

## EUROPEAN DAIRY FARMERS: MORE THAN 20 YEARS OF INTERNATIONAL COMPARISONS AND KNOWLEDGE EXCHANGE

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**A b s t r a c t:** Dairy production systems vary inside a country and among different countries in Europe. Depending on production factors, different dairy farming strategies have developed, influencing production costs of dairy farms. Alongside regional aspects, the competences of the farm manager or owner have an important impact on the economic success of a dairy farm. A combination of both regional and individual aspects influence the competitiveness of individual dairy farms in a region but also of dairy production as a whole production sector between regions or countries. For more than 20 years now, the EDF has been providing information and knowledge as well as a platform of exchanging observations. Dairy farmers can make use of the network to find solutions for improving the effectiveness of production and at the same time lead to maintain or improve the competitiveness of the dairy enterprise.

### INTRODUCTION

Dairy production systems vary among one country and also among the different countries in Europe. Depending on site factors as for example landscape or labour availability different dairy farming strategies have developed over time, influencing production costs of dairy farms. Alongside regional aspects also the entrepreneurial expertise of the farm manager or owner has an important impact on the economic success of a dairy farm. A combination of both: regional and individual aspects influence the competitiveness of individual dairy farms in a region but also of dairy production as a whole production sector between regions or countries.

Already in 1988 scientific analysis explained the importance of detailed knowledge on regional and international competitiveness of dairy production for politicians and farmers in order to decide on efficient policy support and farming strategies. Therefore not only milk price information is relevant but also detailed information on different cost components is necessary in order to question:

- If production costs and revenues are basically equal to each other or if the current price does not level the production costs. Then changes in supply would have to be expected and would also influence prices.

- If differences in production costs base on different productivities or different factor prices.
- Which production factors are relevant for differences in productivity and whether a change in framework conditions can reduce production costs.
- If there are differences in production technology between countries and whether these advantageous production technologies could be adopted in other regions [Isermeyer1988].

The cost of production calculations and comparisons may then be used not only to describe regional or international differences but also for individual farmers to assess their own situation within the regional and international competition for market shares. Especially for dairy farmers, who tie up capital for a long time in cowshed constructions and similar equipment, good appraisals of one's own situation are important in order to invest efficiently [Isermeyer 1988]. Good decisions are important for business success. Those are based on sufficient information and knowledge.

In this context, farm-individual cost of production comparisons can be regarded as very valuable information sources. Comparative analyses not only inform farmers about their individual position in the competition but they can also help to identify differences (strong and weak points) and the reasons (cause-effect-relationships) for it. Based on the results of a comparative analysis measures to improve weak points of the business and to further develop strong points can be derived (see Schott 1950, Schott 1956, Endres 1968, Endres 1971, Endres 1980, and Erne 1971 for theoretical basics on the objectives and effects of comparative farm analysis).

To analyse cause-effect-relationships and to derive improvement measures especially the direct exchange of first-hand information and knowledge between farmers is most effective as the farmers know their figures and the supporting business processes best. By this type of knowledge exchange also crucial implicit knowledge can be transferred. Moreover, improvements can be realised faster as own 'research costs' can be reduced: Learning from the success and failures of others is more efficient than learning by trial and error (connected with a high risk for the business success). In particular, if farm comparisons and knowledge exchange are not restricted to a small region but organised nationwide or on an international level the effect is enhanced. Firstly, there are more points for optimization as more alternatives in the production system and more business strategies are available [Isermeyer1988]. Secondly, a direct competitive relationship between the participants can be ruled out, meaning there is a greater confidence to provide internal figures and details, to disclose own strengths and weaknesses and to share information about crucial managerial backgrounds.

#### FOUNDATION OF EUROPEAN DAIRY FARMERS IN 1989

Following these arguments and reviewing the additional results gained from the analysis of production costs in Europe, Canada and New Zealand, the German Agricultural Society (DLG) and Dr. Folkhard Isermeyer (University of Goettingen, Germany) decided to found a club for leading milk producers in the EU (at that time still "EC"). By exchanging data and experiences among the club members the goal was to contribute to the technological, social and economic progress of the joining dairy farmers [EMP 1989].

