, by focusing on their importance in the cost structure.

In crop production, this includes the usage of electricity and other energy in specialized sections, the usage of other non-storable supplies, e.g. irrigation waters, where this can be determined directly for crops, field work, agrochemical services carried out by external contractors, and other crop-related services, e.g. external costs of transport of temporary workers, rental and rent for special-purpose machinery and equipment, land tax and tax of buildings used in specialized production, other operating costs including the share of costs incurred for soil reclamation for the current year, insurance against damage to crops, interest, if it can be determined directly e.g. specialized crop and other direct costs.

In livestock production, this includes the usage of electricity and other energy in stalls and hatcheries, the usage of other non-storable supplies, e.g. water for animals and technological use, breeding and veterinary services costs, rodent control and disinfection costs, other breeding services, e.g. rent for stalls and other single-purpose machines and equipment, property tax, i.e. from stalls and other buildings used in individual breeding, other operating costs, reserve for the loss of hen cracking, insurance against damage in animal production, eventually interest, as it relates directly to a particular holding, creation of reserves for repairs of special-purpose assets, e.g. for repairs of stalls and others.

Share of costs of ancillary services

This includes internal costs, i.e. the proportion of costs attributable to the work done for crop and livestock production by ancillary services. The costs of ancillary services are allocated to individual crops and breeding by the number of hours actually worked, valued at own cost. If the costs of ancillary activities are during the year allocated at in-house prices, they shall be adjusted at the end of the year to the actual cost of ancillary services in the resulting calculation of own costs.

In crop production it is the work of tractors, harvesters, other self-propelled machinery, freight transport, eventually heavy mechanisms for agricultural cultivation, harvesting and transport operations, irrigation costs included in the crop's own costs in an aliquot amount.

In livestock production it is the work of freight transport, tractors, eventually trailers for the transportation of animal feed and litter, livestock manure removal and other works carried out by in-house centers for a particular animal breeding, which shall be included in aliquot amount in the own costs of the individual breeding. They are obtained from the auxiliary or in-house registers.



Reduction of costs by accounted revenues

Revenue items that reduce the incurred direct costs are listed here. These are accounted (used) statutory reserves for repairs of stalls and other special-purpose buildings, machinery and equipment, accounted accumulated depreciation of the provision for acquired assets, which indirectly reduce the amount of depreciation from such acquired assets. In crop production the crops damage caused by natural disasters, which has been recorded as a reduction in work-in-progress, are also reported here. It is necessary to reduce by these amounts the costs incurred in respect of crops damaged by a natural disaster, irrespective of whether or not compensation has been granted. The amount of the damage shall be converted into non-calculable costs.

Total direct costs

They are the sum of direct costs of crops and animal breeding and agricultural production.

Share of production overhead

It represents the proportion of indirect costs related to the management and service of crop and livestock production. These are actually incurred overheads related to crop and livestock production, which could not be possible or could not be economically established (traced) directly for individual crops and breeding. The amount of production overhead is determined from analytical records for individual cost accounts or from internal records. Production overhead costs are allocated to individual crops and breeding through cost allocation units. The cost allocation base is the actual direct costs of individual crops and breeding. The crop production overhead shall be allocated in full amount to the cost of the crop production with the yield of the current year, i.e. the share of plant production of next year is not specified.

Share of administrative overhead

It shows the share of indirect costs related to the management and administration of the company. The proportion of administrative overheads per crop and breeding shall be determined by cost allocation units. The amount of administrative overhead is obtained from the analytical records for individual cost accounts or from the internal records. The cost allocation base is the actual direct costs of individual crops and breeding. Just like production overheads, administrative overheads are allocated to crop production costs with the yield of the current year, i.e. the share of plant production of next year is not specified.

Total own costs: They are the sum of direct and indirect costs together.