The DAIRYMAN-Sustainability-Index (DSI) as a possible tool for the evaluation of sustainability of dairy farms in Northwest-Europe

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1. Introduction

The Interreg IVB NWE project DAIRYMAN worked on the sustainability of dairy farms in a part of Europe where milk production is a main economic factor in agriculture. Moreover DAIRYMAN is focusing on the development, use and testing of practical tools which should be useful for the validation and evaluation of dairy systems and their potential sustainability. Selected tools should help scientists for measuring data and should also be used by extension services in order to clarify processes of dairy farming and to visualize progress in farm development. Reaching objectives in agriculture follows regularities which are well known from other areas of personal life, for example we can look here to successful sportsmen. “To formulate personal objectives and to measure the reached success after changing the targets is a main thing in agricultural work and this is a parallelism to the sport” (after Verena Bentele, 2013; multiple gold medal winner in Paralympics at the International Conference of agricultural extension services (IALB Conference in Karlsruhe)).

Sustainability includes - according to the definition of the Brundtland Commission - economic, ecological and social aspects. This means that sustainable dairy farms should be environmentally compatible, economically viable and socially responsible (a.o. Dubois, 2002). But how can the sustainable development of an individual farm be assessed and analyzed? And why is it useful?
The sustainability of dairy farms is determined by a multiplicity of single indicators like energy use, nutrient balances, economic stability, biodiversity etc. . Most of them are well known and their significance for dairying is principally clear. Various publications described this multiplicity in the last years. Representative among others are Breitschuh et al., 2001; Girardin, 2001; Kopfmueller et al., 2001; Schroeder, 2003; Huelsbergen, 2003; Belanger et al., 2012. A combination of these single factors established useful sustainability indicator systems like for example KUL (Breitschuh and Eckert, 2006), RISE (HAFL, 2012) or MOTIFS (Meul, et al., 2008). A comparison of different systems is given by Zapf et al. (2009). The mentioned systems combine specific indicators and formulate for each of them special targets. The suitability of such systems for comparisons between countries or regions and their possibility for showing developments in farms as well as the summarization of single factors to bigger complexes is not yet clear.

A main part of the work done in the DAIRYMAN project, where partners are members of university research, governmental research institutions, agricultural chambers and even of an agricultural school, has its focus on applied research. This gives a need to use or to develop methods and tools for easy handling in the extension practice. A network of 127 pilot dairy farms was installed in order to measure and observe

processes in practical dairy farming in various countries of North-West Europe. For this purpose a high number of farm data was collected in these farms. Details can be found in table 1. In total 127 pilot farms were associated in the project and all of them had to make their own development plan, where the farmers formulate their farm targets and their potential farm development during the project time from 2009 - 2013.

Table 1: Collected data in the Dairyman pilot farms (Boonen et al., 2013)

Data collected	Years of collection
Farm description	2009 – 2011
Economics	2009 – 2011
N, P balances	2009 – 2011
Greenhouse gas emissions	2010
Social aspects	2009 – 2011
Energy consumption*)	2010 – 2012

*) data were only collected of partner Baden Wuerttemberg

Determination of targets has the need of goal attainment. Farming practices had to be evaluated and a special focus was set on the comparison of the farms at the beginning and the end of the project. Moreover it would be of interest to compare dairy systems between regions. So it was necessary to judge the degree of plan fulfillment. This should be done under uniform regulations. Obviously a single characterization of “sustainability” indicators does not give a good view of the farm situation as a whole. Much more attractive and of course with a much bigger information value for farmers and advisors is the combination of single factors in a so called integrative view. This is already written by Von Wiren-Lehr (2001). Whereas the first sustainability descriptions focus only on the economic and ecological situation, Rossing et al. (1997) also took the social aspects on farms into account. The authors used explicitly demands and constraints of farmers and stakeholders as an essential part in the evaluation of sustainability and gave them the same significance like the other factors.

Our common proposal is the development of a tool called “DAIRYMAN Sustainability Index” (DSI), not only for assessment and comparison of single indicators of the farm management or the farm situation, but also for factor combinations to enable a holistic assessment of the DAIRYMAN pilot farms. Such a tool can also help to gain insight into the overall development of farms: strengths and weaknesses are shown and farmers can see how their management actions influence their results in the fields of economic, ecological and social aspects. Therefore the DSI used as a dashboard should be an instrument for a continuous improvement of farm performances.

2. Material and Methods

System approach - Step by step to the DAIRYMAN Sustainability Index (DSI)
Our system approach was developed as follows.

1. Agreement on weighting of ecological, economic and social aspects
2. Choice of single sustainability indicators
3. Scoring of single indicators
4. Determination of target fulfilment
5. Calculation of results for economic, ecological and social aspects
6. Outline of the total DSI score

2.1 Agreement on weighting of ecological, economic and social aspects

Based on the "three-pillar model" of sustainability, it was decided as a convention into our project group, that ecological, economic and social aspects would be treated equally, so that in each pillar a maximum of 100 points could be reached.

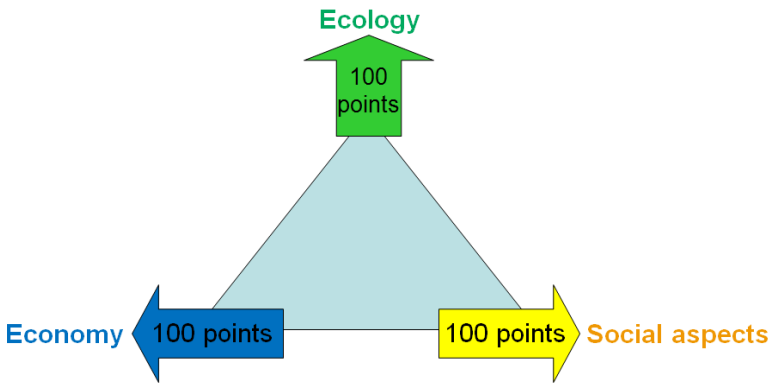


Figure 1. Agreement on weighting the sustainability factor groups

2.2 Choice of single sustainability indicators

Von Wiren-Lehr mentioned already in 2001, that it is not possible to find the real truth of sustainability even if complex models or time consuming measurements are used. Therefore the Dairyman team decided to reduce the number of indicators for the calculation of the DSI instead of using a very large collection of indicators. The requirements on indicators for farm evaluation systems can be basically described after Doluschitz (et al., 2009) and Doluschitz and Hoffmann (2013) as follows:

- Relevance: a need of correlation with the environmental problem, socially comprehensible, logically to interpret
- Methodical coverage: accepted inquiry and evaluation methods
- Reproducibility: data should allow a spatial and temporal differentiation
- Reaction on changes should be visible
- Suitability as adjusting screw: clear functions for evaluation are needed
- Acceptable cost-benefit ratio.

In a first step the chosen indicators for the DSI were selected by the project partner in Aulendorf - after intensive discussions and with the use of a questionnaire answered by pilot farmers, farm advisors and teachers of agricultural schools. In a second step the factors were further selected and discussed between all partners of DAIRYMAN in different meetings (Grignard, et al., 2013; Elsaesser et al., 2013). All chosen factors were clearly defined and it was decided that they should be already gathered within the pilot farm network of all regions in order to reach an acceptable cost-benefit ratio. An exception is made for some social indicators for which further information could be gathered with a short, simple and uniform questionnaire that

might supply missing data for a description of farm sustainability. Biodiversity or soil erosion susceptibility are important attributes which could not yet be taken into account. This means that the system is not complete at the moment and will be further developed stepwise. Table 2 demonstrates the chosen factors.

