



# What is the cost of producing milk?

## **Milk production costs in eight European countries, EU average costs and organic milk production costs in Germany**

*Belgium – Denmark – France – Germany – Ireland – Lithuania – Luxembourg – Netherlands*

### **Results 2019**

Calculations based on the EU Farm Accountancy Data Network (FADN)

Third edition





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*Country codes and symbols used in this publication: BE (Belgium), DK (Denmark), FR (France), DE (Germany), IE (Ireland), LT (Lithuania), LU (Luxembourg), NL (Netherlands), EU (European Union), Ø (average).*

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# Introduction

In spring 2020, the **European Green Deal** set forth a programme for ambitious agricultural reform in the form of the **Farm to Fork Strategy**. This strategy calls on farms to play a bigger role and to ensure quicker implementation of the changes needed to achieve climate-neutral, environment and resource-friendly agricultural production and livestock farming. Dairy farmers are also being presented with the challenge of implementing **new measures on their farms** – to improve animal welfare, promote biodiversity and to better protect water resources and the environment. However, dairy farmers can only play their part in effective implementation of the demands regarding climate, environmental and nature protection if their work generates a stable revenue and a decent income, allowing them to further develop their farms and make them future-proof.

For eight years now, the dairy farmer organisations in the European Milk Board (EMB) have commissioned the BAL – *Büro für Agrarsoziologie und Landwirtschaft* (Bureau for Rural Sociology and Agriculture) of the *Die Landforscher* network to carry out a regular **study of milk production costs**. These calculations for the most important milk producing countries in the EU are **based on official representative data**. The scope of the calculations has now been extended: in addition to figures for Belgium, Denmark, France, Germany, Luxembourg and the Netherlands, this third edition also looks at milk production costs in Ireland and Lithuania as well as average milk production costs in the EU from 2015 to 2019, based on data for 26 EU Member States. The study on milk production costs in Lithuania was commissioned by the Ministry of Agriculture of the Republic of Lithuania and follows the same method. Another new feature is a data sheet with the findings for organic milk production costs in Germany. Instead of FADN data, which is used to determine the cost of

production for the average of dairy farms in Germany, the results for organic milk are based on national data from the German Federal Ministry of Agriculture.

Accurate information about cost evolution is one of the most important benchmarks for dairy farms to evaluate their current and past economic situation and to assess their respective possibilities and limits for economic adjustments. Only with a comprehensive overview of the cost situation and the potential earnings from the milk price does it become possible to gain insight into the economic situation of dairy farms.

As far as dairy farmers are concerned, adapting their farms to meet ever-stricter environmental standards and the future effects of climate change implies higher costs and the need for more and **more investment**. The **effects of climate change** in the form of extreme weather events and drought have already become a disruptive factor of economic relevance on dairy farms. This is one of the very clear findings from the updated calculation of milk production costs for this edition of the brochure.

The European Commission, political decision-makers, economic partners and the public at large must urgently take these aspects into account as well. **A successful, timely implementation of more sustainable dairy farming will only be possible if dairy farmers are in a real, long-term economic position to play their part**. This study aims to create greater transparency in this regard.

Since 2013, the findings about milk production costs in different European countries have been regularly published in the “What is the cost of producing milk?” reports by the BAL. They provide detailed figures and conclusive evidence about the situation and evolution of costs on dairy farms in the EU.

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The findings for **organic milk production costs in Germany** are presented in the corresponding **data sheet on pages 22-23** of this brochure.

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The reported costs are all net values without VAT and refer to a milk equivalent with 33g protein and 40g fat.

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All study reports and publications on milk production costs in different European countries are available on the EMB website under:

<https://www.europeanmilkboard.org/milk-production-costs.html>

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# Milk production costs in eight European countries and EU average costs

## Milk production costs 2019

The cost calculations presented in this report show the **minimum price** dairy farmers in different EU countries must be paid to be able to **cover their cost of production** and generate a **decent income** for themselves and their family members working on the farms. To this aim, the cost calculation not only looks at the cost of farming inputs and general operating costs, but it also considers the labour costs of an independent family farm according to a fair standard. **CAP payments** from the EU relevant to milk production are considered as income and are **deducted from costs**.

The latest study on milk production costs 2012-2019 looks at Germany, France, the Netherlands, Ireland, Denmark and Belgium, which are among the ten largest milk producing EU Member States. Milk production costs are also reported for Lithuania and Luxembourg. In 2019, these eight countries produced a combined total of 94 million tonnes of milk, representing 54% and 60% of EU-28 and EU-27 milk production respectively (Eurostat 2020). Furthermore, the average milk production costs between 2015 and 2019 for all dairy farms in the EU (for

26 Member States, with the United Kingdom, excluding Greece and Cyprus) are also presented. As an additional source of information, you also have a data sheet about organic milk production costs in Germany on pages 22-23 of this brochure.

In 2019, **milk production costs** in the countries included in the study were between 34.21 (Ireland) and 58.63 (Lithuania) c/kg, which indicates a variation between 1 and 1.7 times. **Average milk production costs in the EU** amounted to 45.35 c/kg.

The comparatively onerous milk production costs observed in France (52.54 c/kg) and Lithuania (58.63 c/kg) are the product of a different farming structure with many small farms or dairy farms in mountainous areas, while the low production costs in Ireland (34.21 c/kg) can be traced back to the unique local production system.

In the eight EU Member States included in the study, the **farm-gate milk price** was below the EU average of 34.52 c/kg. Compared to milk production costs, the variation in milk price was only 1.2 times (28.79 c/kg in Lithuania to 34.11 c/kg in Denmark). This **wide gap between costs and prices** means a shortfall of up to 51%. On an average, the shortfall on EU farms was 24%.

Table 1: Milk production costs, farm-gate milk price and cost shortfall in 2019\* (in c/kg)

Country	BE	DE	DK	FR	IE	LT	LU	NL	ø EU***
<b>Production costs (excl. net investments)</b>	46.78	47.44	41.44	52.54	34.21	58.63	42.33	44.54	45.35
<b>Milk price**</b>	33.05	33.70	34.11	33.33	31.26	28.79	33.13	32.75	34.52
<b>Shortfall in c/kg</b>	<b>-13.73</b>	<b>-13.74</b>	<b>-7.33</b>	<b>-19.21</b>	<b>-2.95</b>	<b>-29.84</b>	<b>-9.20</b>	<b>-11.79</b>	<b>-10.83</b>
<b>Shortfall in %</b>	<b>-29%</b>	<b>-29%</b>	<b>-18%</b>	<b>-37%</b>	<b>-9%</b>	<b>-51%</b>	<b>-22%</b>	<b>-26%</b>	<b>-24%</b>

\* All results of 2019: trend calculations by BAL based on FADN 2018 and Eurostat.

\*\* The stated farm-gate milk prices refer to natural fat and protein contents (according to data from the MMO) or to 4% fat and 3.4% protein (according to national statistics). Detailed sources are cited in the country-specific data sheets (see pp. 14 – 33).

\*\*\* The results for the EU average refer to 26 EU Member States, excluding Greece and Cyprus, with the United Kingdom.

Table 2: Composition of milk production costs 2019\* (in c/kg)

Country	BE	DE	DK	FR	IE	LT	LU	NL	ø EU****
<b>Input costs**</b>	19.37	21.87	19.83	21.53	16.43	17.09	19.78	17.27	21.29
<b>General operating costs***</b>	15.89	21.72	24.42	23.85	15.69	25.43	23.88	21.42	20.48
<b>Production value of beef (deducted)</b>	-3.89	-5.38	-4.00	-6.51	-7.31	-6.56	-5.95	-1.81	-5.35
<b>Paid costs (after deduction of production value of beef)</b>	<b>31.37</b>	<b>38.21</b>	<b>40.25</b>	<b>38.87</b>	<b>24.81</b>	<b>35.96</b>	<b>37.71</b>	<b>36.88</b>	<b>36.42</b>
<b>Income variable (labour costs)</b>	17.46	12.14	3.61	17.56	12.07	38.64	11.97	9.24	12.39
<b>Total milk production costs</b>	48.83	50.35	43.86	56.43	36.88	74.60	49.68	46.12	48.81
<b>CAP payments (deducted)</b>	-2.05	-2.91	-2.42	-3.89	-2.67	-15.97	-7.35	-1.58	-3.46
<b>Milk production costs (final result)</b>	<b>46.78</b>	<b>47.44</b>	<b>41.44</b>	<b>52.54</b>	<b>34.21</b>	<b>58.63</b>	<b>42.33</b>	<b>44.54</b>	<b>45.35</b>
<b>Net investments (ø 2009 – 2018)</b>	2.74	1.64	1.90	-0.12	2.73	3.37	5.21	5.12	1.69
<b>Milk production costs including net investments</b>	49.52	49.08	43.34	52.42	36.94	62.00	47.54	49.66	47.04

\* All results of 2019: trend calculations by BAL based on FADN 2018 and Eurostat.

\*\* Seeds, fertilizers, plant protection products, bought-in feed, equipment & machinery upkeep and energy.

\*\*\* Other specific costs for plant and animal production and all non-specific costs like contract work, other farming overheads, paid wages, rent, interest and taxes (in 2018).

\*\*\*\* The results for the EU average refer to 26 EU Member States, excluding Greece and Cyprus, with the United Kingdom.

## Composition of milk production costs 2019

The **costs for inputs** like seeds, fertilizers, plant protection products, bought-in feed, building & machinery upkeep as well as energy in the eight countries in question were between 16.43 (Ireland) and 21.87 (Germany) c/kg, thus varying by 5.44 cents at the most. The 2019 figures for these cost headings are projected trends.

In the past years, a **significant increase in feed costs** has been observed in all eight EU Member States as well as in the EU average. This is a direct result of **droughts** and extremely dry summers in recent years. The cost increases stem from both bought-in feed as well as more expensive on-farm fodder production.<sup>1</sup>

Production costs are initially reported for all heads of cattle on the farms. That is why **farm revenue from the sale of calves as well as fattening and breeding cattle** (production value of

beef) is then **deducted** from these costs. The remainder is thus the cost of producing milk.

Together with general operating costs (15.69 to 25.43 c/kg) and after deducting the production value of beef, the resulting **paid costs** of milk production for 2019 are between 24.81 c/kg (Ireland) and 40.25 c/kg (Denmark). These are the costs incurred by farms for producing milk without including labour costs for the dairy farming families. General operating costs are the lowest on farms in **Ireland** and **Belgium** (at 15.69 and 15.89 c/kg respectively). **Denmark, France, Lithuania** and **Luxembourg**, on the other hand, stand out with very high operating costs. **Danish** dairy farms spend comparatively more on wages (5.06 c/kg), depreciation (4.45 c/kg), livestock farming (3.49 c/kg) and contract work (3.42 c/kg). The high general operating costs in **France** mainly derive from high costs for contract work and depreciation (13.22 c/kg combined). In **Lithuania**, depreciation alone at

<sup>1</sup> The cost of hay, grass and maize silage, etc. is calculated on the basis of the cost of the necessary seeds, fertilizers and plant protection products as well as other plant production-related spending.

14.51 c/kg account for more than half of general operating costs and the situation is not that different in Luxembourg with 11.26 c/kg, representing 47% of general operating costs.

The **low income variable** of 3.61 c/kg in **Denmark** is the result of a significantly higher milk yield and a relatively small number of family members providing non-remunerated labour on Danish farms (188 dairy cows with a milk yield of 9820 kilograms, 1.21 family workers, see *Table 5*). The income variable accounts for a very large part of milk production costs in **Lithuania** (38.64 c/kg). This is because of a relatively high number of family members working on small dairy farms with a smaller total milk yield. The legally-applicable minimum wage (multiplied by two), which was used as the basis to calculate the income variable, has also increased significantly in Lithuania in recent years.

The **final result** of milk production costs in the different countries ranges between 34.21 and 58.63 c/kg (*Table 1, Table 2*).

The milk production costs in this study are expressed in cents per kilogram of milk. The effect of milk production volumes on milk production costs should therefore not be underestimated. This interplay becomes especially evident when looking at the **income variable**. Calculations for Lithuania provide an income variable of 38.64 c/kg – for 11 dairy cows and a milk yield of 5,650 kilograms – and are based on a gross hourly wage of 8.76 euros (including employer contributions).

This results in an annual income variable of 20,554 euros per farm. The income variable for Danish dairy farms is only 3.61 cents, for 188 dairy cows and a milk yield of 9,820 kilograms. This calculation result is based on a collectively-bargained gross hourly wage of 30 euros (including employer contributions). An annual income variable of 76,880 was reported per farm in Denmark.

**CAP payments** linked to milk production are regarded as income and are therefore deducted from total production costs. **Net investments** as well as **imputed costs for land and capital** have not been included in the final result. They are presented separately in *Table 3 and 4*.

### Investment needs

In the last ten years, from 2009 to 2018, **net investments** (i.e. gross investment minus depreciation) in the analysed countries were between -0.12 and 5.21 c/kg of milk on average. Net investment in France was negative, i.e. physical capital on farms decreased. The milk price should cover investments as well. They are a precondition to the **future survival of dairy farms**. It is only through investments that dairy farms can be in a position to change their production models, so as to **adapt to new environmental framework conditions and expectations**, which call for high-quality food and improved animal welfare.

**Table 3: Net investments (10-year average, in c/kg)**

Country	BE	DE	DK	FR	IE	LT	LU	NL	ø EU*
<b>Net investments (Ø 2009 – 2018)</b>	2.74	1.64	1.90	-0.12	2.73	3.37	5.21	5.12	1.69

\* The results for the EU average refer to 26 EU Member States, excluding Greece and Cyprus, with the United Kingdom.

**Table 4: Imputed costs in the eight countries (situation 2018/19, in c/kg)\***

Country	BE	DE	DK	FR	IE	LT	LU	NL	ø EU**
<b>Land (rent variable)</b>	0.65	1.24	3.46	0.30	3.13	1.48	1.49	3.34	1.24

\* Due to the ECB's interest rate policy, the interest variable (imputed costs for capital) is currently negative. Therefore, these results are not presented in this edition of the brochure.

\*\* The results for the EU average refer to 26 EU Member States, excluding Greece and Cyprus, with the United Kingdom.



### Dairy farm structure

The structure of dairy farms in the different Member States varies significantly. The development and business model of farms has been influenced by many historical, local and economic factors. For example, the **average herd size** of the dairy farms included in this study ranges from 11 to a maximum 188 dairy cows, on an **area** between 31 and 181 hectares. **Milk yield** per farm spans 5,650 to 9,820 kilograms. An **average EU dairy farm** covers 47 hectares of agricultural land, has a herd of 43 dairy cows and produces 7,229 kilograms of milk.

Dairy farms in the EU are **mostly family run**. With the exception of **Denmark** (35%), the workforce on these farms essentially consists of non-remunerated, self-employed family members (69-96%) in all the EU Member States included in the study.