The first steps have been achieved at the "Tier and Technik" exhibition – today called "Eurotier Exhibition" in November 1989, held in Frankfurt/Main, Germany, where five farmers from different countries (FR, DK, UK, NL, and IE) presented their farms and discussed about their strong and weak points in the farming strategy. Next to the inten-

sive exchange of ideas about farming strategy also a tour on the exhibition was scheduled focusing on the presentation of new technologies: the first milking robot. At that time all discussion papers were translated into German, English and French.

In autumn 1990 the club of European Dairy Farmers (EDF) was officially founded in Stoneleigh, United Kingdom, at its first international meeting. The first president of EDF was Bram Prins, a Dutch dairy farmer, who was elected by the 29 EDF members the Club had at that time (10 NL, 7 UK, 5 DE, 4 BE, 2 DK, 1 IE). The members decided that English should become the only club language.

To assist the growing national groups of farmers, in 1995, a Scientific Team of Analysis and Research (EDFSTAR) was founded. For each country, one scientist or advisor took the responsibility to organise the national group activities and to assist with the data collection and analysis. Prof. Dr. Folkhard Isermeyer became the President of this scientific working group (by then director of the Institute of Farm Economics at the Federal Agricultural Research Centre, today Thünen Institut, Brunswick, Germany).

#### ANNUAL ANALYSIS OF COST OF PRODUCTION IN INDIVIDUAL DAIRY FARMS

Until today the goal of the club has been to offer a platform for international exchange and knowledge transfer among dairy farmers, based on a structured and homogeneous data base and on the experience and knowledge of the participants. The Cost of Production Comparison (CoP) still is one core product of EDF as its results are the basis for intensive discussions between farmers about competitiveness of single farms, on a national and international level.

EDF has developed a standardised method of calculating farm-individual costs of milk production from a farm's profit and loss account, balance sheet and additional information on production system and factor input. Total costs of dairy production always consider full economic costs, including opportunity costs for family labour, own land and equity fixed in farm assets. The standard currency of the EDF comparison is the Euro. Non-Euro currencies are converted into Euros using the average annual exchange rate relating to the period analysed. To make farms comparable despite different milk qualities the farms' individual milk output is standardised with regard to the same energy content (= ECM with 3.4% protein, 4% fat). Standardised CoP results are then comparable as well among national groups as also among individual farms.

EDF farms participating in the CoP are neither representative for Europe nor for individual countries, but allow a deeper insight into the strategies and results of future-oriented European dairy farms under different site conditions. The number of participants differs from country to country. National EDF groups represented by a large number of farms in the sample usually are the Netherlands, Germany, France, and Poland.

#### ANALYSIS OF THE EDFCOP: AN EXAMPLE

Research focused within the CoP differs from year to year. In view of the large range in labour prices dairy farms face across Europe the CoP 2011 analysis e.g. focused on the question whether dairy farmers can compensate higher labour prices by adjusting their production and management system. Therefore 279 EDF farms (accounting period starting

in the 2<sup>nd</sup>, 3<sup>rd</sup> or 4<sup>th</sup> quarter of 2009 or in the 1<sup>st</sup> quarter of 2010) were grouped according to the farm-individual level of labour prices they face (based on quarters of distribution):

- Group A:  $\leq 10.6$  EUR/labour hour,  $\bar{\emptyset}$  5.1 EUR/labour hour,
- Group B:  $>10.6$  up to  $\leq 14.7$  EUR/labour hour,  $\bar{\emptyset}$  13.0 EUR/labour hour,
- Group C:  $>14.7$  up to  $\leq 19.0$  EUR/labour hour,  $\bar{\emptyset}$  16.6 EUR/labour hour,
- Group D:  $> 19$  EUR/labour hour,  $\bar{\emptyset}$  20.1 EUR/labour hour.