Table 2. Selected indicators for farm evaluation with DSI

Economy	Ecology	Social aspects
1. Income per kg milk	1. N balance per ha and per kg milk	1. Education
2. Income per family working unit	2. N efficiency	2. Working conditions
3. Farm income	3. P balance per ha and per kg milk	3. Farm continuity
4. Dependency on subsidies	4. P efficiency	4. Social role and image
5. Exposure to price fluctuations	5. Agri-environmental payments	
	6. Greenhouse gas emissions	

Economy

1. Income at **dairy level** (€ per 100 kg FPCM):

$$\frac{(Revenues - Annual\ Expenses - Depreciation - Interest)_{dairy}}{\frac{Milk\ production\ (kg\ FPCM)}{100}}$$

2. Family labour income at **dairy level**:

$$\frac{(Revenues - Annual\ Expenses - Depreciation - Interest)_{dairy}}{(Family\ Labour\ Units)_{dairy}}$$

3. Farm income (per family labour unit):

$$\frac{Revenues - Annual\ Expenses - Depreciation - Interests}{Family\ Labour\ Units}$$

4. Dependency on subsidies:

$$\frac{Public\ payments}{Revenues - Annual\ Expenses - Depreciation - Interests}$$

5. Exposure to price fluctuations at **dairy level**:

$$\frac{(Variable\ Costs + Depreciation + Interest - Paid\ Labour)_{dairy}}{(Revenues - Public\ Payments)_{dairy}}$$

Ecology

1. N balance per ha: N input minus N output at farm level
2. N balance per kg milk: N input minus N output at farm level
3. N efficiency: N output per N input at farm level
4. P balance per ha: P input minus P output at farm level
5. P balance per kg milk: P input minus P output at farm level
6. P efficiency: P output per P input at farm level

7. Payments for environmental activities: agro-environmental payments per ha e.g. for cultivation of nature protection land, no use of pesticides, etc. (as it is a payment)
8. Greenhouse gas emissions: GHG emissions for the dairy component of the farm in 1000 kg CO_2-eq per ton milk

Social aspects

Most of the social indicators are included in a questionnaire which is given to every family worker. Answers of the questionnaire are scored and then integrated into the DSI validation. Some information concerning basic education, holidays, work load, employment are already gathered in the descriptive data set.

1. Education
   1.1 Basic education
   1.2 Training courses
2. Working conditions
   2.1 Personal satisfaction (Work-Life-Balance? How often do you feel stressed? Are you happy with your salary? Activities outside the farm?)
   2.2 Work load per family labour unit
   2.3 Holidays
   2.4 Free time
3. Farm continuity
   3.1 Preparation of farm succession
   3.2 Is there a possible successor?
4. Social role and image: relation to neighbourhood, reputation within the area, organization of public events on the farm, etc.

2.3 Scoring of single indicators

An important point in the ***DSI*** system is, that not all selected factors are of equal significance, e.g. N efficiency may be less important than N balance. This means that each single indicator needs to be judged and evaluated within the 100 point scale. This factor weighting is difficult because the decisions may be subjective – one region or even a farm may consider that f. e. holidays are really important whereas another region may focus more on animal welfare and would give to that indicator a higher score.
Even if the task of the DSI was to harmonize the scoring values between all partners in the DAIRYMAN project, this objective could not be realized until now because single indicators of the DAIRYMAN partners are differently evaluated. Sometimes there appear different targets of the partner regions which might influence this scoring as well. Ireland and Brittany, e.g. consider phosphorus as important, so they would put an emphasis on indicators dealing with phosphorus whereas in the Netherlands or Germany the nitrogen application plays an important role which means that their scoring would differ from the other two regions.
At first, this problem seems to be not soluble, but there are already some solution approaches. In 2005 (Elsaesser et al.) we already discussed this and possible solutions are realised by Belanger et al. (2012) and Larochelle et al. (2007) in Canada. Moreover the Chambre d´Agriculture in Pays-de-la-Loire, a partner in the

DAIRYMAN project, uses a multifactoral combination as a tool in order to evaluate dairy farms (Meul, et al., 2008). In the DAIRYMAN project, the evaluation of indicators was done after a long discussion process within the Dairyman team and under regard of a special survey of experts in Germany. The individual weightings as a result of the discussions are summarized in table 3. It should be mentioned here, that this result is a compromise, because the scoring between regions sometimes was diverse. "Regions" may differ geographically or politically, they may differ in soil types, precipitation and grassland growth or they differ between dairy farming systems like the grazing systems with low input or in-door feeding systems with high input. But these differences are existent between far distant countries and also between neighboring sites in a country. Therefore the differentiation between regions can be difficult and comparisons by using a fixed scoring frame are nevertheless interesting. It is the task of the DSI user to discuss and interpret the gained results in a second step.

Table 3. Chosen sustainability indicators after weighting (economic, ecological and social aspects)

Income/kg milk	16%	N balance/ha	15%	Education	22%
Income/fLU	34%	N balance/kg milk	11%	Working conditions	42%
Total farm income	22%	N efficiency %	13%	Continuity of farm	16%
Dependency on subsidies	10%	P balance/ha	11%	Social role/image	20%
Exposure to price fluctuations	18%	P balance/kg milk	8%		
		P efficiency %	10%		
		Agri-env. pay./farm	10%		
		GHG emissions	22%		
	100%		**100%**		**100%**

2.4 Determination of target fulfilment

2.4.1 Data collection

As described above, special DAIRYMAN data collection files were developed to compare farm performances of all participating regions (Boonen et al., 2013). This is necessary because every region has its own methods to calculate, e.g., economic results or nutrient balances which cannot be used for comparison. So we could not use already existing target values available from benchmarking or other existing databases in the partner regions; this forced us to choose special target values available within our farm network results.

It was decided to take the quantil 10 and quantil 90 values of the complete dataset of our 127 pilot farms as reference values for maximum and minimum scores. In this way pilot farms that are within the best 10% are awarded with full marks for the particular indicator and farms that are within the worst 10% receive no scoring points

for the respective indicator. Points between these quantils are calculated by linear regression.

Multiplication of the measured value and the degree of target fulfillment gives the score for each factor. If all targets would be perfectly fulfilled, than the added values would give a total score for example of the ecological index of 100 points. However this calculation process is clear, some disadvantages are inherent in the system. If we take the boxplot values of the whole dataset of all pilot farms, some aspects must be taken under regard. So for example the Irish partners have their focus on phosphorus and their governmental regulations prohibit a high use of phosphorus. Because of that, the farm gate balances for phosphorus are very low in Ireland and therefore consequently the P efficiency is very high. This leads to the situation that the average values of P efficiency for all partners are very low in comparison to Ireland and therefore the scoring for the Irish is very high. Are the compared farms nevertheless comparable? Or are the site specific conditions of such importance, that comparisons between regions are prohibited? Is this situation only a reaction on the presently high P values or can it be taken as an expression of a sustainable situation? This has not yet been decided and therefore leads to the constraint of an only regional view. But after all, the use of phosphorus is just one of 17 indicators which forms the DSI in total, so if one factor goes down, another increases perhaps.

The boxplots for the indicators of the project year 2010 can be found in figures 3 to 17.