The average dairy farm in **France** has a relatively small herd on an extensive amount of land when compared to other countries. The land used by farms in the **Netherlands**, on the other hand, is very small in relation to the significant number of cows. **Danish** dairy farms top the list in terms of all structural parameters. While the herd size on **Irish** dairy farms is similar to **Belgium** and **Luxembourg** and they are spread over a similar amount of land as **Belgian** farms, their milk yield is significantly lower due to their specific production system. At 5,650 kilograms, **Lithuanian** farms stand alongside **Irish** farms in terms of milk yield, even though they use significantly less agricultural land and have much smaller dairy herds. Lithuania is the first Eastern European country to be included in the cost study. Compared to the other countries included in this study, farms are relatively small with an average herd size of 11 dairy cows.

Table 5: Dairy farm structure (average farm in 2018)

Country	Area in hectares	Number of dairy cows	Milk yield (in kg)	Total Annual Work Units (AWU)	Family Annual Work Units (FAWU)
<b>Belgium</b>	62	82	7,932	1.93	1.86
<b>Denmark</b>	181	188	9,820	3.46	1.21
<b>France</b>	98	65	6,888	1.94	1.65
<b>Germany</b>	79	70	7,912	2.13	1.48
<b>Ireland</b>	64	83	5,884	1.67	1.38
<b>Lithuania</b>	31	11	5,650	1.59	1.38
<b>Luxembourg</b>	104	80	7,936	1.83	1.61
<b>Netherlands</b>	59	103	8,875	1.94	1.63
<b>EU average*</b>	<b>47</b>	<b>43</b>	<b>7,229</b>	<b>1.89</b>	<b>1.52</b>

\* The results for the EU average refer to 26 EU Member States, excluding Greece and Cyprus, with the United Kingdom.

Before the publication of the first study on milk production costs in Germany in 2013, the **logic and methodology** used in the cost analyses was examined and approved by independent experts. In essence, the methodology used to calculate production costs closely mirrors that used by the European Commission's Directorate-General for Agriculture and Rural Development (DG AGRI) in the EU Dairy Farms Report.

The cost calculations are based on FADN data. The FADN uses **only official representative data**. This data is collected by national liaison agencies of the EU Member States and then evaluated by the European Commission. The FADN is currently the most comprehensive data source providing figures on the economic situation of agricultural holdings in the EU.

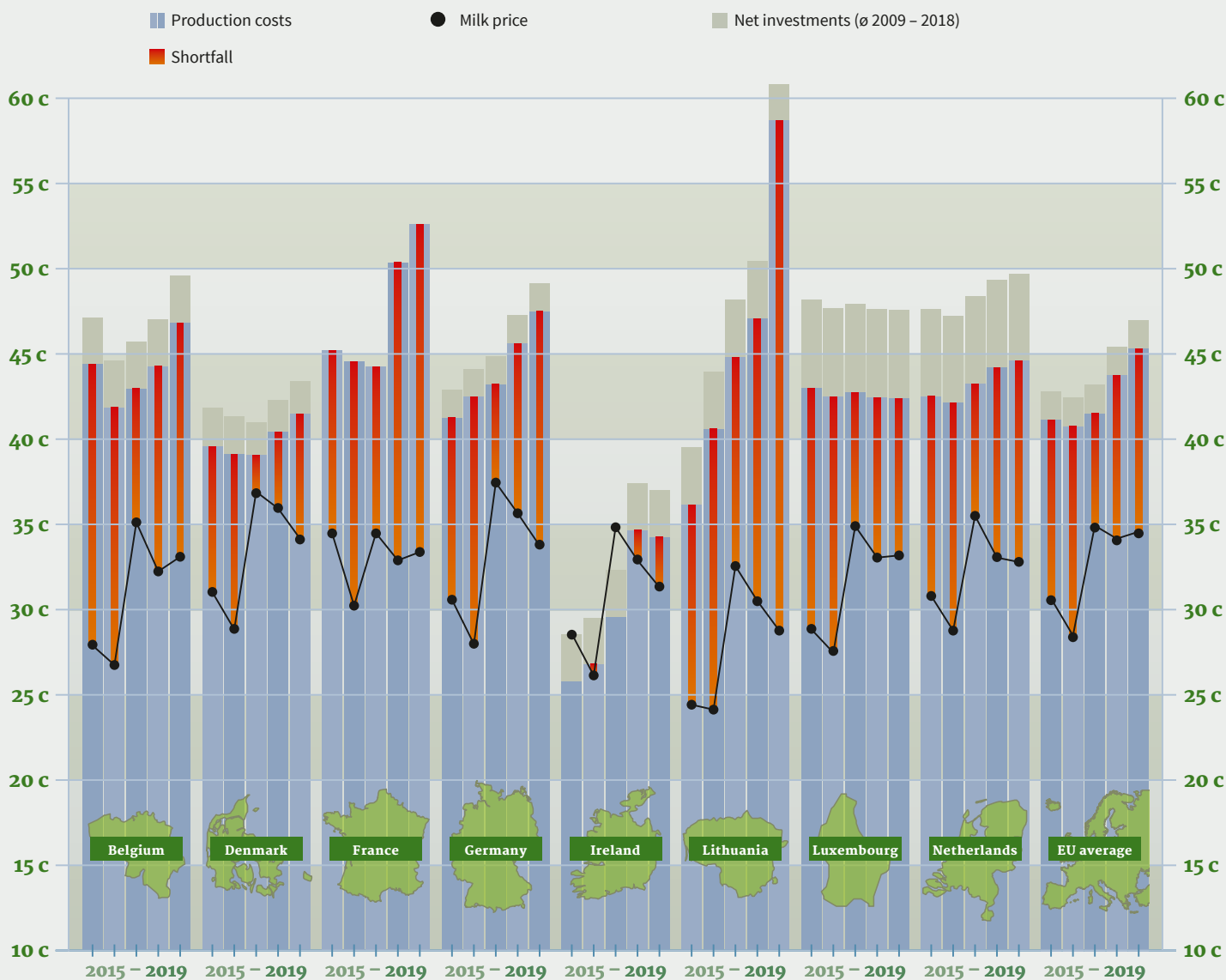
## Development of milk production costs 2015 – 2019

Figure 1 and Table 7 (pp. 12 – 13) show cost evolution over the last five years up to 2019. The figures for 2019 are projected values (trends).

**In none of these five years did farm-gate milk prices cover the cost of production.** Production costs have increased significantly in all countries since 2017/18. This is mainly due to extreme **droughts** in many countries, leading to higher costs for purchased feed (concentrates and additional basic forage). In contrast, farm-gate prices have not managed to recover back to 2017 levels. In all countries, average farm-gate milk prices in these five years remained somewhere between 31 to about 33.50 c/kg. In Lithuania, the price even remained below 30 c/kg.

Due to **rising milk production costs**, the gap between costs and milk price is constantly widening. In light of these circumstances, dairy farms are not only unable to generate a stable revenue to make their farms future-proof, even the milk price and the relevant CAP payments for milk production combined are not enough for farmers to earn a decent living. Because of increasing costs, coupled with sustained low milk prices, the economic situation on dairy farms is extremely fragile. Farms will be in a position to contribute to the implementation of environmental, climate and animal welfare goals – that all imply higher costs – only if there are lasting improvements in their economic situation.

Figure 1: Development of production costs and milk prices 2015 – 2019 (in c/kg)



## Income of dairy farmers 2015 – 2019

Milk production entails a heavy workload and should enable milk producers to earn a decent living. In this study, such an adequate income is based on applicable collective agreements or twice the minimum wage in the respective countries and is represented by the so-called **income variable** (see last row in Table 6 as well as Table 10, p. 37). However, this adequate income is rarely achieved in practice. **Under the current conditions and from the milk price alone, it is not possible for an average dairy farm to earn any income at all.**

The table below shows the average income that dairy farms were able to generate from the milk price and CAP payments in the five years from 2015 to 2019. The remaining income is what was left after deducting their paid costs (costs of farming inputs and general operating costs), i.e. what the producers were left with to pay for their own labour costs.

In most countries and on average in the EU, in the five years from 2015 to 2019, **the milk price did not even cover the paid costs of production** (i.e. production costs without income variable). **Even when taking into account CAP payments, paid costs could not be covered in several countries (Denmark, Netherlands).** An average dairy farm in these countries therefore generated a deficit in the last five years. But even in the countries where thanks to CAP payments producers on average were able to earn a certain income for their work, this was

**always far below the income variable.** For example, the income on a **French** farm, converted to one hour of work, was only **1.24 EUR/hour** and in **Luxembourg 1.82 EUR/hour**. In **Germany** and **Lithuania**, the income situation was similar at **2.63 EUR/hour** and **2.34 EUR/hour** respectively. **Belgian** milk producers as well were only left with an hourly wage of **6.58 EUR** after deducting their paid costs. Only in **Ireland**, where costs are lower, milk producers were able to generate an income of **22.23 EUR/hour** over these five years, reaching just about the level of the income variable. Dairy farmers in **Denmark** and the **Netherlands**, on the other hand, **did not earn any income at all** on average from milk production. Their hourly wage was therefore the equivalent of **0.00 EUR/hour**. For the **EU average**, too, the income from the milk price and CAP payments only allowed producers to earn **3.25 EUR/hour**. The trend calculations for 2019 suggest that in most countries the farms' income situation has even worsened due to increased costs (see results 2019, pp. 6 – 8).

For the future of the sector, the income situation in European dairy farms is of great concern. The current structural changes with an increasing number of farm closures confirms this imbalance. From a purely economic point of view, it makes little sense for a young farmer to go into milk production. A long-term, sustainable development of the industry requires future prospects. These are not given due to the current market situation.

**Table 6: Comparison of actual income with necessary adequate income 2015 – 2019\***

Country	BE	DE	DK	FR	IE	LT	LU	NL	ø EU**
<b>Revenue from milk price and CAP payments (in c/kg)</b>	33.20	36.02	35.81	37.02	33.38	42.30	38.93	33.95	36.01
<b>of which milk price (in c/kg)</b>	30.98	33.03	33.37	33.04	30.72	28.07	31.46	32.15	32.50
<b>Paid costs (in c/kg)</b>	28.80	34.60	38.68	36.20	21.54	32.00	38.16	35.88	33.98
<b>Remaining income (in c/kg)</b>	4.40	1.42	-2.87	0.82	11.84	10.30	0.77	-1.93	2.03
<b>Remaining income converted in EUR/h*** (real income)</b>	<b>6.58</b>	<b>2.63</b>	<b>0.00</b>	<b>1.24</b>	<b>22.23</b>	<b>2.34</b>	<b>1.82</b>	<b>0.00</b>	<b>3.25</b>
<b>Adequate income in EUR/h*** (based on income variable)</b>	<b>26.08</b>	<b>22.50</b>	<b>30.06</b>	<b>26.66</b>	<b>22.66</b>	<b>8.76</b>	<b>28.30</b>	<b>24.00</b>	<b>19.85</b>

\* All results of 2019: trend calculations by BAL based on FADN 2018 and Eurostat.

\*\* The results for the EU average refer to 26 EU Member States, excluding Greece and Cyprus, with the United Kingdom.

\*\*\* Calculation estimate based on the income variable. For more information on the calculation of the income variable, see pp. 34 – 39.

Table 7: Cost of production, milk prices and shortfall 2015 – 2019 (in c/kg)

Year	2015	2016	2017	2018	2019*	Ø 2015 – 2019
<b>Belgium</b>						
Production costs**	44.34	41.80	42.92	44.23	46.78	<b>44.01</b>
Milk price***	27.93	26.70	35.05	32.19	33.05	<b>30.98</b>
Shortfall in c/kg	<b>-16.41</b>	<b>-15.10</b>	<b>-7.87</b>	<b>-12.04</b>	<b>-13.73</b>	<b>-13.03</b>
Shortfall in %	<b>-37%</b>	<b>-36%</b>	<b>-18%</b>	<b>-27%</b>	<b>-29%</b>	<b>-30%</b>
<b>Denmark</b>						
Production costs**	39.88	39.41	39.04	40.32	41.44	<b>40.02</b>
Milk price***	31.03	28.83	36.90	35.96	34.11	<b>33.37</b>
Shortfall in c/kg	<b>-8.85</b>	<b>-10.58</b>	<b>-2.14</b>	<b>-4.36</b>	<b>-7.33</b>	<b>-6.65</b>
Shortfall in %	<b>-22%</b>	<b>-27%</b>	<b>-5%</b>	<b>-11%</b>	<b>-18%</b>	<b>-17%</b>
<b>France</b>						
Production costs**	45.14	44.49	44.21	50.31	52.54	<b>47.34</b>
Milk price***	34.42	30.18	34.42	32.84	33.33	<b>33.04</b>
Shortfall in c/kg	<b>-10.72</b>	<b>-14.31</b>	<b>-9.79</b>	<b>-17.47</b>	<b>-19.21</b>	<b>-14.30</b>
Shortfall in %	<b>-24%</b>	<b>-32%</b>	<b>-22%</b>	<b>-35%</b>	<b>-37%</b>	<b>-30%</b>
<b>Germany</b>						
Production costs**	41.20	42.44	43.17	45.57	47.44	<b>43.96</b>
Milk price***	30.53	27.93	37.40	35.60	33.70	<b>33.03</b>
Shortfall in c/kg	<b>-10.67</b>	<b>-14.51</b>	<b>-5.77</b>	<b>-9.97</b>	<b>-13.74</b>	<b>-10.93</b>
Shortfall in %	<b>-26%</b>	<b>-34%</b>	<b>-13%</b>	<b>-22%</b>	<b>-29%</b>	<b>-25%</b>
<b>Ireland</b>						
Production costs**	25.75	26.75	29.53	34.61	34.21	<b>30.17</b>
Milk price***	28.60	26.09	34.78	32.87	31.26	<b>30.72</b>
Shortfall in c/kg	<b>2.85</b>	<b>-0.66</b>	<b>5.25</b>	<b>-1.74</b>	<b>-2.95</b>	<b>0.55</b>
Shortfall in %	<b>11%</b>	<b>-2%</b>	<b>18%</b>	<b>-5%</b>	<b>-9%</b>	<b>3%</b>

\* All results of 2019: trend calculations by BAL based on FADN 2018 and Eurostat.

\*\* Total costs without net investments.

\*\*\* The mentioned milk prices refer to either natural fat and protein contents (according to data from the MMO) or to 4% fat and 3.4% protein (according to national statistical data). Detailed information on the sources used can be found in the respective country data sheets (see pp. 14 – 33).