The farm-individual labour price took into consideration the remuneration sought for family labour units working on the farm, as well as the real expenses for any hired labour units employed. As manual work can potentially be replaced by the usage of machinery or an adequate design of buildings and installations, not only the pure labour costs per kg of milk for family and hired workers were considered but contractor costs as well as machinery and building/installation costs (maintenance, depreciation, interest costs) were taken into account in addition to estimated total labour related costs on the farms. In the following this cost complex will be called ‘labour-related costs’.

The analysis showed that farms with the lowest labour prices ( $\leq 10.6$  EUR per hour, mainly farms from Slovakia, Ukraine, Poland, Czech Republic) were operated with the highest labour input per cow ( $\bar{\emptyset}$  104 hours per cow, see Table 1) at no disadvantage to total labour-related costs per kg of milk ( $\bar{\emptyset}$  15.3 ct per kg ECM, see Figure 1). The clearly lower labour prices of 5.1 EUR per hour on group average obviously allowed this extensive resource input. Capital input per cow in machinery and buildings/installations was rather high in this group (but with a huge variation within the group). Barn capacity utilisation averaged for 85 % only. In view of the rather under-utilised resources one can imagine a potential for a further reduction in production costs.

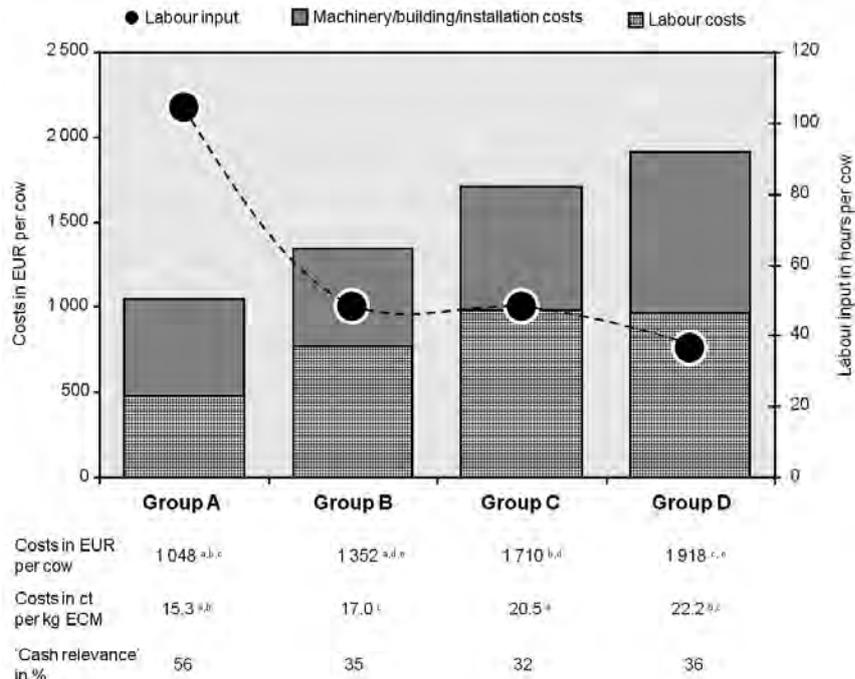
At higher labour prices ( $> 10.6$  to  $\leq 19$  EUR per hour, group B and C) farms reduced the labour input per cow up to a level of 48 hours on average and increased milk yield per cow as well. Within the two groups rising labour prices did not lead to a further lowering of labour input per cow. Farms in group C, moreover, showed a higher capital input in buildings and installations ( $\bar{\emptyset}$  2 818 against  $\bar{\emptyset}$  1 819 EUR per cow in group B) than farms in group B. However, average capital fixed in machinery was similar in both groups. Compared to the ‘low-price’ farms (group A) the more intensive use of resources and the higher yields could not balance the higher labour prices. Total labour-related costs per kg of milk increased (+ 1.7 and + 5.2 ct per kg ECM respectively).