Explanation:

Boxplots are to interpret as follows (fig. 2)

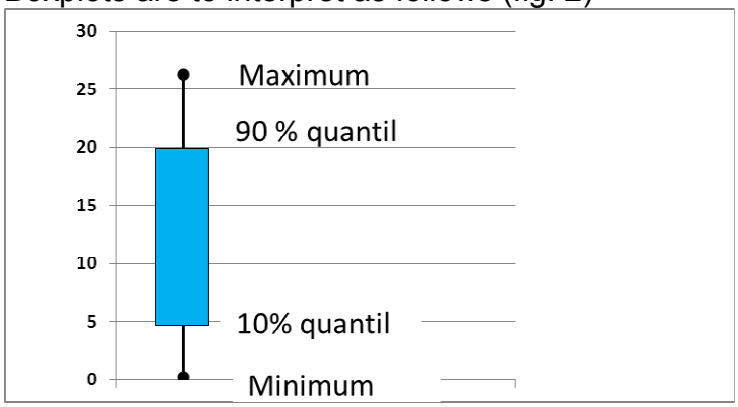


Figure 2. Interpretation of the boxplot - pictures

Abbreviations:
BF = Belgium Flanders; BW = Belgium Wallonia;
F = France FB = Brittany; FL = Pays de la Loire; FN = Nord Pas de Calais;
GE = Germany - Baden-Wuerttemberg;
I = Ireland; IN = Northern Ireland (UK); IR = Ireland;
LU = Luxembourg;
NL = The Netherlands

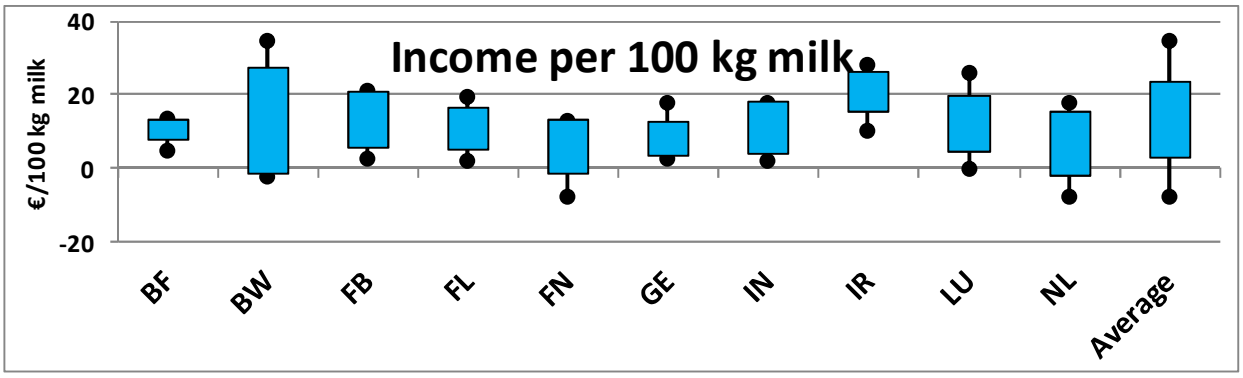


Figure 3. Income in € per 100 kg/ECM (2010)

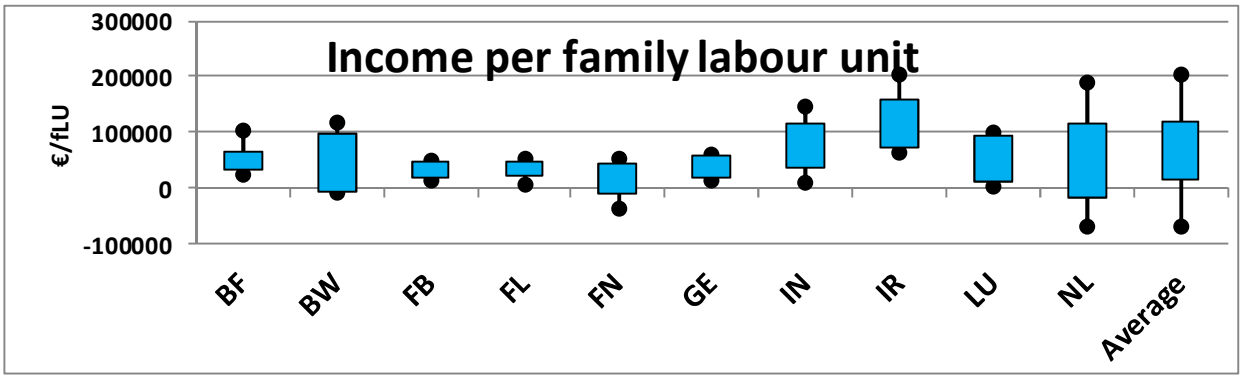


Figure 4. Income in € per family labour unit of the dairy component of the farms (2010)

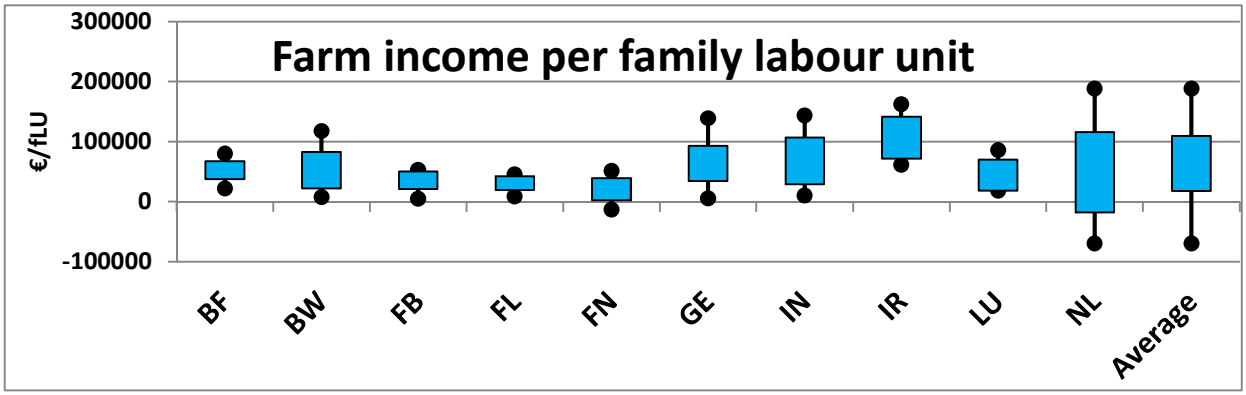


Figure 5. Total farm income in € per family labour unit (2010)

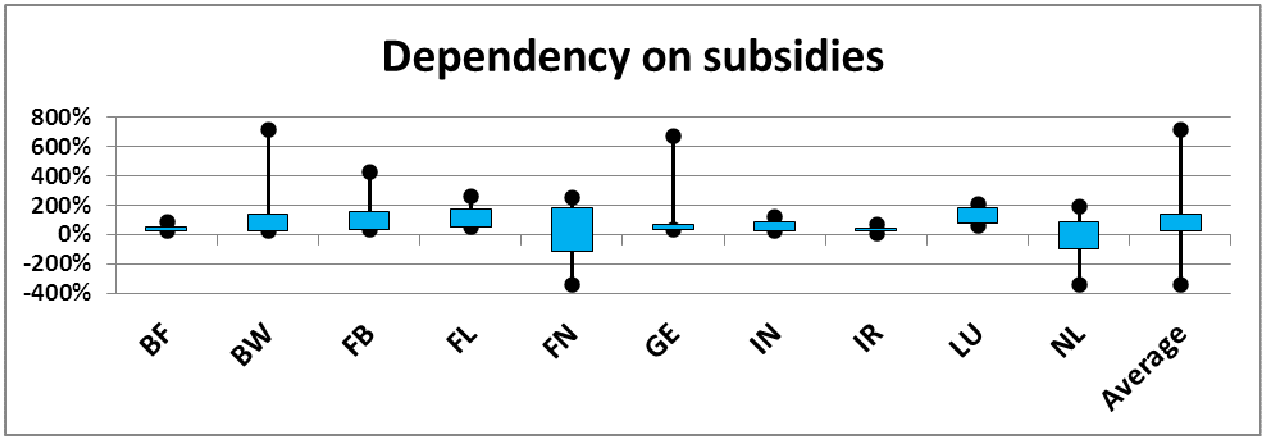


Figure 6. Dependency of the farm on subsidies (2010)