Year	2015	2016	2017	2018	2019*	Ø 2015 – 2019
<b>Lithuania</b>						
Production costs**	36.09	40.55	44.75	47.02	58.63	45.41
Milk price***	24.41	24.12	32.55	30.49	28.79	28.07
Shortfall in c/kg	-11.68	-16.43	-12.20	-16.53	-29.84	-17.34
Shortfall in %	-32%	-41%	-27%	-35%	-51%	-38%
<b>Luxembourg</b>						
Production costs**	42.94	42.43	42.68	42.38	42.33	42.55
Milk price***	28.82	27.48	34.85	33.00	33.13	31.46
Shortfall in c/kg	-14.12	-14.95	-7.83	-9.38	-9.20	-11.10
Shortfall in %	-33%	-35%	-18%	-22%	-22%	-26%
<b>Netherlands</b>						
Production costs**	42.46	42.07	43.20	44.16	44.54	43.29
Milk price***	30.75	28.75	35.45	33.03	32.75	32.15
Shortfall in c/kg	-11.71	-13.32	-7.75	-11.13	-11.79	-11.14
Shortfall in %	-28%	-32%	-18%	-25%	-26%	-26%
<b>EU average****</b>						
Production costs**	41.18	40.79	41.55	43.78	45.35	42.53
Milk price***	30.60	28.43	34.86	34.11	34.52	32.50
Shortfall in c/kg	-10.58	-12.36	-6.69	-9.67	-10.83	-10.03
Shortfall in %	-26%	-30%	-16%	-22%	-24%	-24%

\* All results of 2019: trend calculations by BAL based on FADN 2018 and Eurostat.

\*\* Total costs without net investments.

\*\*\* The mentioned milk prices refer to either natural fat and protein contents (according to data from the MMO) or to 4% fat and 3.4% protein (according to national statistical data). Detailed information on the sources used can be found in the respective country data sheets (see pp. 14 – 33).

\*\*\*\* The results for the EU average refer to 26 EU Member States, excluding Greece and Cyprus, with the United Kingdom.

# Milk production costs 2019 – country data sheets





## → Belgium Milk production costs 2019

By 2019, the cost to produce one kilogram of milk in Belgium had risen to 46.78 c/kg. This was mainly due to increases in the cost of purchased feed and fodder cultivation. However, the farm-gate milk price of 33.05 c/kg was well below 2017 levels. This price covered little more than paid costs of an average 31.37 c/kg. This means that 29% – almost one third – of total costs were not covered.

In the last five years up to 2019, producer prices were an average 30.98 c/kg, i.e. only 70% of milk production costs were actually covered.

Through the milk price alone, Belgian dairy farmers generated a meagre average revenue of 2.19 c/kg over the last five years. Paid costs of milk production in this period were an average 28.80 c/kg. Together with CAP payments, dairy farms earned a total 4.40 c/kg. This is only about a fourth of the current income variable of 17.46 c/kg calculated for Belgian dairy farmers. For 2018 and 2019, this income variable was calculated on the basis of an average hourly wage of 26 euros (including employer contributions).

### Overview of milk production costs in 2019<sup>2</sup>

#### Cost items

Purchased feed	12.59
Fodder production (seeds, fertilizers, plant protection products, other)	2.72
Livestock costs (veterinary costs, insemination, etc.)	3.29
Building & machinery upkeep	2.24
Energy	1.88
Contract work	2.97
Wages paid	0.25
Other farming overheads	0.75
Rent paid	1.92
Depreciation	5.20
Interest and taxes	1.45

- **Production value of beef**

- 3.89

= **Paid costs of milk production (for collected milk only)**

= 31.37

+ **Income variable (labour costs)**

17.46

= Total costs

= 48.83

- **CAP payments**

- 2.05

= **Milk production costs**

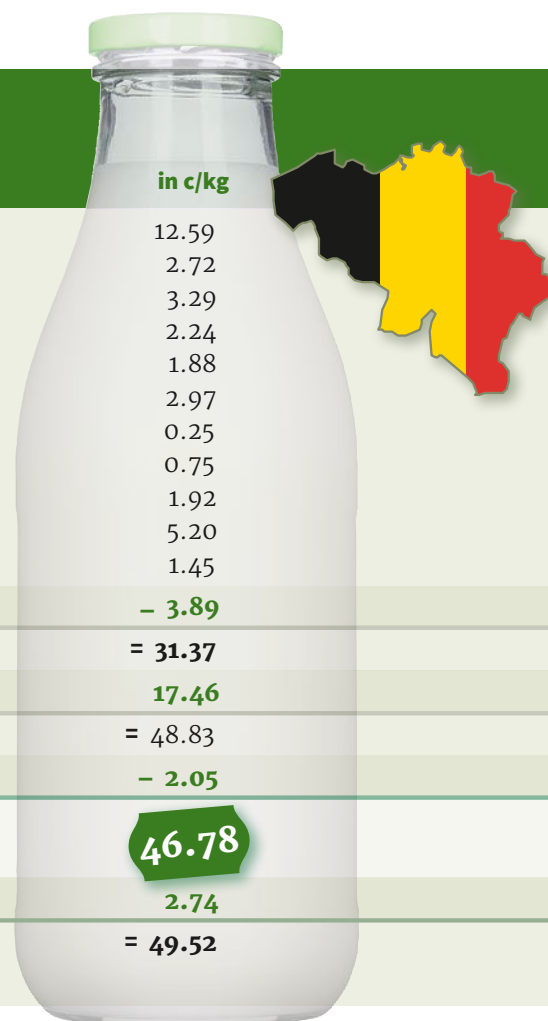
46.78

+ **Net investments (10-year average)**

2.74

= **Milk production costs including net investments**

= 49.52



### Development of net investments 2009 – 2018 (in c/kg, FADN 2018)

Year	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Ø 10 years
Gross investments	7.60	9.84	7.22	8.39	9.66	8.49	6.53	5.44	6.94	8.86	7.90
Net investments (without depreciation)	2.61	4.51	1.80	2.99	3.71	3.20	1.40	0.93	2.08	4.18	2.74

## Composition of milk production costs 2015 – 2019 (in c/kg, FADN 2018)

Year	Paid costs	+ Income variable	= Total costs	- CAP payments	= Production costs	+ Net investments (Ø 2009 – 2018)	= Costs + net investments
2019 <sup>2</sup>	31.37	17.46	48.83	2.05	<b>46.78</b>	<b>2.74</b>	43.34
2018	28.82	17.46	46.28	2.05	<b>44.23</b>		42.22
2017	27.85	17.37	45.22	2.30	<b>42.92</b>		40.94
2016	27.32	16.79	44.11	2.31	<b>41.80</b>		41.31
2015	28.63	18.07	46.70	2.36	<b>44.34</b>		41.78
Ø 2015 – 2019	<b>28.80</b>	<b>17.43</b>	<b>46.23</b>	<b>2.21</b>	<b>44.01</b>	-	-

## Development of milk production costs 2012 – 2019 (in c/kg, without net investments)

Year	2012	2013	2014	2015	2016	2017	2018	2019 <sup>2</sup>	Ø 2015 – 2019
Production costs	43.41	46.12	45.40	44.34	41.80	42.92	44.23	46.78	44.01
Milk price*	30.19	37.22	36.00	27.93	26.70	35.05	32.19	33.05	30.98
Shortfall in c/kg	<b>-13.22</b>	<b>-8.90</b>	<b>-9.40</b>	<b>-16.41</b>	<b>-15.10</b>	<b>-7.87</b>	<b>-12.04</b>	<b>-13.73</b>	<b>-13.03</b>
Shortfall in %	<b>-30%</b>	<b>-19%</b>	<b>-21%</b>	<b>-37%</b>	<b>-36%</b>	<b>-18%</b>	<b>-27%</b>	<b>-29%</b>	<b>-30%</b>
MMI (index, base year = 2015)**	98	104	102	100	94	97	100	106	-

\* Source: MMO of the EU 2020, natural fat and protein contents.

\*\* The Milk Marker Index (MMI) reflects the development of milk production costs.

## Price/cost ratio (shortfall)



## → Denmark Milk production costs 2019



By 2019, the cost to produce one kilogram of milk in Denmark had risen to 41.44 c/kg. Almost all cost headings – most notably feed costs as well as costs for energy and building and machinery upkeep – showed an upward trend. In contrast, producer prices for milk had decreased by 2.79 c/kg since 2017. This led to a shortfall of 18% in 2019.

On average over the five years leading up to 2019, production costs were 40.02 c/kg and producer prices only 33.37 c/kg. In these years, paid costs of milk production were fully covered by the milk price plus CAP payments only in one year (2017: +1.46 c/kg). In the period from 2015 to 2019, an average dairy

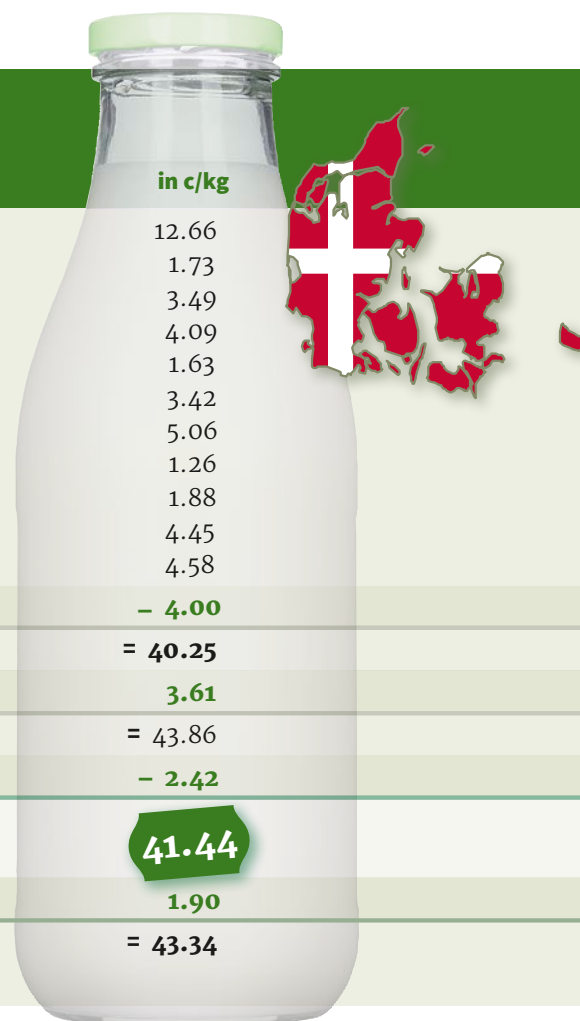
farm in Denmark did not generate any income from milk production alone (-2.87 c/kg after deduction of production costs from milk price and CAP payments), and this is before any consideration of labour costs as per the income variable.

The income variable for 2019 was calculated on basis of an average hourly wage of 30 euros (including employer contributions). Since 2010, investments by Danish dairy farms have decreased by 86%.

### Overview of milk production costs in 2019<sup>2</sup>

#### Cost items

	in c/kg
Purchased feed	12.66
Fodder production (seeds, fertilizers, plant protection products, other)	1.73
Livestock costs (veterinary costs, insemination, etc.)	3.49
Building & machinery upkeep	4.09
Energy	1.63
Contract work	3.42
Wages paid	5.06
Other farming overheads	1.26
Rent paid	1.88
Depreciation	4.45
Interest and taxes	4.58
<b>- Production value of beef</b>	<b>- 4.00</b>
<b>= Paid costs of milk production (for collected milk only)</b>	<b>= 40.25</b>
<b>+ Income variable (labour costs)</b>	<b>3.61</b>
<b>= Total costs</b>	<b>= 43.86</b>
<b>- CAP payments</b>	<b>- 2.42</b>
<b>= Milk production costs</b>	<b>41.44</b>
<b>+ Net investments (10-year average)</b>	<b>1.90</b>
<b>= Milk production costs including net investments</b>	<b>= 43.34</b>



### Development of net investments 2009 – 2018 (in c/kg, FADN 2018)

Year	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Ø 10 years
Gross investments	11.99	6.44	6.74	4.60	6.21	5.52	5.34	5.37	5.87	4.98	6.31
Net investments (without depreciation)	7.11	1.69	1.97	0.08	1.62	0.99	1.20	1.33	1.97	0.99	1.90



## Composition of milk production costs 2015 – 2019 (in c/kg, FADN 2018)

Year	Paid costs	+ Income variable	= Total costs	- CAP payments	= Production costs	+ Net investments (Ø 2009 – 2018)	= Costs + net investments
2019 <sup>2</sup>	40.25	3.61	43.86	2.42	<b>41.44</b>	<b>1.90</b>	43.34
2018	39.20	3.54	42.74	2.42	<b>40.32</b>		42.22
2017	37.92	3.60	41.52	2.48	<b>39.04</b>		40.94
2016	37.76	4.08	41.84	2.43	<b>39.41</b>		41.31
2015	38.26	4.07	42.33	2.45	<b>39.88</b>		41.78
Ø 2015 – 2019	<b>38.68</b>	<b>3.78</b>	<b>42.46</b>	<b>2.44</b>	<b>40.02</b>	-	-

## Development of milk production costs 2012 – 2019 (in c/kg, without net investments)

Year	2012	2013	2014	2015	2016	2017	2018	2019 <sup>2</sup>	Ø 2015 – 2019
Production costs	41.94	42.85	42.76	39.88	39.41	39.04	40.32	41.44	40.02
Milk price*	34.04	38.63	39.67	31.03	28.83	36.90	35.96	34.11	33.37
Shortfall in c/kg	<b>-7.90</b>	<b>-4.23</b>	<b>-3.09</b>	<b>-8.85</b>	<b>-10.58</b>	<b>-2.14</b>	<b>-4.36</b>	<b>-7.33</b>	<b>-6.65</b>
Shortfall in %	<b>-19%</b>	<b>-10%</b>	<b>-7%</b>	<b>-22%</b>	<b>-27%</b>	<b>-5%</b>	<b>-11%</b>	<b>-18%</b>	<b>-17%</b>
MMI (index, base year = 2015)**	105	107	107	100	99	98	101	104	-

\* Source: MMO of the EU 2020, natural fat and protein contents.

\*\* The Milk Marker Index (MMI) reflects the development of milk production costs.

## Price/cost ratio (shortfall)





## → France Milk production costs 2019

By 2019, production costs in France had risen to 52.54 c/kg. This was mainly due to an increase in the income variable but also to a significant rise in feed costs compared to 2017. The farm-gate milk price in 2019 was as low as 33.33 c/kg. This implies a shortfall of 37% for French dairy farmers.