The most successful farms in these two groups (B and C) in particular achieved a cost advantage by a major reduction in labour input per cow combined with a below-average capital input in machinery and buildings. A high utilisation rate in terms of the existing

Table 1. Key figures of the 279 EDF farms grouped by the level of farm-individual labour prices, group averages according to quarters of distribution

	Group A	Group B	Group C	Group D
Labour input, in annual labours per cow	104 <sup>a,b,c</sup>	48 <sup>a,d</sup>	48 <sup>b,e</sup>	37 <sup>c,d,e</sup>
Capital fixed in machinery [EUR/cow]	1450	952	967	1209
Capital fixed in buildings [EUR/cow]	2617 <sup>a</sup>	1819 <sup>b</sup>	2818 <sup>c</sup>	4978 <sup>a,b,c</sup>
Milk yield [kg ECM/cow]	7148 <sup>a,b</sup>	8146	8531 <sup>a</sup>	8793 <sup>b</sup>

Groups with same letters differ significantly, non-parametric tests



Groups with same letters (a,b,c) differ significantly, non-parametric tests

Figure 1. Labour input and labour related costs (per cow and per kg ECM) of the 279 EDF farms grouped by farm-individual level of labour prices, group averages

barn capacity (Ø 97 % and Ø 92 % respectively) is a basic prerequisite for the performance of all the farms in these two groups.

Farms with the highest labour prices (> 19 EUR per hour, mainly farms from Denmark, the Netherlands and Sweden, group D) further reduced manual work (Ø 37 hours per cow) mainly due to more capital invested (in particular in buildings/installations), meaning that they invested e.g. in automation technologies and new barns/barn equipment. Outsourcing of activities (e.g. field work) was a relevant issue as well. Cows' productivity was increased further in this group. By this strategy the farms prevented a further increase in pure labour costs, but capital costs rose quite steeply, leading to higher labour-related costs in total (+ 6.9 ct per kg ECM compared to the 'low-price' farms, group A). To achieve a better performance and keep costs at a reasonable level, higher utilisation rates of existing capacities (currently only at Ø 85 %) as well as further production intensification are urgently needed to balance the costs of capital-intensive farming systems. It has to be noted that this group includes quite a high proportion of Dutch farms in a 'special' situation: milk quota prices are still very high in the Netherlands (70 to 80 ct per kg). Some of the Dutch farms in the sample cannot fully utilise the barn capacity built in recent years as they do not have enough quota, and buying it is too expensive in view of the expiring of milk quotas in 2015.

Also the first preliminary results of latest CoP 2012 analysis showed the importance of efficient labour and capital input in the dairy enterprise for the success of European dairy farms: Among 166 European dairy farms in countries with rather similar produc-

tion systems and production intensities the 25% most profitable farms (according to EDF Entrepreneur's Profit I, excl. decoupled public payments) showed a lower labour input and less capital fixed per cow in machinery and buildings than the less profitable farms. However, the milk price was not the reason for differences in economic success between farms. Thus, what can be done on the individual farms to optimise labour processes to improve profitability and success?

There are many successful ideas floating around – independent from country or region in Europe. Because what can be learned year by year from the CoP results is that the differences in economic performance between farms within one national group are bigger than those between the national groups analysed:

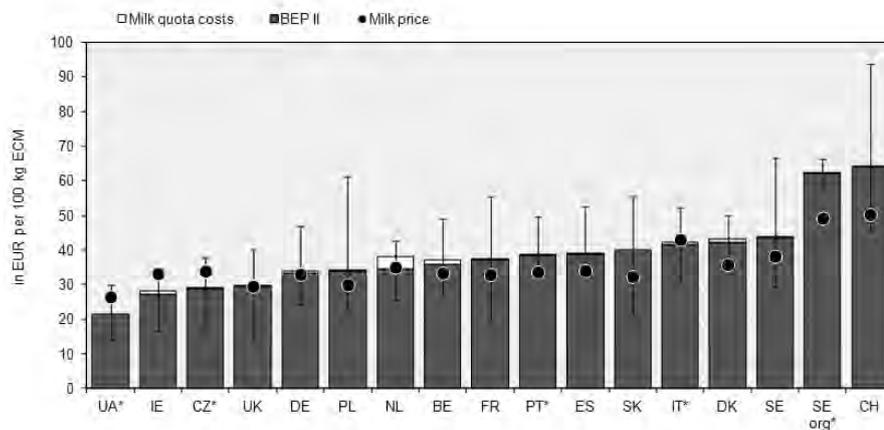


Figure 2. Average and range (min, max) of break-even-point II (BEP II = total costs excl. quota of the dairy enterprise minus related non-milk returns), average milk price received and average milk quota costs in selected national EDF groups (CoP 2012: farms with beginning of accounting period in the 2<sup>nd</sup>, 3<sup>rd</sup> or 4<sup>th</sup> quarter of 2010 or in the 1<sup>st</sup> quarter of 2011, \* = less than 10 farms in the national EDF group)