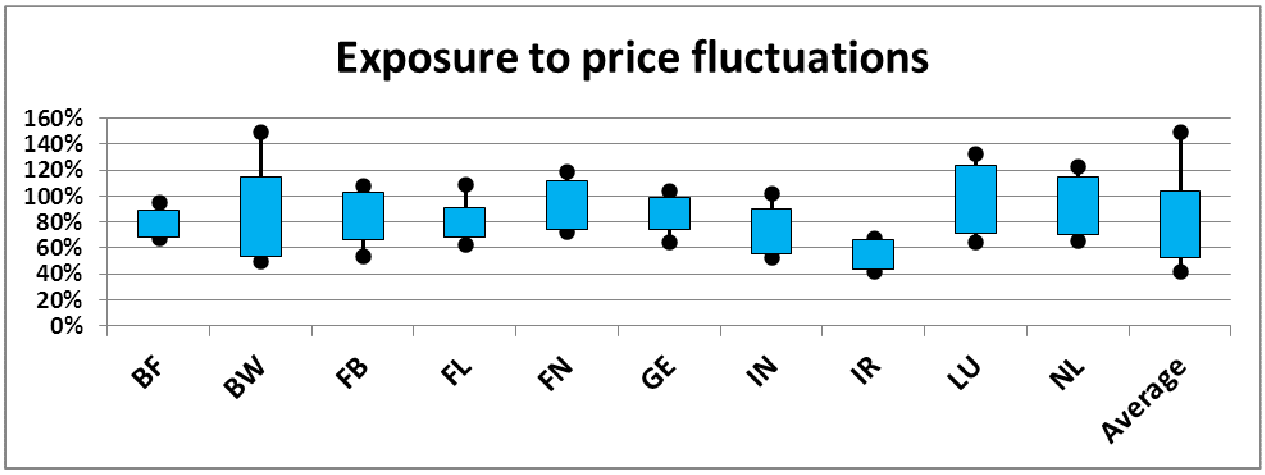


Figure 7. Exposure to price fluctuations (2010)

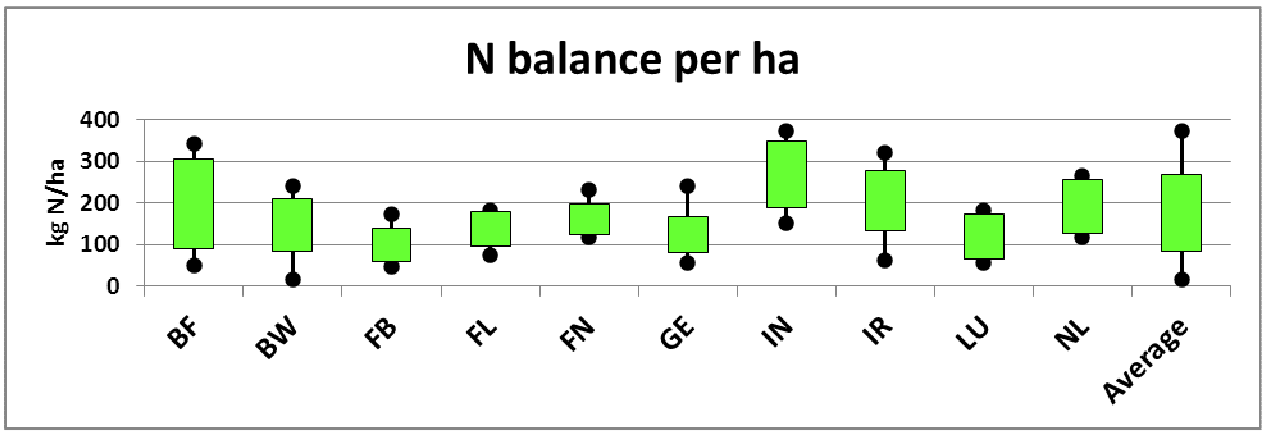


Figure 8. Nitrogen balance in kg N/ha (2010)

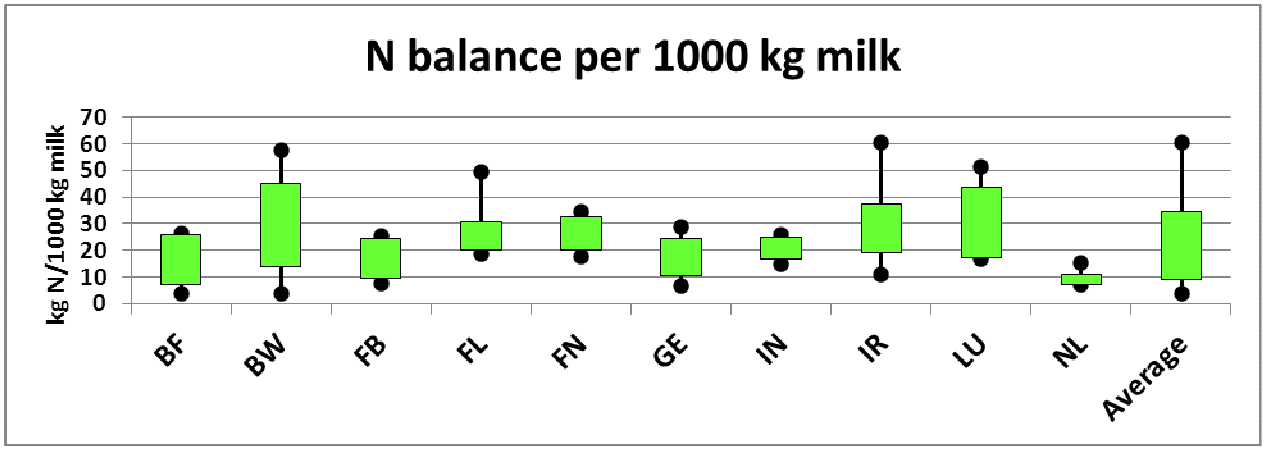


Figure 9. Nitrogen balance in kg/t of milk (2010)

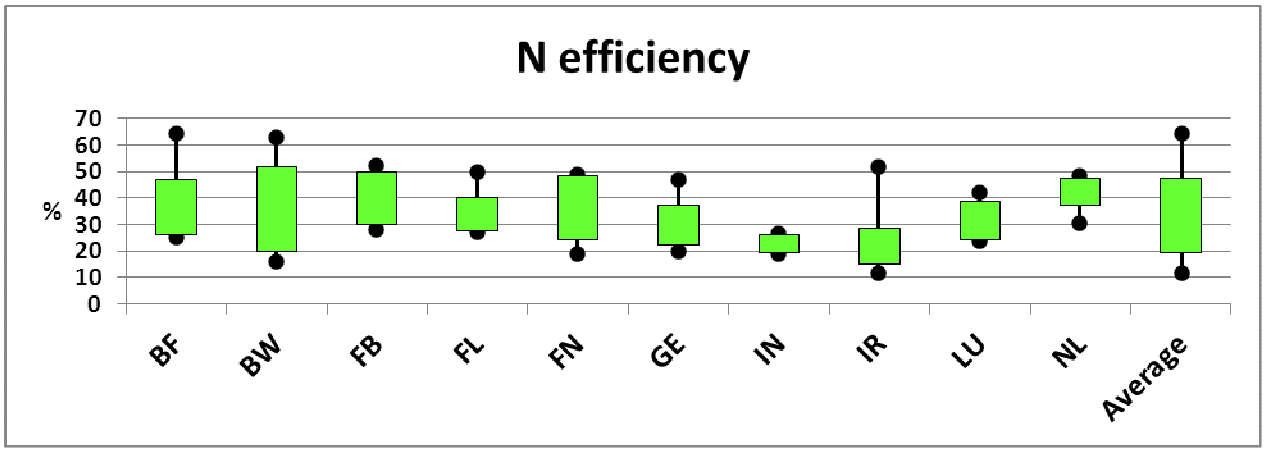


Figure 10. Nitrogen efficiency in % (2010)