Between 2015 and 2019, the costs for farming inputs and general operating costs (paid costs) alone were an average 36.20 c/kg. In the same period, dairy farms had a combined income of 37.02 c/kg from the farm-gate milk price and CAP payments linked to milk production. This means that their

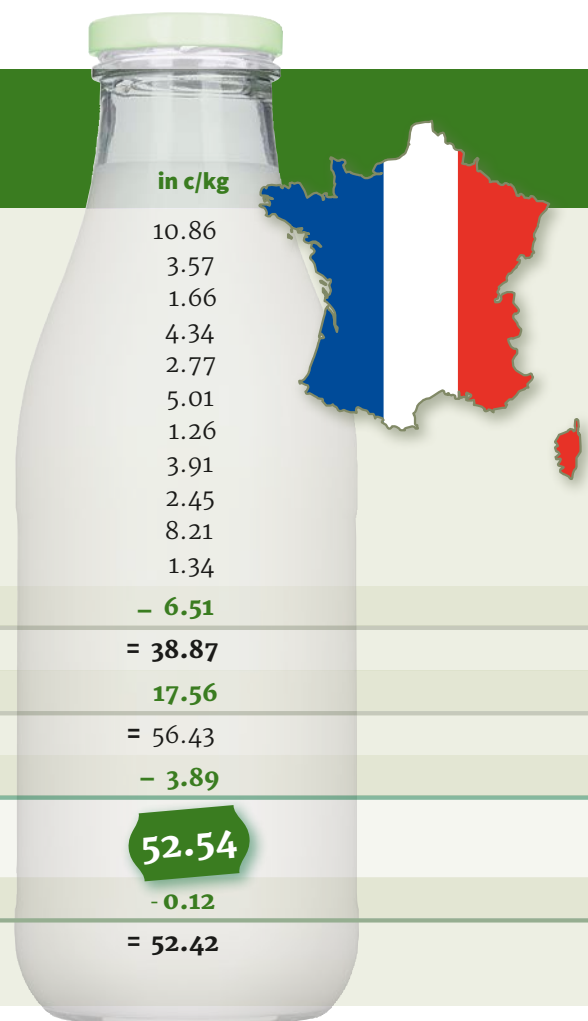
real income was a paltry 0.82 c/kg on average, which is merely 5% of labour costs as per the income variable. Since 2018, the income variable has been calculated on the basis of an hourly wage of 26.66 euros (including employer contributions, before 21.62 euros).

The extremely poor income situation on French farms is also mirrored in the evolution of net investments, which were, on average, negative over the last ten years (-0.12 c/kg). The average dairy farm in France, therefore, survives on write-offs and the value of their physical capital has diminished.

### Overview of milk production costs in 2019<sup>2</sup>

#### Cost items

	in c/kg
Purchased feed	10.86
Fodder production (seeds, fertilizers, plant protection products, other)	3.57
Livestock costs (veterinary costs, insemination, etc.)	1.66
Building & machinery upkeep	4.34
Energy	2.77
Contract work	5.01
Wages paid	1.26
Other farming overheads	3.91
Rent paid	2.45
Depreciation	8.21
Interest and taxes	1.34
<b>- Production value of beef</b>	<b>- 6.51</b>
<b>= Paid costs of milk production (for collected milk only)</b>	<b>= 38.87</b>
<b>+ Income variable (labour costs)</b>	<b>17.56</b>
<b>= Total costs</b>	<b>= 56.43</b>
<b>- CAP payments</b>	<b>- 3.89</b>
<b>= Milk production costs</b>	<b>52.54</b>
<b>+ Net investments (10-year average)</b>	<b>- 0.12</b>
<b>= Milk production costs including net investments</b>	<b>= 52.42</b>



### Development of net investments 2009 – 2018 (in c/kg, FADN 2018)

Year	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Ø 10 years
Gross investments	7.06	6.21	6.46	7.36	6.80	7.68	6.47	6.82	6.68	8.06	6.96
Net investments (without depreciation)	-0.41	-0.83	-0.42	0.47	-0.85	0.56	-0.38	-0.22	-0.23	1.09	-0.12

## Composition of milk production costs 2015 – 2019 (in c/kg, FADN 2018)

Year	Paid costs	+ Income variable	= Total costs	- CAP payments	= Production costs	+ Net investments (Ø 2009 – 2018)	= Costs + net investments
2019 <sup>2</sup>	38.87	17.56	56.43	3.89	<b>52.54</b>		52.42
2018	37.25	16.95	54.20	3.89	<b>50.31</b>		50.19
2017	34.85	13.25	48.10	3.89	<b>44.21</b>	<b>-0.12</b>	44.09
2016	34.39	14.21	48.60	4.11	<b>44.49</b>		44.37
2015	35.64	14.21	49.85	4.11	<b>45.74</b>		45.62
Ø 2015 – 2019	<b>36.20</b>	<b>15.24</b>	<b>51.44</b>	<b>3.98</b>	<b>47.46</b>	-	-

## Development of milk production costs 2012 – 2019 (in c/kg, without net investments)

Year	2012	2013	2014	2015	2016	2017	2018	2019 <sup>2</sup>	Ø 2015 – 2019
Production costs	49.67	45.74	44.49	45.14	44.49	44.21	50.31	52.54	47.34
Milk price*	37.34	32.29	30.18	34.42	30.18	34.42	32.84	33.33	33.04
Shortfall in c/kg	<b>-12.33</b>	<b>-13.45</b>	<b>-14.31</b>	<b>-10.72</b>	<b>-14.31</b>	<b>-9.79</b>	<b>-17.47</b>	<b>-19.21</b>	<b>-14.30</b>
Shortfall in %	<b>-25%</b>	<b>-29%</b>	<b>-32%</b>	<b>-24%</b>	<b>-32%</b>	<b>-22%</b>	<b>-35%</b>	<b>-37%</b>	<b>-30%</b>
MMI (index, base year = 2015)**	110	101	99	100	99	98	111	116	-

\* Source: MMO of the EU 2020, natural fat and protein contents.

\*\* The Milk Marker Index (MMI) reflects the development of milk production costs.

## Price/cost ratio (shortfall)





## → Germany Milk production costs 2019

By 2019, the cost to produce one kilogram of milk in Germany had risen to 47.44 c/kg. Because of extreme droughts since 2018, feed costs increased sharply. At the same time, the milk price decreased by 3.70 c/kg between 2017 and 2019, which means that the price-cost gap widened even further.

The shortfall in Germany was an average 25% over the five years from 2015 to 2019. An average dairy farm in Germany was unable to generate any revenue during this period from milk production alone, i.e. without CAP payments. The cost of farming inputs and other general operating costs (paid costs)

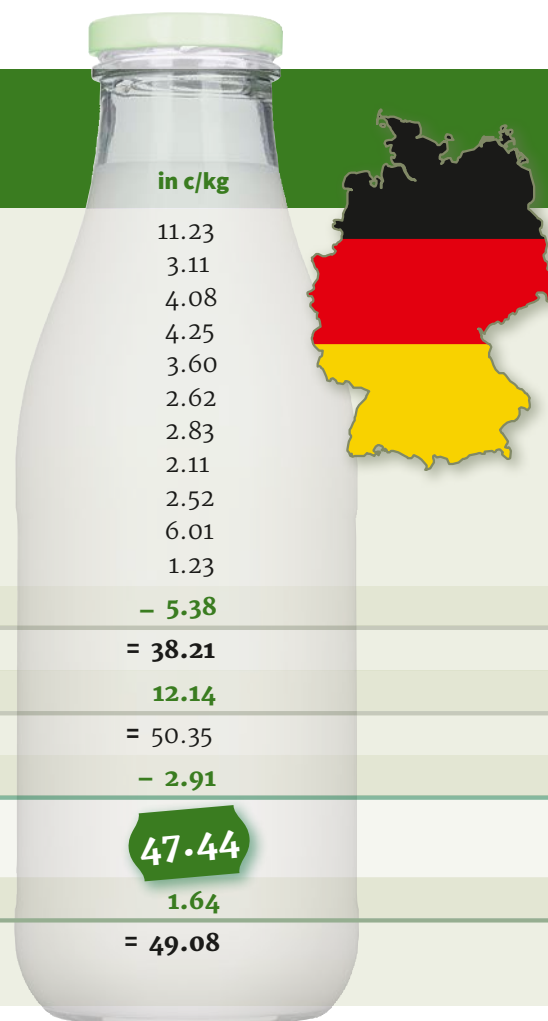
alone amounted to an average 34.60 c/kg between 2015 and 2019. The farm-gate milk price during this period was merely 33.03 c/kg. It was only with CAP payments (2.99 c/kg) that farms were able to earn 1.42 c/kg. This is, however, only about 12% of labour costs as per the income variable. The income variable for 2019 was calculated on basis of an average hourly wage of 22.50 euros (including employer contributions, weighted according to usual collectively-negotiated standards in the federal states). Investments on farms shrank significantly, above all during the 2015/16 crisis.

### Overview of milk production costs in 2019<sup>2</sup>

#### Cost items

Purchased feed	11.23
Fodder production (seeds, fertilizers, plant protection products, other)	3.11
Livestock costs (veterinary costs, insemination, etc.)	4.08
Building & machinery upkeep	4.25
Energy	3.60
Contract work	2.62
Wages paid	2.83
Other farming overheads	2.11
Rent paid	2.52
Depreciation	6.01
Interest and taxes	1.23

<b>- Production value of beef</b>	<b>- 5.38</b>
<b>= Paid costs of milk production (for collected milk only)</b>	<b>= 38.21</b>
<b>+ Income variable (labour costs)</b>	<b>12.14</b>
<b>= Total costs</b>	<b>= 50.35</b>
<b>- CAP payments</b>	<b>- 2.91</b>
<b>= Milk production costs</b>	<b>47.44</b>
<b>+ Net investments (10-year average)</b>	<b>1.64</b>
<b>= Milk production costs including net investments</b>	<b>= 49.08</b>



### Development of net investments 2009 – 2018 (in c/kg, FADN 2018)

Year	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Ø 10 years
Gross investments	5.88	6.91	8.17	7.23	9.48	6.54	5.67	5.04	6.83	7.50	6.92
Net investments (without depreciation)	0.69	1.14	2.54	1.68	3.50	1.57	1.05	0.23	1.77	2.26	1.64

## Composition of milk production costs 2015 – 2019 (in c/kg, FADN 2018)

Year	Paid costs	+ Income variable	= Total costs	- CAP payments	= Production costs	+ Net investments (Ø 2009 – 2018)	= Costs + net investments
2019 <sup>2</sup>	38.21	12.14	50.35	2.91	47.44	1.64	49.08
2018	36.34	12.14	48.48	2.91	45.57		47.21
2017	33.76	12.44	46.20	3.03	43.17		44.81
2016	32.81	12.73	45.54	3.10	42.44		44.08
2015	31.88	12.31	44.19	2.99	41.20		42.84
Ø 2015 – 2019	34.60	12.35	46.95	2.99	43.96	-	-

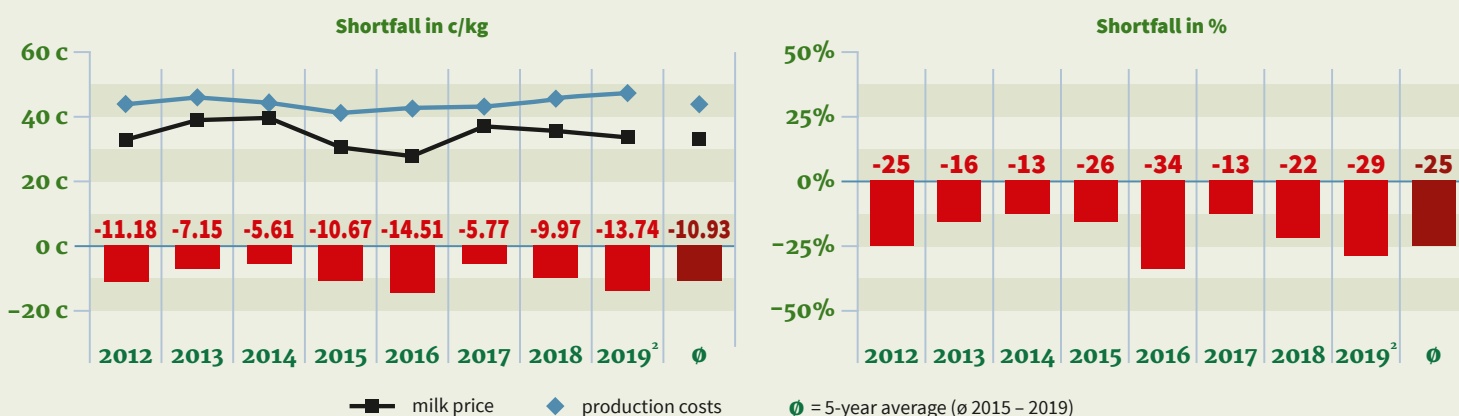
## Development of milk production costs 2012 – 2019 (in c/kg, without net investments)

Year	2012	2013	2014	2015	2016	2017	2018	2019 <sup>2</sup>	Ø 2015 – 2019
Production costs	44.08	45.90	44.39	41.20	42.44	43.17	45.57	47.44	43.96
Milk price*	32.90	38.75	38.78	30.53	27.93	37.40	35.60	33.70	33.03
Shortfall in c/kg	-11.18	-7.15	-5.61	-10.67	-14.51	-5.77	-9.97	-13.74	-10.93
Shortfall in %	-25%	-16%	-13%	-26%	-34%	-13%	-22%	-29%	-25%
MMI (index, base year = 2015)**	107	111	108	100	103	105	111	115	-

\* Source: MMO of the EU 2020, natural fat and protein contents.

\*\* The Milk Marker Index (MMI) reflects the development of milk production costs.

## Price/cost ratio (shortfall)





## → Germany Organic milk production costs 2019/20

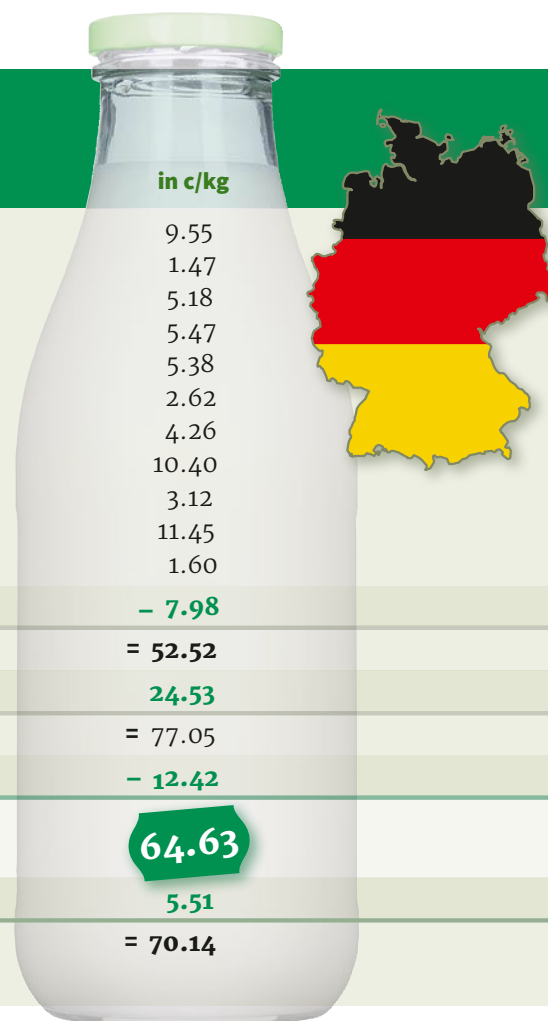
Since 2019, a study has also been carried out on organic milk production costs in Germany. Instead of using FADN data, as in the calculations of the average cost for all dairy farms in Germany, these results are based on national data from the German Federal Ministry of Agriculture. In the marketing year 2019/20, organic milk production costs in Germany were 64.63 c/kg. They increased by 1.20 c/kg as compared to the previous year. The organic milk price in 2019/20 was 47.17 c/kg. This covered only 73% of production costs. The current calculations have provided an income variable of 24.53 c/kg for labour costs on organic dairy farms in Germany.