#### THE ANNUAL EDF CONGRESS = THE EVENT TO MEET AND EXCHANGE

The analysis above is only one example for the issues which are analysed and discussed with the members of the club on national and international level at several platforms which EDF provides:

- The annual EDF congress –year by year in another country – is probably the most important one. The number of congress delegates increased up to about 300 by the year 2012 and is still growing. The EDF congress is THE event for the club members to meet and exchange.
- To offer farmers also an exchange on up to date topics in-between the international meetings, “EDNews” developed as a club magazine, offers articles on different topics written by EDF farmers from different countries themselves and by agribusiness partners of the club. Regular meetings of the national groups complement this portfolio.

## MORE EDF PROJECTS FOR DEEPER ANALYSES OF THE DAIRY CONTEXT

As the EDF CoP shows interesting results, e.g. fluctuating feeding costs in the dairy business over time, EDF also focuses in smaller projects on additional detailed questions. Thus, for example the Input Price Comparison project (IPC) was founded – trying to analyse whether there are international differences in prices of means of production. At the same time – in cooperation with the Dutch LTO – EDF is analysing the output side by comparing milk prices of different European dairy processors in a homogeneous way.

Next to these additional projects EDF, together with the international network *agri benchmark*, created the forward looking “EDF-agri benchmark-Snapshot” – analysing future trends and developments not only among EDF members but among a larger group of interested farmers in important dairy regions in Europe and around the world. In 2011 more than 2,600 dairy farmers joined the survey.

## TO SUM UP: WHAT IS EDF ABOUT?

In order to work professionally on the farm’s success it is relevant to rank the own farm among competing farms and to know the strong and weak points. A look at past developments as well as an outlook at potential future developments is important, too, to understand the major contexts of dairy production. Only with adequate information and knowledge farmers are able to make decisions which ensure the long-term competitiveness of their business.

For more than 20 years now EDF has been providing information and knowledge as well as the platform to exchange: directly from farmer to farmer. The club offers the farmers a data-based orientation about their competitiveness within Europe as a basis for discussions and deeper analysis – compared to farms with similar side conditions and also compared to farms with other side conditions. Dairy farmers can make use of the network to learn and to continue their education with the objective to find measures for improvements to sustain or develop a successful dairy enterprise. Today, EDF has developed into a strong club with about 400 members from 20 countries who share for the benefit of all. This confirms the success of the EDF idea.

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EDF: PONAD 20 LAT MIĘDZYNARODOWYCH PORÓWNAŃ I WYMIANY WIEDZY

### Streszczenie

Systemy produkcji mleka różnią się wewnątrz kraju, a także występują różnice między krajami w Europie. W zależności od czynników produkcji rozwinęły się różne stosowane technologie produkcji wpływające na koszt prowadzenia gospodarstwa mleczarskiego. Poza uwarunkowaniami regionalnymi, istotny wpływ na odniesienie sukcesu w gospodarstwie mlecznym mają kompetencje jego zarządcy lub właściciela. Połączenie aspektów regionalnych i indywidualnych wpływa na konkurencyjność poszczególnych gospodarstw mlecznych w regionie, a także produkcji mlecznej całego sektora kraju. EDF jako stowarzyszenie od ponad 20 lat dostarcza informacji i wiedzy rolnikom, a także udostępnia platformę do wymiany spostrzeżeń. Rolnicy korzystają z sieci w celu znalezienia rozwiązań poprawiających efektywność produkcji, a tym samym prowadzących do utrzymania lub zwiększenia konkurencyjności przedsiębiorstwa mleczarskiego.

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