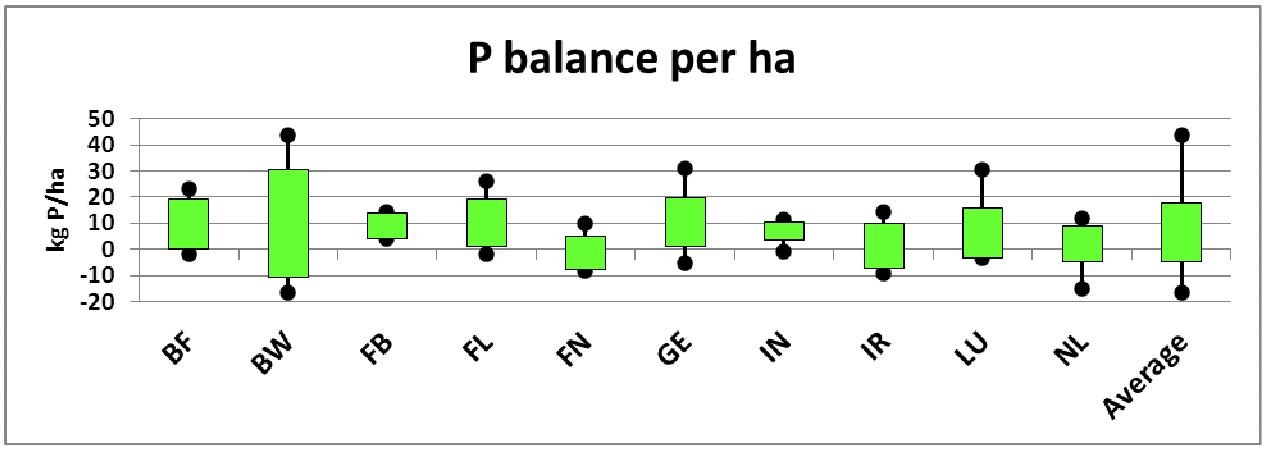


Figure 11. Phosphorus balance in kg P/ha (2010)

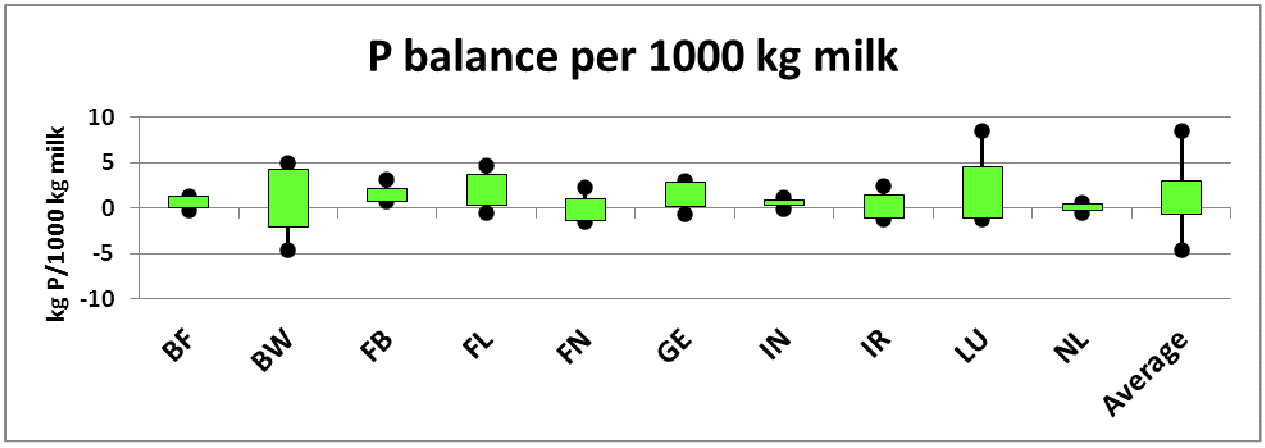


Figure 12. Phosphorus balance in kg P/t of milk (2010)

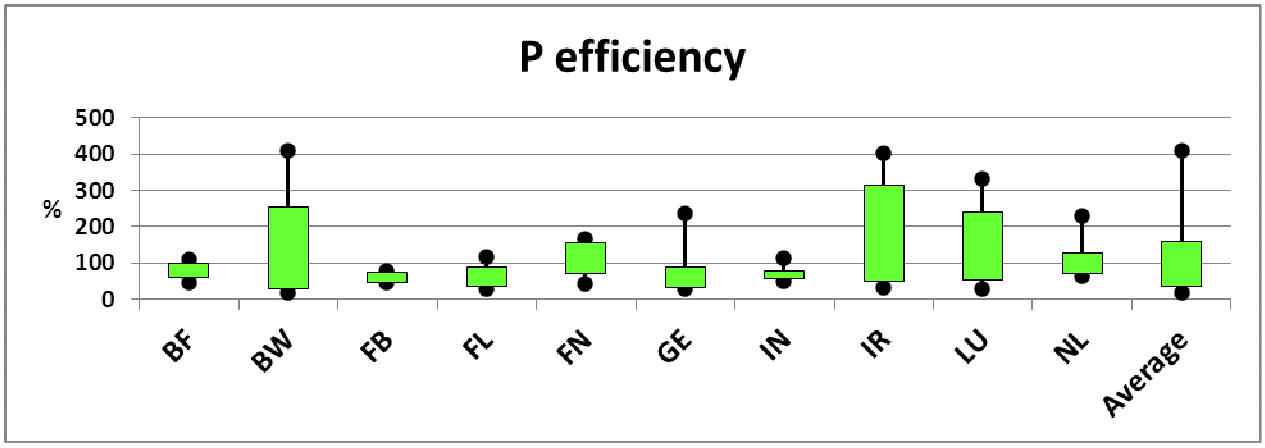


Figure 13. Phosphorus efficiency in % (2010)

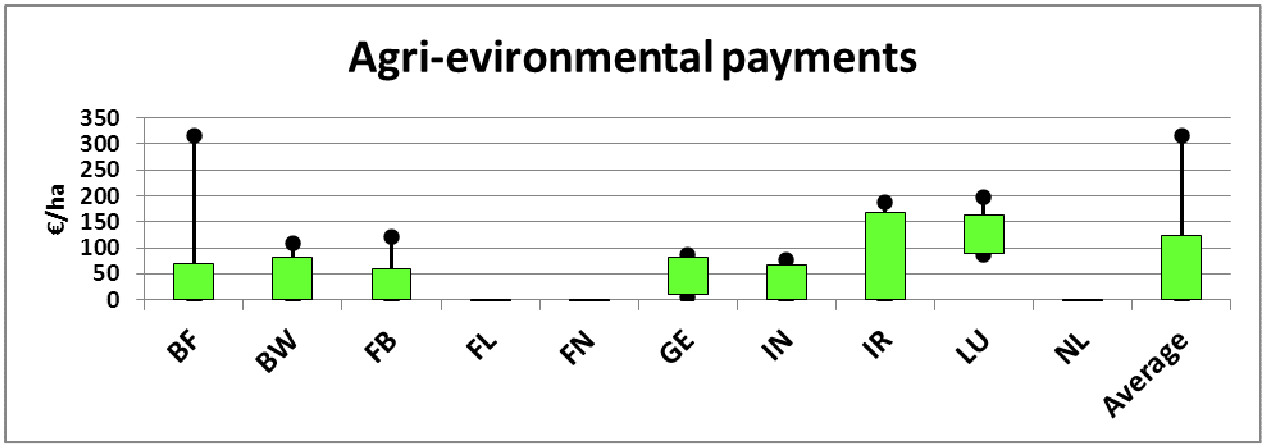


Figure 14. Agri-environmental payments (2010)