In the five years from 2015/16 to 2019/20, organic milk producers generated an average revenue of 60.15 c/kg from the milk price (47.84 c/kg) and CAP payments (12.31 c/kg). During the same period, they incurred 51.53 c/kg for farming inputs and general operating costs (paid costs). This means that real earnings were only 8.62 c/kg of organic milk. That is only about 35% of the income variable included in the cost calculation as per standards set in collective agreements. This income variable was calculated on the basis of an average hourly wage of about 24 euros (including employer contributions).

### Overview of organic milk production costs in 2019/20<sup>2</sup>

#### Cost items

Cost items	in c/kg
Purchased feed	9.55
Fodder production (seeds, fertilizers, plant protection products, other)	1.47
Livestock costs (veterinary costs, insemination, etc.)	5.18
Building & machinery upkeep	5.47
Energy	5.38
Contract work	2.62
Wages paid	4.26
Other farming overheads	10.40
Rent paid	3.12
Depreciation	11.45
Interest and taxes	1.60
<b>- Production value of beef</b>	<b>- 7.98</b>
<b>= Paid costs of milk production (for collected milk only)</b>	<b>= 52.52</b>
<b>+ Income variable (labour costs)</b>	<b>24.53</b>
<b>= Total costs</b>	<b>= 77.05</b>
<b>- CAP payments</b>	<b>- 12.42</b>
<b>= Milk production costs</b>	<b>64.63</b>
<b>+ Net investments (10-year average)</b>	<b>5.51</b>
<b>= Milk production costs including net investments</b>	<b>= 70.14</b>



### Development of net investments 2011/12 – 2018/19 (in c/kg)

Year	2011/12	2012/13	2013/14	2014/15	2015/16	2016/17	2017/18	2018/19	Ø 8 years
Gross investments	18.26	17.60	19.46	16.50	17.28	20.16	14.54	14.62	17.30
Net investments (without depreciation)	6.68	6.60	7.59	3.75	5.58	7.48	3.40	2.96	5.51

## Composition of milk production costs 2015/16 – 2019/20 (in c/kg)

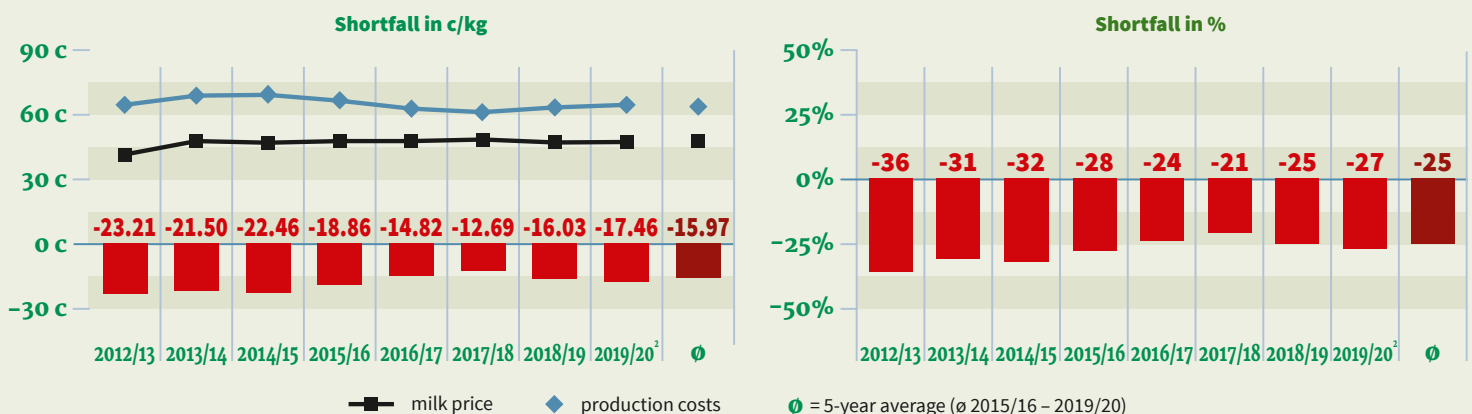
Year	Paid costs	+ Income variable	= Total costs	- CAP payments	= Production costs	+ Net investments Ø 2011/12 – 2018/19	= Costs + net investments
2019/20 <sup>2</sup>	52.52	24.53	77.05	12.42	<b>64.63</b>	5.51	70.14
2018/19	52.64	23.23	75.87	12.44	<b>63.43</b>		68.94
2017/18	50.15	22.68	72.83	11.60	<b>61.23</b>		66.74
2016/17	50.69	24.20	74.89	12.02	<b>62.87</b>		68.38
2015/16	51.64	28.34	79.98	13.08	<b>66.90</b>		72.41
Ø (2015/16 – 2019/20)	<b>51.53</b>	<b>24.60</b>	<b>76.12</b>	<b>12.31</b>	<b>63.81</b>		-

## Development of milk production costs 2012 – 2019 (in c/kg, without net investments)

Year	2011/12	2012/13	2013/14	2014/15	2015/16	2016/17	2017/18	2018/19	2019/20 <sup>2</sup>	Ø 2015/16 – 2019/20
Production costs	60.18	64.76	69.13	69.53	66.90	62.87	61.23	63.43	64.63	63.81
Milk price <sup>*</sup>	-	41.55	47.63	47.07	48.04	48.05	48.54	47.40	47.17	47.84
Shortfall in c/kg	-	<b>-23.21</b>	<b>-21.50</b>	<b>-22.46</b>	<b>-18.86</b>	<b>-14.82</b>	<b>-12.69</b>	<b>-16.03</b>	<b>-17.46</b>	<b>-15.97</b>
Shortfall in %	-	<b>-36%</b>	<b>-31%</b>	<b>-32%</b>	<b>-28%</b>	<b>-24%</b>	<b>-21%</b>	<b>-25%</b>	<b>-27%</b>	<b>-25%</b>
MMI (index, base year = 2015/16) <sup>**</sup>	-	97	103	104	100	94	92	95	97	-

\* Source: German Federal Office for Agriculture and Food (BLE) 2020, 4% fat and 3.4% protein.  
 \*\* The Milk Marker Index (MMI) reflects the development of milk production costs.

## Price/cost ratio (shortfall)





## → Ireland Milk production costs 2019

By 2019, the cost to produce one kilogram of milk in Ireland had risen to 34.21 c/kg. This is mainly due to increased feed costs following severe droughts. In comparison, the farm-gate milk price in 2019 was only 31.26 c/kg. This implies a shortfall of 9%.

Over the last five years up to 2019, an average Irish dairy farm generated a revenue of 33.38 c/kg from the milk price and CAP payments relevant to milk production. Costs for farming inputs and general operating costs were 21.54 c/kg over the same period. This means that Irish farms, on average, were able to cover the labour costs calculated for a family farm using the income variable.

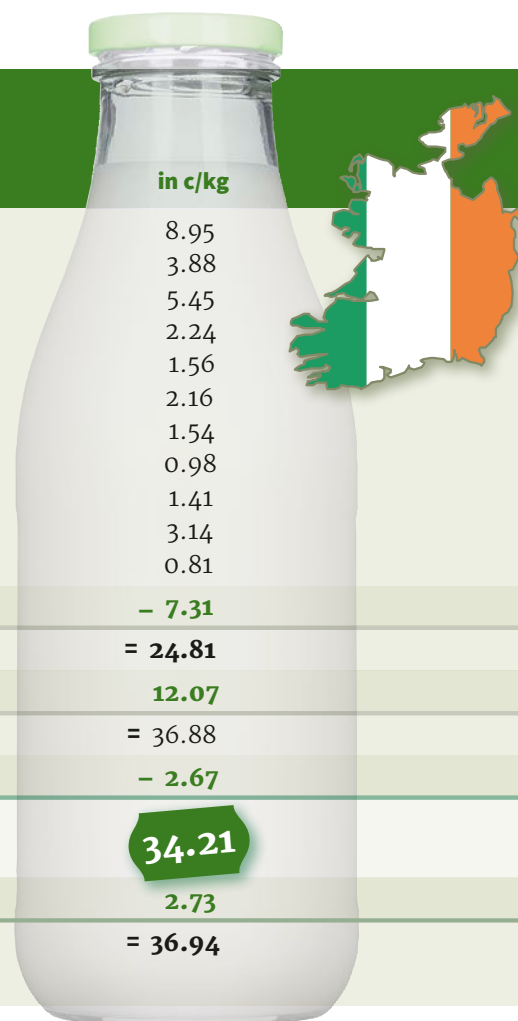
The income variable (12.07 c/kg) for 2019 was calculated on the basis of an hourly wage of 22.66 euros (including employer contributions).

An average dairy farm in Ireland has 83 dairy cows and produces 5,884 kilograms of milk, while using 64 hectares of agricultural land (99% fodder cultivation/pastures).

### Overview of milk production costs in 2019<sup>2</sup>

#### Cost items

	in c/kg
Purchased feed	8.95
Fodder production (seeds, fertilizers, plant protection products, other)	3.88
Livestock costs (veterinary costs, insemination, etc.)	5.45
Building & machinery upkeep	2.24
Energy	1.56
Contract work	2.16
Wages paid	1.54
Other farming overheads	0.98
Rent paid	1.41
Depreciation	3.14
Interest and taxes	0.81
<b>- Production value of beef</b>	<b>- 7.31</b>
<b>= Paid costs of milk production (for collected milk only)</b>	<b>= 24.81</b>
<b>+ Income variable (labour costs)</b>	<b>12.07</b>
<b>= Total costs</b>	<b>= 36.88</b>
<b>- CAP payments</b>	<b>- 2.67</b>
<b>= Milk production costs</b>	<b>34.21</b>
<b>+ Net investments (10-year average)</b>	<b>2.73</b>
<b>= Milk production costs including net investments</b>	<b>= 36.94</b>



### Development of net investments 2009 – 2018 (in c/kg, FADN 2018)

Year	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Ø 10 years
Gross investments	4.30	3.40	4.21	5.76	5.79	8.74	5.74	5.01	6.58	6.96	5.65
Net investments (without depreciation)	1.18	-0.32	1.40	2.19	2.08	6.02	3.40	2.77	4.17	4.44	2.73



## Composition of milk production costs 2015 – 2019 (in c/kg, FADN 2018)

Year	Paid costs	+ Income variable	= Total costs	- CAP payments	= Production costs	+ Net investments (Ø 2009 – 2018)	= Costs + net investments
2019 <sup>2</sup>	24.81	12.07	36.88	2.67	34.21	2.73	36.94
2018	25.54	11.74	37.28	2.67	34.61		37.34
2017	20.63	11.52	32.15	2.62	29.53		32.26
2016	18.60	10.81	29.41	2.66	26.75		29.48
2015	18.11	10.34	28.45	2.70	25.75		28.48
Ø 2015 – 2019	21.54	11.30	32.83	2.66	30.17	-	-

## Development of milk production costs 2012 – 2019 (in c/kg, without net investments)

Year	2012	2013	2014	2015	2016	2017	2018	2019 <sup>2</sup>	Ø 2015 – 2019
Production costs	31.04	35.07	30.54	25.75	26.75	29.53	34.61	34.21	30.17
Milk price*	31.52	38.43	37.14	28.60	26.09	34.78	32.87	31.26	30.72
Shortfall in c/kg	0.48	3.36	6.60	2.85	-0.66	5.25	-1.74	-2.95	0.55
Shortfall in %	2%	10%	22%	11%	-2%	18%	-5%	-9%	3%
MMI (index, base year = 2015)**	121	136	119	100	104	115	134	133	-

\* Source: Central Statistics Office Ireland, manufacturing milk prices (including VAT) at 3.7% fat and 3.3% protein, converted by BAL to kilograms of milk at 4% fat and 3.4% protein.  
 \*\* The Milk Marker Index (MMI) reflects the development of milk production costs.

## Price/cost ratio (shortfall)





## → Lithuania Milk production costs 2019

In 2019, milk production costs in Lithuania were 58.63 c/kg. In comparison, the average farm-gate milk price in the same year was only 28.79 c/kg. This means that 51% of the costs generated in dairy farms in Lithuania were not covered.

Over the last five years leading up to 2019, milk production costs in Lithuania were an average 45.41 c/kg. The costs for farming inputs and general operating costs alone amounted to an average 32.00 c/kg. However, the average revenue from the milk price was only 28.07 c/kg. This means that Lithuanian dairy farms were unable to cover even their paid costs without the applicable CAP payments. A net income of 10.30 c/kg was only

generated thanks to these EU payments. However, this income is only about 37% of labour costs as per the income variable.

The income variable for 2019 was calculated on the basis of an average hourly wage of 8.76 euros including employer contributions (2018: 6.33 euros), and was derived by doubling the minimum wage. In 2019, it was 10.72 cents higher than in 2018.

The study on milk production costs in Lithuania was commissioned by the Lithuanian Ministry of Agriculture.