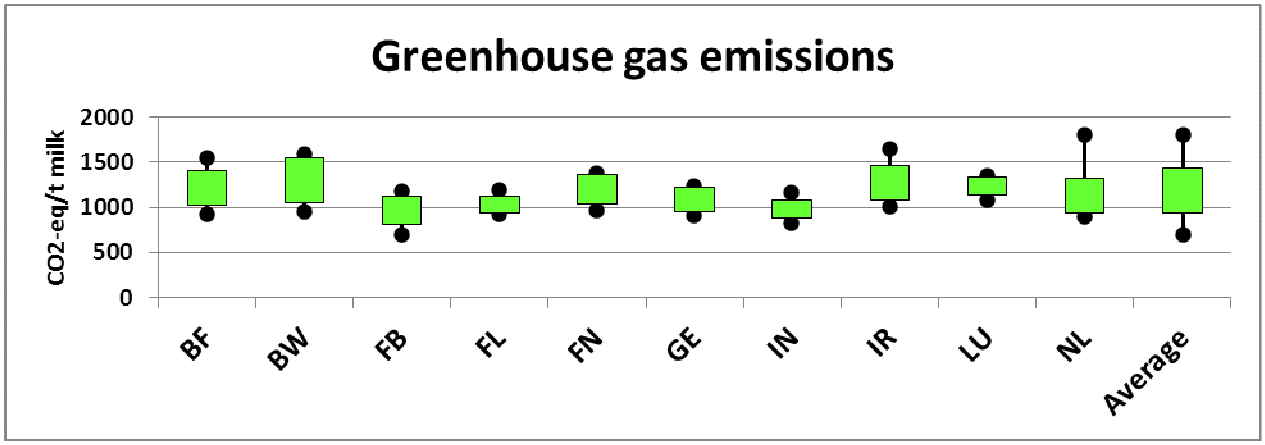


Figure 15. Greenhouse gas emissions in CO_2-eq/t milk (2010)

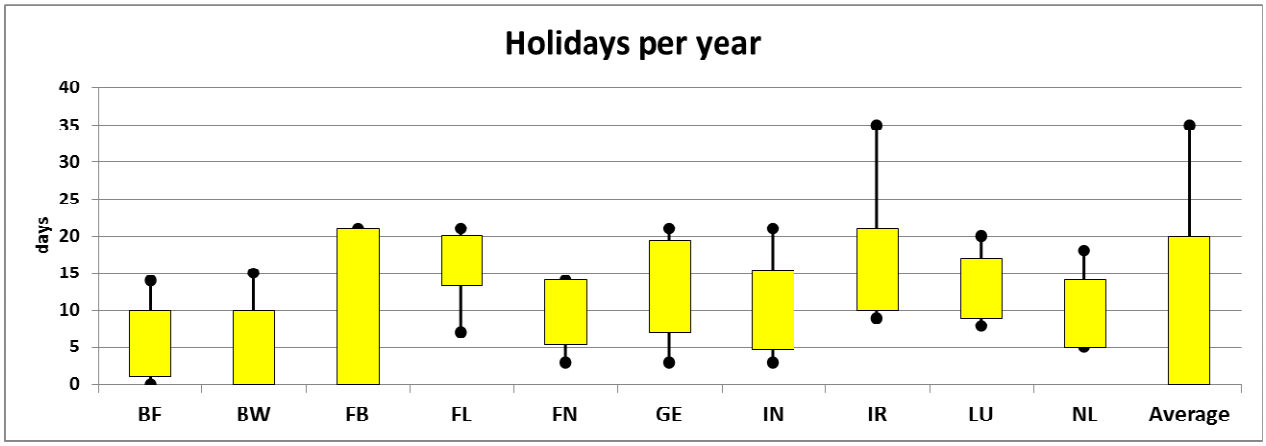


Figure 16. Social aspect: Holidays per year (d) (2010)

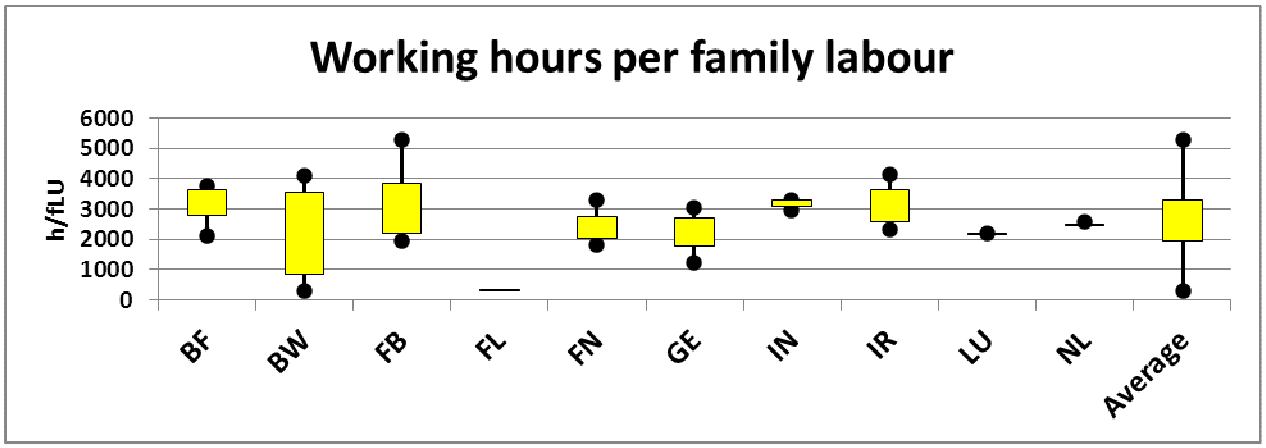


Figure 17. Working hours per family labour unit (h/fLU) (2010) (for FL no values were available, for LU and NL only standard values were taken)

For farm continuity and the social role of the farmers no boxplots are available, because the questions are simple to answer with yes or no or with good or non-good.

Summarized the indicator quantils are as follows (table 4).

Table 4. Indicator quantils (2010)

Indicator	Minimum value	10% quantil	90% quantil	Maximum value
Economics				
Income per 100 kg/milk	-7,62	2,63	23,65	34,88
Income per familiy worker	-69427,42	13323,18	117466,71	202916,21
Farm income per family labour unit	-69427,42	18081,27	109313,67	188542,86
Dependency on subsidies	-3,34	0,22	1,38	7,15
Exposure to price fluctuations	0,42	0,53	1,04	1,49
Ecology				
N Balance /ha	17,10	82,40	267,99	373,32
N Balance /1000 kg milk	3,85	9,09	34,34	60,94
N efficiency	11,79	19,41	47,54	64,40
P Balance /ha	-16,31	-4,62	17,88	43,90
P Balance /1000 kg milk	-4,56	-0,63	2,97	8,53
P efficiency	19,45	35,89	157,88	411,60
Agroenvironmental Payments	0,00	0,00	122,55	317,95
Greenhouse gas emissions	703,80	932,30	1427,66	1816,89
Social aspects				
Holidays per year	0,00	0,00	20,00	35,00
Working hours per fam. LU	330,00	1951,90	3310,47	5304,00

2.4.2 Calculation

The total scores for economic, ecological and social aspects are calculated by multiplying the validated values with the scores. The sum of these scores is the total value. The calculation of the economic result is presented in table 5.

Table 5. Example of calculating the economic result of the DAIRYMAN sustainability index

Score	Income per kg milk	Income per fLU	Farm income	Dependency on subsidies	Exposure to price fluctuations
0	≤ 2.65 €/100 kg	≤ 13357 €/fLU	≤ 19184 €/fLU	≥ 135.29%	≥ 103.65%
0.5	13.22 €/100 kg	65462 €/fLU	66369 €/fLU	77.51%	78.13%
1	≥ 23.79 €/100 kg	≥ 117567 €/fLU	≥ 113553 €/fLU	≤ 19.73%	≤ 52.61%
Points	max. 16 points	max. 34 points	max. 22.5 points	max. 9.5 points	max. 18 points
Example	21.7 €/100 kg	114400 €/fLU	75800 €/fLU	142%	49%
Validation	0.9	0.97	0.6	0	1
Calculation	0.9*16=14.4	0.97*34=32.98	0,6*22.5=13.5	0*9.5=0	1*18=18
Result	14.4 points	32.98 points	13.5 points	0 points	18 points
Result economy: 78.9 points out of 100 possible points					

2.4.3 Presentation of the total DSI score

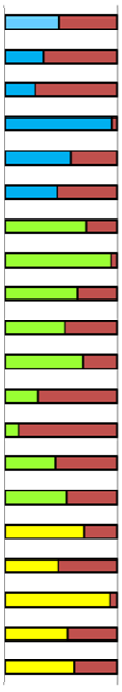
The results for ecological and social aspects are calculated in the same way as shown above for the economic index. This means that the DSI can be presented in different ways. The "total sustainability score" is calculated for each of the three pillars. This value is only valid to gain a first impression of rankings. This urgently requires a detailed interpretation of the results (Table 4), because farms with for example 200 total scoring points are not sustainable, if most of the points arise from only two pillars e.g. the social and economic aspects. Consequential a minimum limit needs to be set for every pillar. Proposed is a limit of one third of the total possible points as minimum and two thirds as an approximation of a target fulfilment for a sustainable farm.

2.4.4 Farm evaluation

The scores of the single indicators are summarized. In the given example (table 6) the farm has 45,5 points in economy, 55,1 points in ecology and 61,9 points on social aspects. Now the farm situation is easily to judge (figure 18). The farm development can be visualized by comparing single years. Furthermore comparisons between farms in the same region are possible (figure 19) - the red line shows a degree of target fulfillment of 66%.

Table 6. Detailed analysis of the results of a German pilot farm with individual scoring

	Kriterium/Indikator	Dimension	Betriebs-wert	Bewer-tung	Punktzahl des Betriebes	max. mögl. Punktzahl
Ökonomie	Einkommen Milchviehbereich	€/100 kg Milch	12,8	0,5	7,8	16
	Einkommen je Familien-AK (Milchvieh)	€/Familien-AK	49214,6	0,3	11,7	34
	Betriebseinkommen (gesamtbetrieblich)	€/Betrieb	42458,3	0,3	5,9	22
	Abhängigkeit von Subventionen	%	27,4	1,0	9,6	10
	Sensibilität gegenüber Preisschwankungen	%	73,9	0,6	10,5	18
				0,5	45,5	100
Ökologie	N-Bilanz (gesamtbetrieblich)	kg/ha	133,2	0,7	10,9	15
	N-Bilanz (Milchviehbereich)	kg/t Milch	10,5	0,9	10,4	11
	N-Effizienz (Milchviehbereich)	%	37,6	0,6	8,4	13
	P-Bilanz (gesamtbetrieblich)	kg/ha	5,9	0,5	5,9	11
	P-Bilanz (Milchviehbereich)	kg/t Milch	0,5	0,7	5,6	8
	P-Effizienz (Milchviehbereich)	%	71,2	0,3	2,9	10
	Ausgleichszahlung für ökologische Leistungen	€/ha	15,0	0,1	1,2	10
	Treibhausgasemissionen (Milchviehbereich)	CO2-eq/t Milch	1205,4	0,4	9,9	22
				0,6	55,1	100
Soziales	Aus- und Fortbildung	keine		0,71	15,58	22
	Arbeitsbedingungen	keine		0,48	20,06	42
	Fortbestehen des Betriebes, Hofnachfolge	keine		0,94	15,00	16
	Soziale Rolle und Image	keine		0,56	11,25	20
				0,62	61,89	100



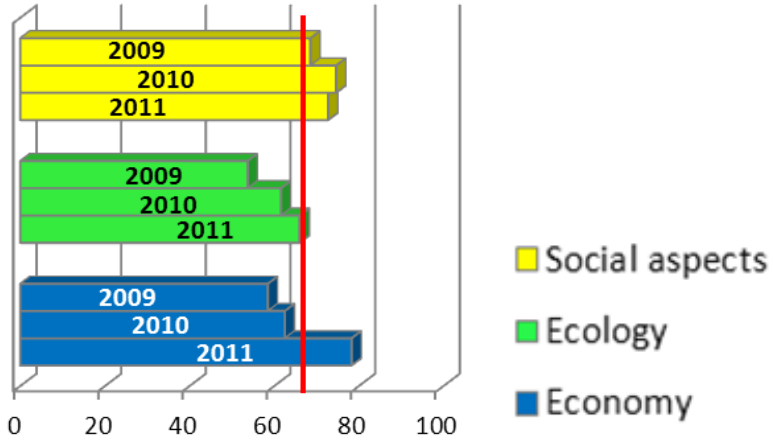


Figure 18. Example of the development of sustainability scores during the project time

In order to make individual comparisons, interested farmers can use the averages of the regional scores for ranging their own dairy farm (like in figure 19).

Focusing on regional comparisons, figure 19 gives an impression of reached scores in different regions.

3. Discussion

The DSI seems to be an integrative method in assessing developments of dairy farms. However, the aggregation of single factors has to be carefully evaluated, because it is depending of a subjectiv scoring (Von Wirén-Lehr, 2001). The Dairyman team took a lot of time for the decision process, but it seems that we have not yet finished all discussions. In the Dairyman project scoring of single indicators was done as a convention between the partners by taking the quantils of the average values of the pilot farm network. This may cause some irritations, because the participating pilot farms are not presenting the average of all existing dairy farms in NWE. Therefore, despite the potential use of the DSI Tool, the system has some weaknesses. First of all the regional aspects can hardly be exactly determined. At the moment it is not possible to define regional targets of ecological indicators, because that can only be done on the basis of long lasting experiments, which are very cost intensive and hard to realize. For economic and social aspects there is a lack of experiments. Moreover the view on only one year can give different scores because of variations in milk prices or concentrate costs. Nevertheless the influence of cost and price fluctuations on the economic situation expresses the annual situation.
With its multiple factor analysis the DAIRYMAN-Sustainability-Index (DSI) offers the chance to identify the degree of sustainability in dairy farmsIt is useable as a tool for extension services in order to have a brief overview of the farm situation. Besides the progress in farm development can be measured. If it is not only the target to compare farms but as well regions, it is necessary to define “regions” with regional target values for farms with the same objectives and the same challenges. Such a comparison is difficult and complicated, because differences in regions may exist not only between far distant countries but also within an area where different ecological characteristics appear. The discussed correction of the economic values between

regions under regard of the costs of living index is obsolete, because in a common EU market with a unique currency the production possibilities and the price relations are open.