### Overview of milk production costs in 2019<sup>2</sup>

#### Cost items

	in c/kg
Purchased feed	5.31
Fodder production (seeds, fertilizers, plant protection products, other)	3.41
Livestock costs (veterinary costs, insemination, etc.)	2.81
Building & machinery upkeep	4.39
Energy	3.98
Contract work	0.57
Wages paid	3.15
Other farming overheads	2.35
Rent paid	1.33
Depreciation	14.51
Interest and taxes	0.71
<b>- Production value of beef</b>	<b>- 6.56</b>
<b>= Paid costs of milk production (for collected milk only)</b>	<b>= 35.96</b>
<b>+ Income variable (labour costs)</b>	<b>38.64</b>
<b>= Total costs</b>	<b>= 74.60</b>
<b>- CAP payments</b>	<b>- 15.97</b>
<b>= Milk production costs</b>	<b>58.63</b>
<b>+ Net investments (10-year average)</b>	<b>3.37</b>
<b>= Milk production costs including net investments</b>	<b>= 62.00</b>



### Development of net investments 2009 – 2018 (in c/kg, FADN 2018)

Year	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Ø 10 years
Gross investments	9.06	11.42	11.71	9.86	13.73	9.92	9.74	16.57	12.18	16.59	12.08
Net investments (without depreciation)	3.53	4.78	4.40	2.07	5.29	0.21	1.42	5.34	1.99	4.65	3.37

## Composition of milk production costs 2015 – 2019 (in c/kg, FADN 2018)

Year	Paid costs	+ Income variable	= Total costs	- CAP payments	= Production costs	+ Net investments (Ø 2009 – 2018)	= Costs + net investments
2019 <sup>2</sup>	35.96	38.64	74.60	15.97	<b>58.63</b>	<b>3.37</b>	62.00
2018	35.07	27.92	62.99	15.97	<b>47.02</b>		50.39
2017	31.14	26.48	57.62	12.86	<b>44.76</b>		48.13
2016	31.36	24.53	55.89	15.34	<b>40.55</b>		43.92
2015	26.46	20.64	47.10	11.00	<b>36.10</b>		39.47
Ø 2015 – 2019	<b>32.00</b>	<b>27.64</b>	<b>59.64</b>	<b>14.23</b>	<b>45.41</b>	-	-

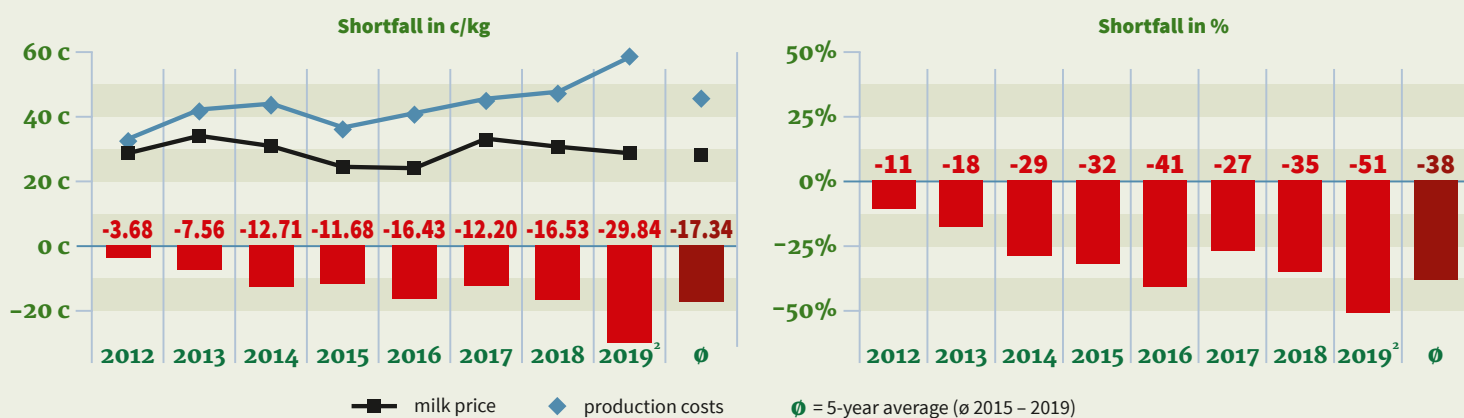
## Development of milk production costs 2012 – 2019 (in c/kg, without net investments)

Year	2012	2013	2014	2015	2016	2017	2018	2019 <sup>2</sup>	Ø 2015 – 2019
Production costs	32.54	41.66	43.46	36.09	40.55	44.75	47.02	58.63	45.41
Milk price*	28.86	34.10	30.75	24.41	24.12	32.55	30.49	28.79	28.07
Shortfall in c/kg	<b>-3.68</b>	<b>-7.56</b>	<b>-12.71</b>	<b>-11.68</b>	<b>-16.43</b>	<b>-12.20</b>	<b>-16.53</b>	<b>-29.84</b>	<b>-17.34</b>
Shortfall in %	<b>-11%</b>	<b>-18%</b>	<b>-29%</b>	<b>-32%</b>	<b>-41%</b>	<b>-27%</b>	<b>-35%</b>	<b>-51%</b>	<b>-38%</b>
MMI (index, base year = 2015)**	90	115	120	100	112	124	130	162	-

\* Source: For 2012 – 2018: FADN (milk prices); for 2019: MMO of the EU, Statistics Lithuania – Official Statistics Portal, <https://osp.stat.gov.lt>.

\*\* The Milk Marker Index (MMI) reflects the development of milk production costs.

### Price/cost ratio (shortfall)





## → Luxembourg Milk production costs 2019

In 2019, milk production costs in Luxembourg were 42.33 c/kg. This means that milk production costs have not decreased in the last seven years, in spite of further intensification of dairy farming and, at the same time, an increase in total production (25% increase in size of dairy herd and 10% increase in milk production). In fact, the shortfall reached 22% in 2019 because milk prices have also decreased since 2017.

The average costs for farming inputs and general operating costs (paid costs) between 2015 and 2019 amounted to 38.16 c/kg. The farm-gate milk price in this period, however, was only an average 31.46 c/kg. With the addition of CAP payments

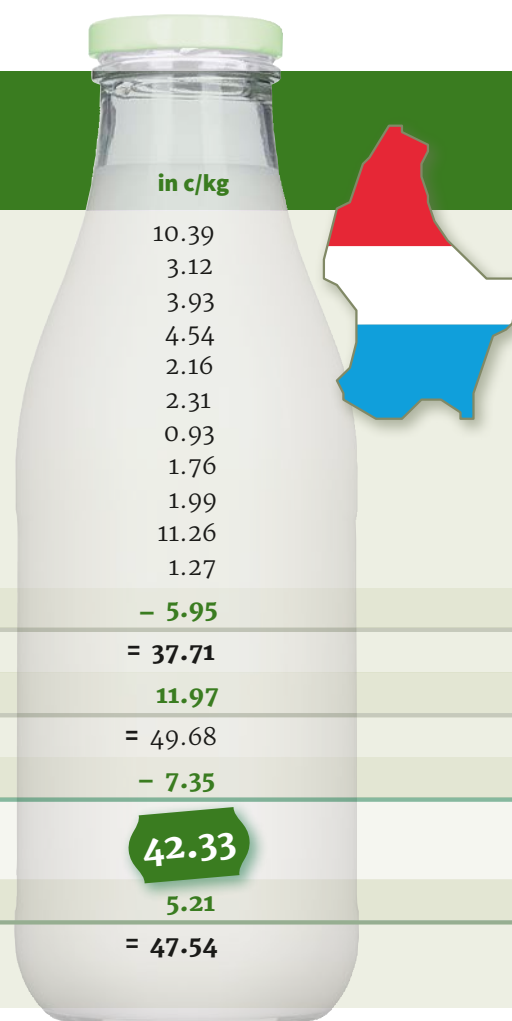
(7.48 c/kg), dairy farmers in Luxembourg could just about break even with their paid costs. An average dairy farm in Luxembourg was left with a meagre 0.77 c/kg in hand from milk production. This is not even 7% of labour costs as per the income variable.

The income variable was calculated on the basis of an hourly wage of about 28.30 euros (including employer contributions).

### Overview of milk production costs in 2019<sup>2</sup>

#### Cost items

	in c/kg
Purchased feed	10.39
Fodder production (seeds, fertilizers, plant protection products, other)	3.12
Livestock costs (veterinary costs, insemination, etc.)	3.93
Building & machinery upkeep	4.54
Energy	2.16
Contract work	2.31
Wages paid	0.93
Other farming overheads	1.76
Rent paid	1.99
Depreciation	11.26
Interest and taxes	1.27
<b>- Production value of beef</b>	<b>- 5.95</b>
<b>= Paid costs of milk production (for collected milk only)</b>	<b>= 37.71</b>
<b>+ Income variable (labour costs)</b>	<b>11.97</b>
<b>= Total costs</b>	<b>= 49.68</b>
<b>- CAP payments</b>	<b>- 7.35</b>
<b>= Milk production costs</b>	<b>42.33</b>
<b>+ Net investments (10-year average)</b>	<b>5.21</b>
<b>= Milk production costs including net investments</b>	<b>= 47.54</b>



### Development of net investments 2009 – 2018 (in c/kg, FADN 2018)

Year	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Ø 10 years
Gross investments	11.48	11.93	17.22	21.97	21.86	27.29	12.26	10.04	11.54	11.05	15.66
Net investments (without depreciation)	1.07	0.73	6.63	11.46	10.71	16.08	2.27	0.33	1.34	1.49	5.21

## Composition of milk production costs 2015 – 2019 (in c/kg, FADN 2018)

Year	Paid costs	+ Income variable	= Total costs	- CAP payments	= Production costs	+ Net investments (Ø 2009 – 2018)	= Costs + net investments
2019 <sup>2</sup>	37.71	11.97	49.68	7.35	42.33	5.21	47.54
2018	38.28	11.45	49.73	7.35	42.38		47.59
2017	39.37	11.05	50.42	7.74	42.68		47.89
2016	37.28	12.46	49.74	7.31	42.43		47.64
2015	38.16	12.42	50.58	7.64	42.94		48.15
Ø 2015 – 2019	38.16	11.87	50.03	7.48	42.55	-	-

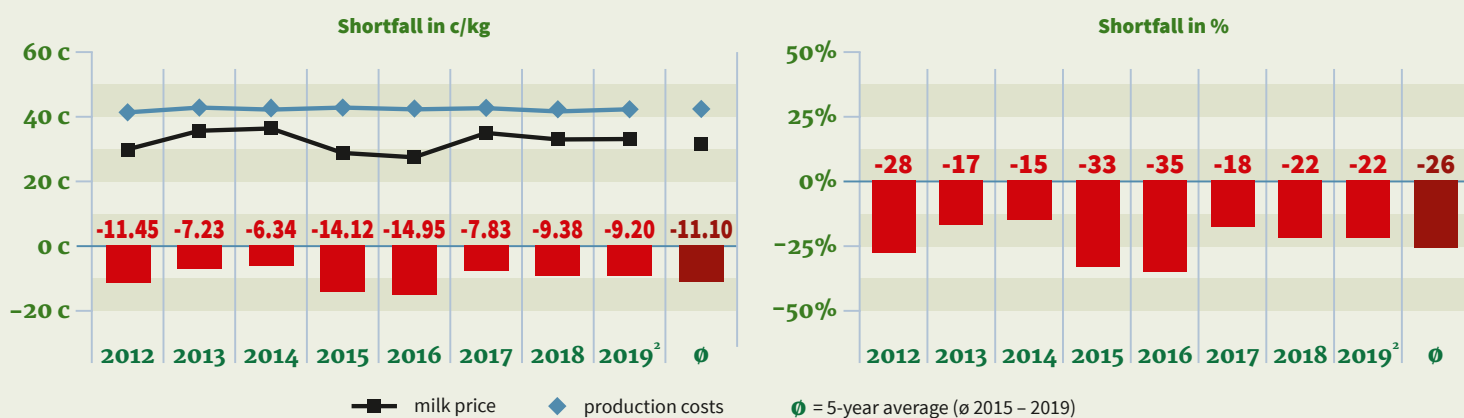
## Development of milk production costs 2012 – 2019 (in c/kg, without net investments)

Year	2012	2013	2014	2015	2016	2017	2018	2019 <sup>2</sup>	Ø 2015 – 2019
Production costs	41.39	42.92	42.73	42.94	42.43	42.68	42.38	42.33	42.55
Milk price*	29.94	35.69	36.39	28.82	27.48	34.85	33.00	33.13	31.46
Shortfall in c/kg	-11.45	-7.23	-6.34	-14.12	-14.95	-7.83	-9.38	-9.20	-11.10
Shortfall in %	-28%	-17%	-15%	-33%	-35%	-18%	-22%	-22%	-26%
MMI (index, base year = 2015)**	96	100	100	100	99	99	99	99	-

\* Source: SER Luxembourg, converted by BAL to 4% fat and 3.4% protein.

\*\* The Milk Marker Index (MMI) reflects the development of milk production costs.

## Price/cost ratio (shortfall)



## → Netherlands Milk production costs 2019

In 2019, producing one kilogram of milk in the Netherlands cost 44.54 c/kg. With an average milk price of only 32.75 c/kg, farms had to deal with a shortfall of 26%.

In the last five years leading up to 2019, farm-gate milk prices were an average 32.15 c/kg. With the applicable CAP payments (1.80 c/kg), Dutch dairy farms generated an average revenue of 33.95 c/kg. The shortfall to simply cover their paid costs (costs of farming inputs and general operating costs) was thus 1.93 c/kg. Paid costs over the last five years were an average 35.88 c/kg.

The average dairy farm in the Netherlands only makes an insignificant profit that barely allows it to survive and needs

write-offs to stay in business. As a result, investments on Dutch dairy farms have dropped sharply since 2015.

The income variable for labour costs on family farms was 9.21 c/kg in the last five years since 2015. It was calculated on the basis of an average hourly wage of 24.00 euros (including employer contributions).