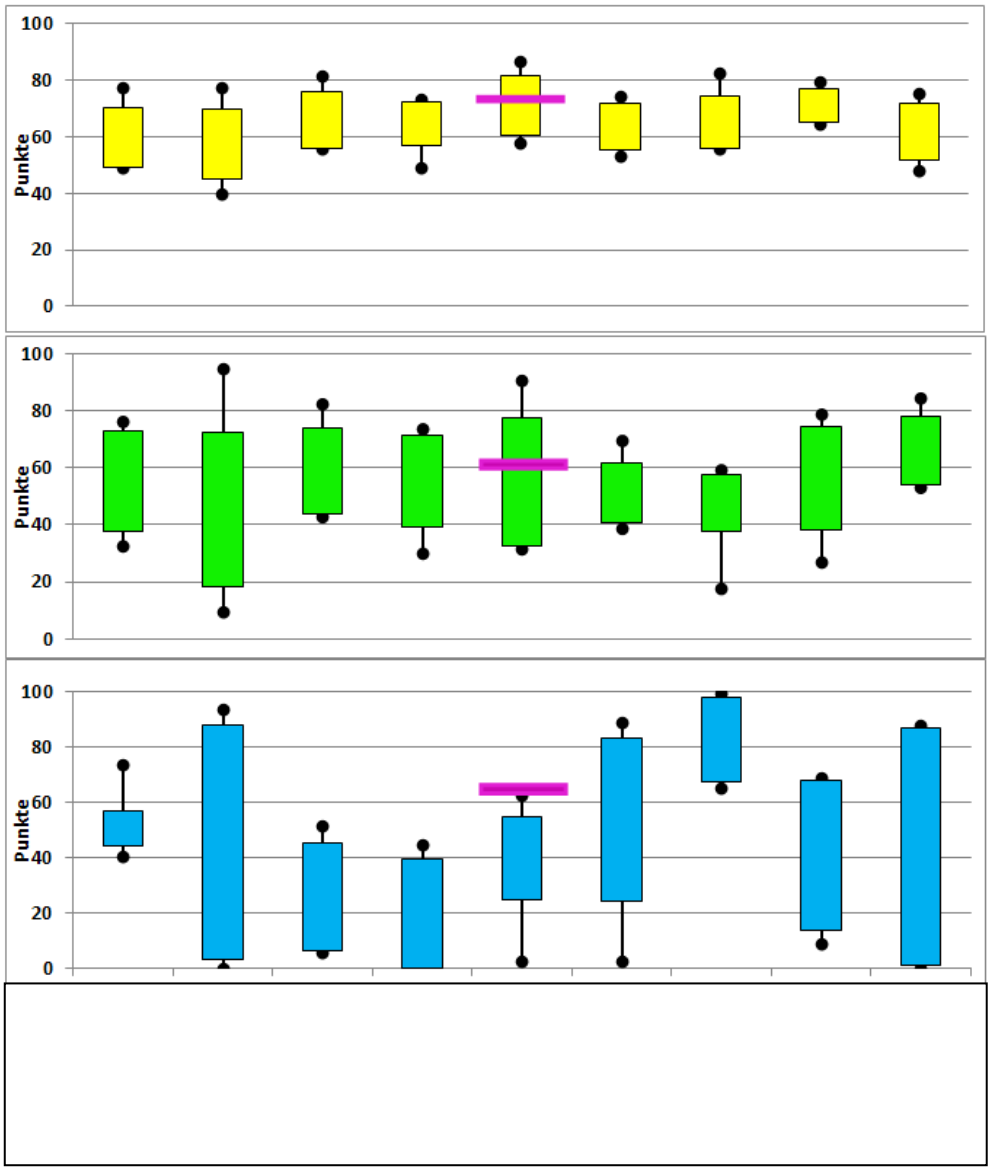


Figure 19. Examples of regional and individual farm values (red bars) of the DSI

Therefore it seems to be reasonable to use the DSI the way it is constructed at the moment and discuss and interpret the situation in a second step with the specifications and characteristics of different regions and farms. The summarized "total DSI score of a farm" allows detecting developments in general, but of course it is not useful to look on the total scores without having a deeper look on the detailed farm results. The total score should only be taken into account in correspondence with interpreting single factors and combined values of economic, ecological and social aspects.

The collected data of the DAIRYMAN project allow a clear overview on the production structures and the future potential of dairy farming in North-West-Europe (Boonen and Hennart, 2012). It is no doubt, that the availability of a mulit-annual

data-set gives better results and a more solid analysis with lower sensitivity. The DSI offers a better insight on the farm structure than comparisons of individual factors. Furthermore the DSI allows comparisons between years so that developments of dairy farms can be assessed even if not all potentially available indicators are collected yet.

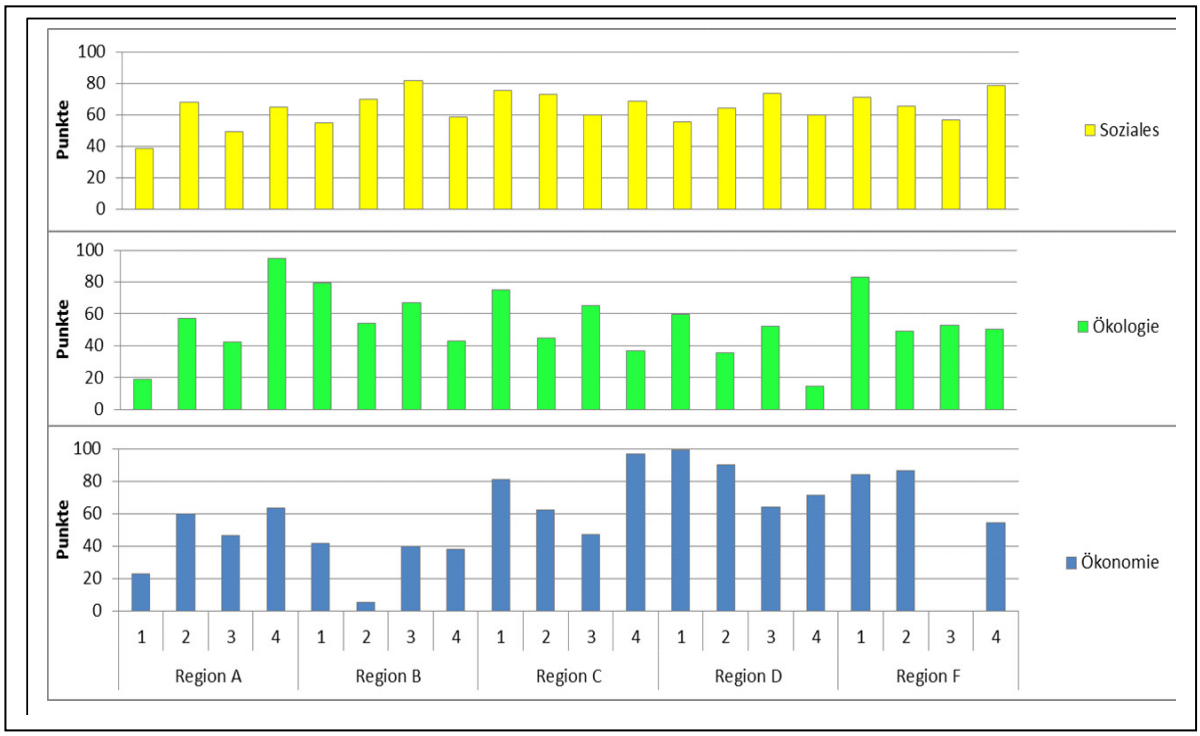


Figure 20. Interregional comparison of summarized scores of selected pilot farms

4. Summary

The “one and only truth of sustainability” is not the focus of the DSI index system, but it is well suited to monitor the impact of management plans on the development of sustainability on farms or a group of farms in a defined region. In order to minimize bias exerted by specific single influences, we based the system on the arguments of several experts from different regions and the conclusions of an intensive discussion process within the Dairyman team.
Sometimes large differences exist between regions, so that comparisons are of interest. Therefore differences and special situations between regions should be taken into consideration. It was our common objective to develop a management tool which is suitable for all partners in order to evaluate dairy farm sustainability as a combination of single indicators. Moreover this tool should visualize individual farm development and give the possibility to show differences in milk production systems.

The DSI is a first approach and lives of the big data set of DAIRYMAN. It is not the one and only solution, but it can be a first step in the right direction in order to simplify complex systems like dairy farms and in order to evaluate the efforts of farmers. It seems to be better, to have factor aggregations instead of only single indicators, so

that the farm situation can be comprehensively described. The DSI is a first step in scoring the farm success, it is not finished yet but it is worth further development.

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