### Overview of milk production costs in 2019<sup>2</sup>

#### Cost items

Purchased feed	11.58
Fodder production (seeds, fertilizers, plant protection products, other)	1.36
Livestock costs (veterinary costs, insemination, etc.)	4.18
Building & machinery upkeep	1.61
Energy	2.76
Contract work	2.60
Wages paid	1.16
Other farming overheads	2.46
Rent paid	2.03
Depreciation	5.46
Interest and taxes	3.49

- **Production value of beef**

- 1.81

= **Paid costs of milk production (for collected milk only)**

= 36.88

+ **Income variable (labour costs)**

9.24

= Total costs

= 46.12

- **CAP payments**

- 1.58

= **Milk production costs**

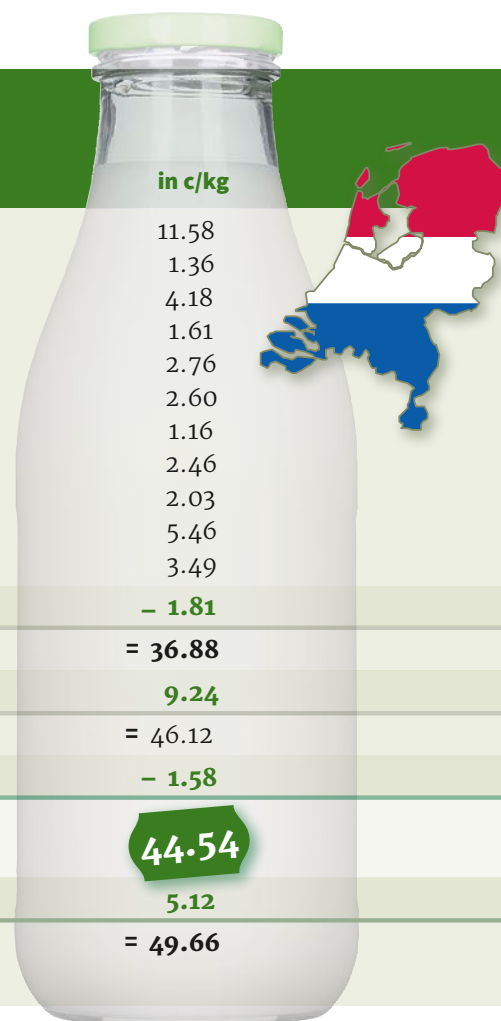
**44.54**

+ **Net investments (10-year average)**

5.12

= **Milk production costs including net investments**

= 49.66



### Development of net investments 2009 – 2018 (in c/kg, FADN 2018)

Year	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Ø 10 years
Gross investments	12.47	9.56	10.85	12.84	10.99	13.77	12.26	6.43	6.39	8.71	10.43
Net investments (without depreciation)	7.29	4.15	5.22	7.21	5.28	8.38	7.15	1.53	1.39	3.55	5.12

## Composition of milk production costs 2015 – 2019 (in c/kg, FADN 2018)

Year	Paid costs	+ Income variable	= Total costs	- CAP payments	= Production costs	+ Net investments (Ø 2009 – 2018)	= Costs + net investments
2019 <sup>2</sup>	36.88	9.24	46.12	1.58	<b>44.54</b>	5.12	49.66
2018	36.50	9.24	45.74	1.58	<b>44.16</b>		49.28
2017	35.76	9.14	44.90	1.70	<b>43.20</b>		48.32
2016	34.93	9.12	44.05	1.98	<b>42.07</b>		47.19
2015	35.32	9.31	44.63	2.17	<b>42.46</b>		47.58
Ø 2015 – 2019	<b>35.88</b>	<b>9.21</b>	<b>45.09</b>	<b>1.80</b>	<b>43.29</b>	-	-

## Development of milk production costs 2012 – 2019 (in c/kg, without net investments)

Year	2012	2013	2014	2015	2016	2017	2018	2019 <sup>2</sup>	Ø 2015 – 2019
Production costs	42.96	44.57	46.47	42.46	42.07	43.20	44.16	44.54	43.29
Milk price*	32.38	37.40	38.90	30.75	28.75	35.45	33.03	32.75	32.15
Shortfall in c/kg	<b>-10.58</b>	<b>-7.17</b>	<b>-7.57</b>	<b>-11.71</b>	<b>-13.32</b>	<b>-7.75</b>	<b>-11.13</b>	<b>-11.79</b>	<b>-11.14</b>
Shortfall in %	<b>-25%</b>	<b>-16%</b>	<b>-16%</b>	<b>-28%</b>	<b>-32%</b>	<b>-18%</b>	<b>-25%</b>	<b>-26%</b>	<b>-26%</b>
MMI (index, base year = 2015)**	101	105	109	100	99	102	104	105	-

\* Source: LEI 2020, farm-gate milk prices at 3.7% fat.

\*\* The Milk Marker Index (MMI) reflects the development of milk production costs.

## Price/cost ratio (shortfall)



## → EU average Milk production costs 2019

Milk production costs in the EU increased from 41.18 c/kg in 2015 to 45.35 c/kg in 2019. The average farm-gate milk price in 2019 was 34.52 c/kg, which means that there was a shortfall of 24%.

Over the last five years, milk production costs were an average 42.53 c/kg. From milk price and CAP payments combined, EU dairy farms generated a revenue of 36.01 c/kg in this period. The costs for farming inputs and general operating costs (paid costs) were an average 33.98 c/kg. The surplus of 2.03 c/kg covered only 17% of the reported income variable of 12.05 c/kg. Revenue generated through the milk price and

CAP payments is not enough to ensure an adequate income on dairy farms in Europe.

Milk production costs here were calculated on the basis of FADN averages for 26 EU Member States (excluding Greece and Cyprus, with the United Kingdom). For the countries that are not yet included in the cost study, the income variable was fixed at twice the national legal minimum wage. The income variable of 12.39 c/kg for 2019 was calculated on the basis of an average hourly wage of 19.85 euros including employer contributions (weighted average according to milk production volume).

### Overview of milk production costs in 2019<sup>2</sup>

#### Cost items

	in c/kg
Purchased feed	12.71
Fodder production (seeds, fertilizers, plant protection products, other)	2.60
Livestock costs (veterinary costs, insemination, etc.)	3.44
Building & machinery upkeep	3.41
Energy	2.83
Contract work	2.65
Wages paid	2.55
Other farming overheads	2.21
Rent paid	1.86
Depreciation	6.01
Interest and taxes	1.50

- **Production value of beef** = **5.35**

= **Paid costs of milk production (for collected milk only)** = **36.42**

+ **Income variable (labour costs)** = **12.39**

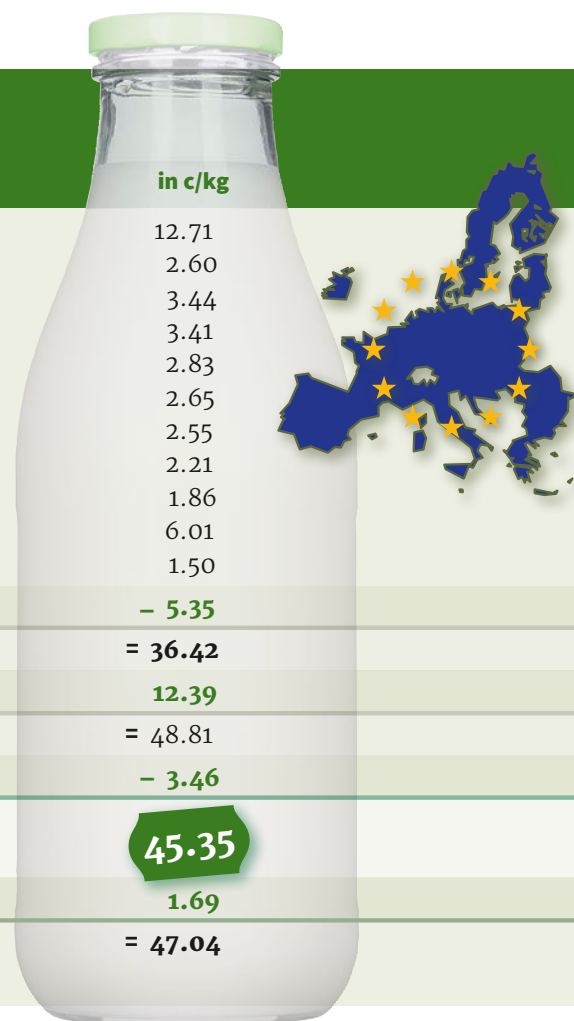
= **Total costs** = **48.81**

- **CAP payments** = **3.46**

= **Milk production costs** = **45.35**

+ **Net investments (10-year average)** = **1.69**

= **Milk production costs including net investments** = **47.04**



### Development of net investments 2009 – 2018 (in c/kg, FADN 2018)

Year	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Ø 10 years
Gross investments	7.29	6.82	7.41	8.26	8.04	7.72	6.29	5.50	6.52	7.15	7.10
Net investments (without depreciation)	1.96	1.31	1.96	2.66	2.06	2.22	1.10	0.37	1.34	1.88	1.69



## Composition of milk production costs 2015 – 2019 (in c/kg, FADN 2018)

Year	Paid costs	+ Income variable	= Total costs	- CAP payments	= Production costs	+ Net investments (Ø 2009 – 2018)	= Costs + net investments
2019 <sup>2</sup>	36.42	12.39	48.81	3.46	45.35	1.69	47.04
2018	35.27	11.97	47.24	3.46	43.78		45.47
2017	32.72	12.38	45.10	3.55	41.55		43.24
2016	32.41	11.98	44.39	3.60	40.79		42.48
2015	33.10	11.55	44.65	3.47	41.18		42.87
Ø 2015 – 2019	33.98	12.05	46.04	3.51	42.53	-	-

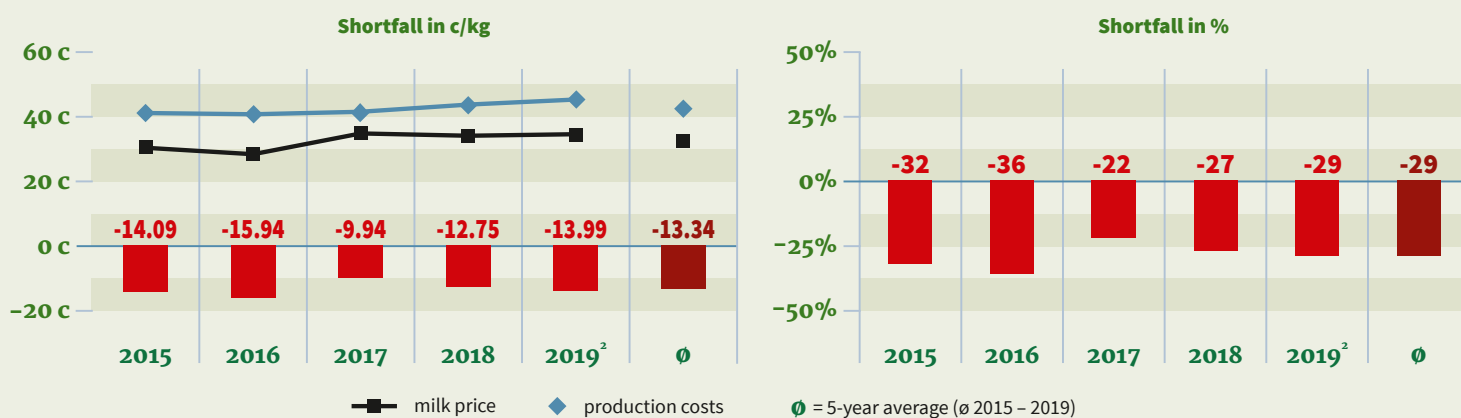
## Development of milk production costs 2012 – 2019 (in c/kg, without net investments)

Year	2015	2016	2017	2018	2019 <sup>2</sup>	Ø 2015 – 2019
Production costs	41.18	40.79	41.55	43.78	45.35	42.53
Milk price*	30.60	28.43	34.86	34.11	34.52	32.50
Shortfall in c/kg	-10.58	-12.36	-6.69	-9.67	-10.83	-10.03
Shortfall in %	-26%	-30%	-16%	-22%	-24%	-24%
MMI (index, base year = 2015)**	100	99	101	106	110	-

\* Source: MMO of the EU 2020, natural fat and protein contents.

\*\* The Milk Marker Index (MMI) reflects the development of milk production costs.

## Price/cost ratio (shortfall)



# Cost study – Methodology and data

**T**he cost calculations are based on official data. It is **accounting data for specialist dairy farms** published in the **EU Farm Accountancy Data Network (FADN)**. This data is collected and verified by national liaison agencies (usually research institutes of the Member States' Ministries of Agriculture) and then forwarded to the European Commission.

The FADN and the sample of agricultural holdings on which it is based is the only **representative data** source that provides economic and structural figures about commercial agricultural holdings in the EU. The calculations commissioned by the EMB are based on the same sources also used by the EU for their agronomic analyses.

The sample of holdings included in the FADN is chosen so as to provide a representative and realistic picture of the economic structures of dairy farms. In addition to farm structural characteristics (number of people working on the farms, area, herd size, livestock units, etc.), the FADN also includes important figures from the farms' profit and loss statement. Thus, all key variables for specific and non-specific costs are available and are considered in the cost calculations (see *Overview 1*, pp. 38/39).

The used data is only representative for commercial specialist dairy farms. This means that the study consciously excludes smaller mixed farms focused on milk production as well as part-time farms.

## **The importance of timely and regular data**

The availability of **timely, regular data** and cross-cutting analyses on cost developments is very important to the dairy farmer associations in the EMB. Only with this kind of information is it possible for them to rapidly react to political developments concerning the agricultural sector. This information is becoming increasingly important for active farms to be able to orient their production strategies to the **economic reality**. If they are part of a producer organisation, this information can help them as well demand prices based on this economic reality when negotiating with milk buyers.

*Knowledge about production costs is a fundamental requirement from a business point of view. But it should also be possible to base price negotiations on the development of costs. However, this is where a major issue lies: dairies and farmers usually do not agree on prices in advance. **It is almost impossible for dairy farmers to negotiate a price with a dairy that is actually based on production costs. Farmers are ultimately paid whatever processing facilities can spare.** If supply outstrips demand and dairies see their revenues shrink, dairy farmers end up bearing the brunt of these losses. At the same time, it is difficult for milk producers to control supply because there are no overarching, common market mechanisms in place.*

**The EU also regularly publishes data about the cost situation of dairy farms.** This data serves as an important tool for political institutions in their decision-making and strategy development. The EU Dairy Farms Report published by the European Commission provides information about the economic situation of EU dairy farms. However, **up to recently** there were **major shortcomings in terms of timeliness of data**. Until the beginning of 2021, the latest available EU Dairy Farms Report was the one published in 2018, which only presented results for 2016 and a very limited trend analysis of costs for the year 2017. Based on FADN 2017 and 2018 data, only information on the development of paid costs and profit margins of dairy farms had been published so far (EU Agricultural and Farm Economics Briefs, number 17 and 18). More recently, the EU Commission has published a **web-based dashboard on costs, margins and income of specialist dairy farms in the EU** from 2008 to 2018, including trends for 2019<sup>3</sup>. The data of the dashboard is based on the FADN and the calculations are based on the method developed by the European Commission's Directorate-General for Agriculture and Rural Development (DG AGRI).

<sup>3</sup> See: <https://agridata.ec.europa.eu/extensions/DairyReport/DairyReport.html>

### Extrapolating production costs to 2019

An analysis of the EU accounting data in its current form is not enough to provide a timely cost overview. Until 2016, data was only available for a period dating back three years. While the EU now provides preliminary data for a more recent period (in 2020 for the accounting year 2018), this still does not allow for an up-to-date representation of costs. In order to provide a **timely as well as regularly-updated cost calculation**, the BAL has developed an **extrapolation method**. This method is based on FADN data as well as on the price indices for key agricultural inputs in milk production, which are regularly published by Eurostat. They include seeds, fertilizers, plant protection products, purchased feed, building and machinery upkeep as well as energy and the production value of beef. The extrapolation mathematically simulates how dairy farms

have modified their spending behaviour due to price changes by looking at similar price situations in the past.

### Labour costs – sufficient recognition is the need of the day

Being a dairy farmer today is a demanding task. Not only does this profession require **specialised knowledge** about animal rearing, crop and fodder cultivation, as well as maintenance of highly technical and sensitive machines and equipment; **business management skills** are also necessary to be able to run a dairy farm. This profession also comes with the responsibility of producing high-quality milk for consumers and other users. Furthermore, the necessary constant care for animals is **very labour-intensive**.

**Table 8: References used for an appropriate valuation of family workers**

Country	Reference system*
<b>Belgium</b>	Wage categories chosen according to the qualifications of the farm manager and family workers, based on the basic wage set by the Auxiliary Joint Committee for Employees, CP 200, classes B and D.
<b>Denmark</b>	National collective agreements in the agricultural sector: wage group for managerial functions (farm manager) and basic wage for workers (family labour).
<b>France</b>	Two times the legal minimum wage ( <i>salaire minimum interprofessionnel de croissance – SMIC</i> ). In the case of France, the calculation of working time is based on the results of a representative study on working time in dairy farms in France, conducted by IDELE.
<b>Germany</b>	Collective agreements in the agricultural sector in the different federal states: wage group for managerial functions (farm manager) and basic wage for workers (family labour).
<b>Ireland</b>	Two times the legal minimum wage (according to the National Minimum Wage Act).
<b>Lithuania</b>	Two times the legal minimum wage ( <i>minimaliojo darbo</i> ).
<b>Luxembourg</b>	Based on the social minimum wage in Luxembourg. The hourly rate for a higher wage group (wage group 6 for an agricultural master – <i>Landwirtschaftsmeister</i> ) is determined on the basis of the agricultural collective agreement of Baden-Württemberg, Germany.
<b>Netherlands</b>	System of job valuation based on market information about the remuneration of agricultural employees (employers' association).
<b>EU average</b>	Two times the legal minimum wage or collective agreements in the agricultural sector of the different countries.

\* Detailed information on the calculation method is available in the national reports at: <https://www.europeanmilkboard.org/en/milk-production-costs.html>

**Technical cost studies** deal with the reporting of labour costs in milk production in very different ways. There are different approaches to the valuation of labour. However, the chosen methods often do not represent an appropriate benchmark from the point of view of dairy farmers. The value of labour is usually assigned using a generic standard for an hour of work that, nonetheless, **does not consider qualifications or actual field of work**. For example, the European Commission equates the value of an hour of work by a self-employed dairy farmer with that of external labour hired to work on the farm, and thus calculates it based on the farm’s spending in terms of wages and imputed labour costs. However, there is no differentiation between the kind of employment and level of qualification nor the field of work (e.g. seasonal workers, temporary help for simple tasks, etc.). As a result, past experiences have shown that the imputed labour costs often have **not even been in line with the minimum wage**.

The majority of dairy farms are family-run and the required work is carried out by family members. Therefore, it is important to determine an appropriate benchmark to decide on the value of their work. In the cost calculations commissioned by the EMB, the labour costs of self-employed dairy farmers are determined using an **income variable specific to these cost studies**. The nationally applicable **collective agreements** of

the agricultural sector or the **minimum wage (multiplied by two)** of the country in question are used as a benchmark to determine the value of an hour of work carried out by the farm manager and the contributing family members (see *Table 8*, p. 35). Employer contributions are also included in the income variable because dairy farmers would have to bear these costs if they were to hire someone instead. Collective agreements lend themselves very well to such a **differentiated valuation** of labour costs on farms **on the basis of qualifications and area of responsibility**. Not only is their method recognised, they also represent standards for the valuation of labour adopted collectively by self-employed farmers in their role as employers with employees.

**How many hours does it take to run a dairy farm?**

To answer this question, **no appropriate recording of working time** is currently available. Therefore, the cost calculations have stuck to the **standards set by the FADN and the national farm accountancy networks** (see *Table 9*). However, these set working hours are not derived from real recordings of working time. They are usually based on the nationally-agreed working time per Family Work Unit (FWU). As the study is based on the reference system chosen by the European Commission, a very different number of working hours is used as the basis to calcu-

**Table 9: Working hours of family workers determined by the European Commission (FADN 2018)**

Country	Number of family workers (in FAWU <sup>*</sup> )	Total working hours (for all FAWU <sup>*</sup> )	Working hours per FAWU <sup>*</sup>
Belgium	1.86	5,042	2,711
Denmark	1.21	2,558	2,114
France	1.65	2,647	1,604
Germany	1.48	3,487	2,356
Ireland	1.38	3,270	2,369
Lithuania	1.38	3,047	2,208
Luxembourg	1.61	3,555	2,208
Netherlands	1.63	3,885	2,384
EU average <sup>**</sup>	1.52	3,392	2,231

\* FAWU = Family Annual Work Unit.

\*\* The results for the EU average refer to 26 EU Member States, excluding Greece and Cyprus, with the United Kingdom.

**Table 10: Working hours and income variables used in the BAL cost calculations 2018/2019**

Country	Hours by farm manager	Hours by family workers	Imputed hourly rate*	Income variable in c/kg	Percentage of income from milk production
Belgium	2,711	2,331	26.08 €	17.46	83%
Denmark	2,144	444	30.06 €	3.61	85%
France	2,441	1,587	26.66 €	17.56	76%
Germany	2,356	1,131	22.50 €**	12.73	75%
Ireland	2,369	900	22.66 €	12.07	80%
Lithuania	2,208	839	8.76 €	38.64	77%
Luxembourg	2,208	1,347	28.30 €	11.97	73%
Netherlands	2,384	1,502	24.00 €	9.24	87%
EU average***	2,231	1,160	19.85 €	15.55	80%

\* Hourly rate (including employer contributions) used to calculate the income variable.

\*\* Weighted according to hourly rates set by collective agreements in the federal states.

\*\*\* The results for the EU average refer to 26 EU Member States, excluding Greece and Cyprus, with the United Kingdom.

late labour costs in the different countries. A direct comparison of labour costs between countries is, therefore, not possible.

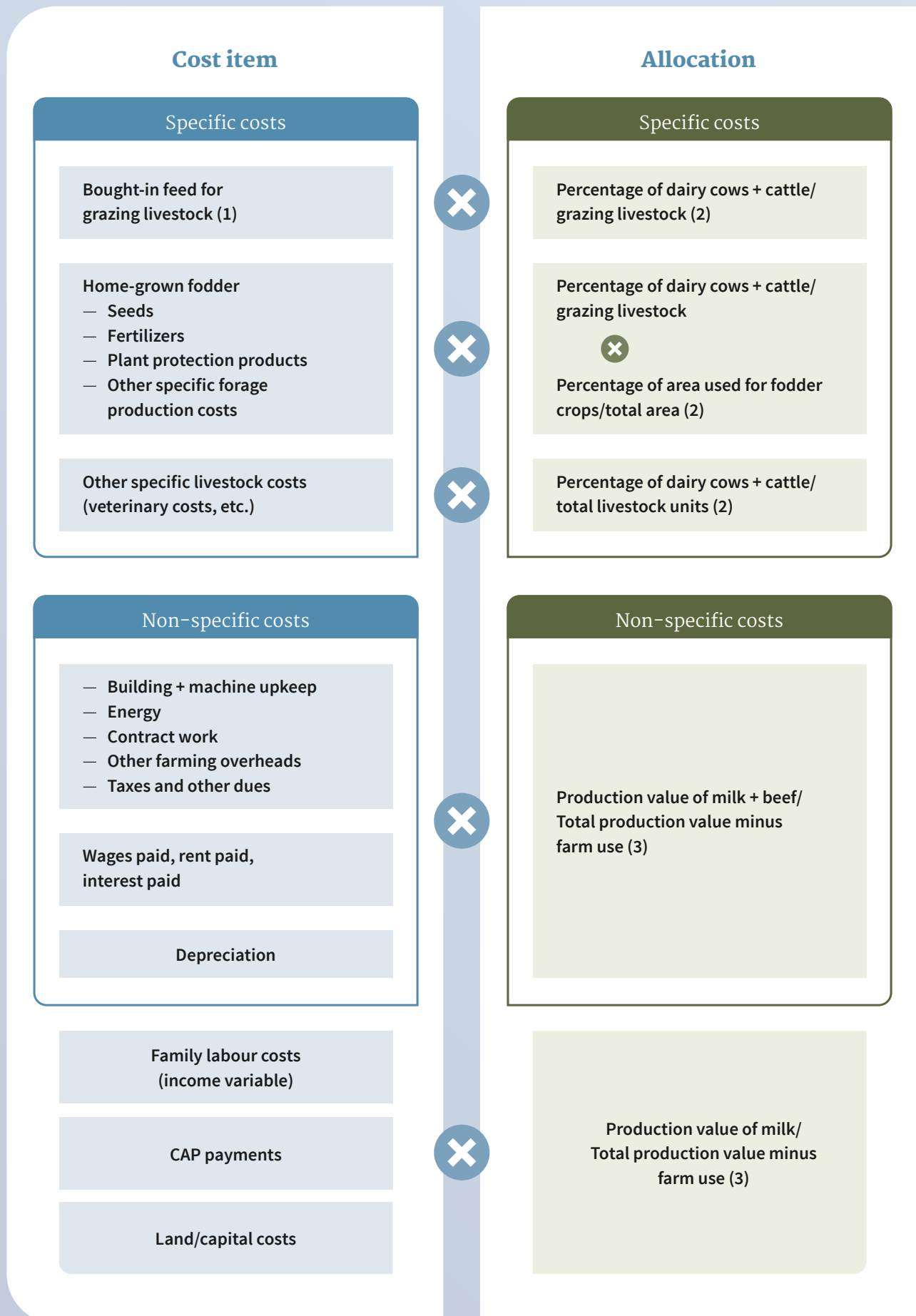
The number of working hours set for French dairy farmers in the FADN, in particular, is significantly below that of the other EU countries because a working time of 35 hours per week is the norm in France. A family worker in the agricultural sector in France is only assigned about 1.500 hours per year. Therefore, in the French cost calculation the data on working time is based on a study conducted by **IDELE France**. The BAL's cost calculations assume that the farm manager is a full-time employee on the dairy farm. The additional working hours are assigned to family workers.

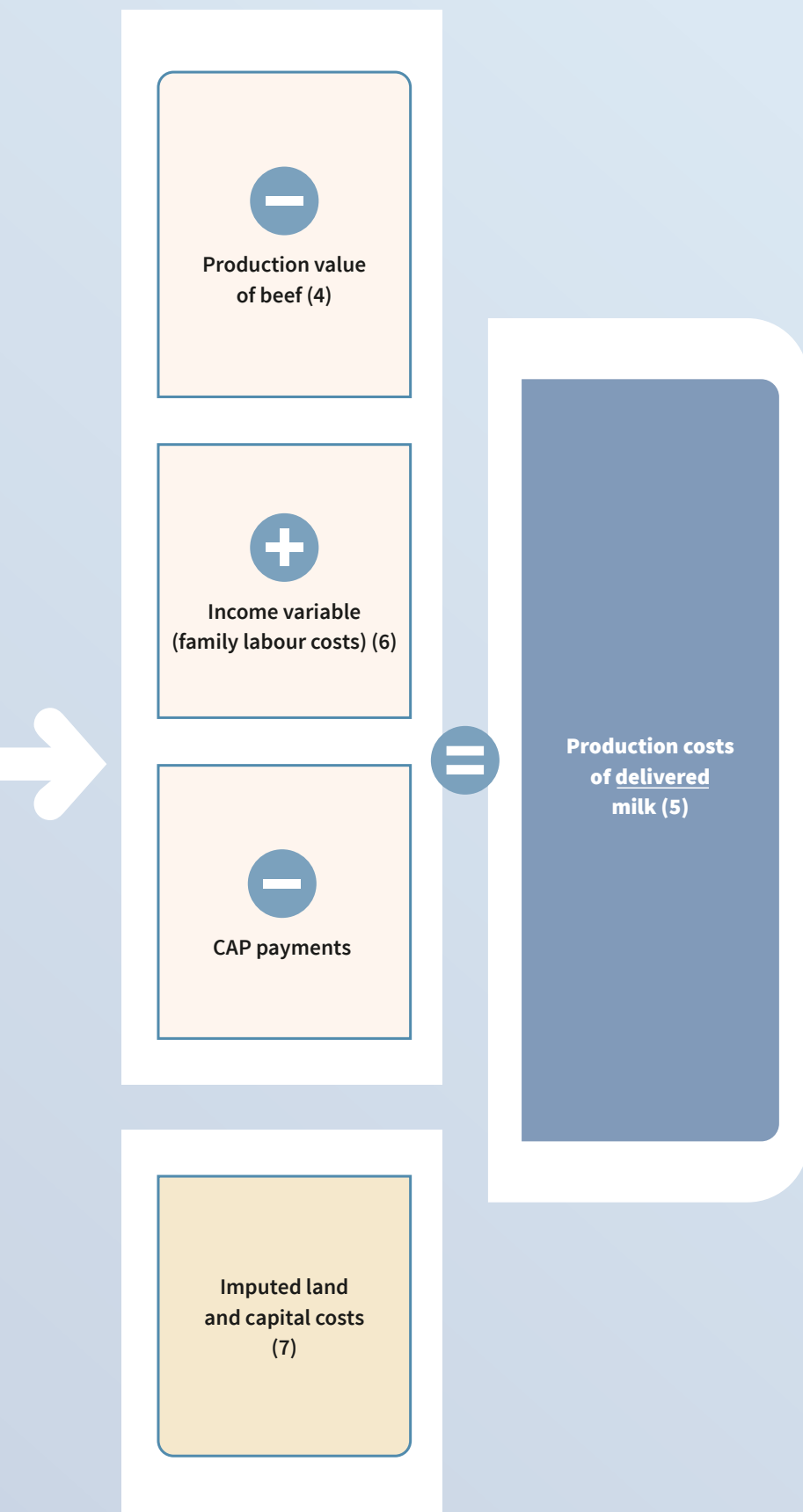
Calculated using the outlined base rates, the derived **hourly wages** are presented in *Table 10*. These hourly rates are the basis

for the calculation of the income variable and are eventually **converted to a kilogram of milk**. FADN records the number of working hours for the farm as a whole. Therefore, the BAL's cost calculations **only consider the percentage of labour costs that result from milk production** (see *Overview 1*, pp. 38/39). The considered percentage is, at the end of the day, dependent on the different degrees of dairy farm specialisation in the countries.

For further information on the methodology, please contact the BAL – Bureau for Rural Sociology and Agriculture ([www.landforscher.de](http://www.landforscher.de)).

## Overview 1: Diagram for reporting of milk production costs Adjustments to FADN/EU





## Adjustments/Legend

- 1: The cost of bought-in feed is derived from the total costs for grazing livestock. The EU uses individual figures.
- 2: The allocation of costs for bought-in feed and home-grown fodder as well as other specific livestock costs refer to all cattle on the farm. The EU refers to the number of dairy cows.
- 3: The allocation for these cost groups is derived by dividing the production value of milk (and beef) by the total production value minus farm use.  
  
The EU also includes CAP payments linked to milk production and total CAP payments in this allocation, but does not include beef.
- 4: The EU system does not deduct the production value of beef.
- 5: The costs are calculated for delivered milk and not the farm's total milk production (as is done by the EU).
- 6: Income variable: in the present study, an independent variable was used to calculate the labour costs of self-employed farmers.
- 7: The imputed land and capital costs are indicated separately from total milk production costs.

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