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Developing the dairy business in New Reality

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Summary

Market prospects, policy developments, technological developments and expectations of dairy farmers and experts from the EU, US and New Zealand were the basis for indicating the crucial decisions Dutch dairy farmers face in the coming five years. This exploration has shown that farm expansion in the dairy sector is in progress throughout the leading dairy countries in the world. That is why there is a need for a different organisation of the farm at farm level and more attention for personnel management. As far as the market is concerned, besides a slightly increasing milk price, stronger fluctuations in milk price in the EU are also expected.

On the basis of the results , five crucial themes were indicated: entrepreneurship, expansion, price fluctuations, farm organisation and labour. Within each of these themes one crucial question is mentioned which many dairy farmers are going to deal with in the coming years. These questions are:

1. How do I improve my entrepreneurship?
2. How can I expand the farm?
3. How do I prepare for fluctuations in prices of milk and feed?
4. How can I keep the farm system simple?
5. How do I decide between personnel and automation?

In order to develop tools for supporting the decisions, explorations have been done, which has resulted in the following recommendations for dairy farmers:

1. Focus on personal qualities and on a wide orientation of the sector and its surroundings when creating a solid vision and plan for one's own farm.
2. Improving feasibility of expansion plans and hedging against price fluctuations require the same measures from dairy farmers: realise a high gross margin, low fixed costs and a small debt per kg of milk.
3. The amounts that have currently to be invested to realise expansion are so high that for almost all farms this leads to a long period of less cash flow: the amount that remains after having met all obligations to pay. Due to the smaller cash flow the farm is also more sensitive to the risk of temporary low milk prices. It is preferable to postpone expansion until after milk quotas have no value any longer.
4. The expanding farm with flex workers needs a simple organisation. The KISS-approach offers good possibilities which also fit the desires to keep expansion plans cheap.
5. The extra labour on the expanding farm can often be realised by automation as well as by extra workers. Decisions can be based on preferences and cost consideration.

Skilful expansion is the central message: growing not only in size, but also more attention for the profitability of expansion and for the changes in the internal organisation that will be needed after expansion.

[1] This is the English summary of three Dutch reports (ASG-reports numbers 114, 115 and 116). Many thanks to the following authors who contributed to the study on which this summary is based: Siemen van Berkum, Cees van Bruchem, Ina Enting, Aart Evers, Willem Rienks and Aart van den Ham (all Wageningen University and Research), Mark Voorbergen and Jeroen Verver (Rabobank Nederland), Bob Cropp (former University of Wisconsin) and Frans Ettema (European Dairy Farmers The Netherlands)

1. Introduction

On the occasion of the annual congress of the European Dairy Farmers in June 2008, the European Dairy Farmers the Netherlands, the Animal Sciences Group and LEI (Agricultural Economic Institute) of Wageningen University and Research and Rabobank Nederland have together conducted a study into the consequences of the "New Reality" for decision-making by the Dutch dairy farmer. The "New Reality" is an umbrella term for the combination of changes in policy, market and technology on Dutch dairy farms. The key objective was: supporting dairy farmers in developing their farms in the coming five years. For decision-making in that period we try to look ahead at the developments which are relevant in the next 10 years.

2. Project plan

Overview 1 shows the plan and working method within the project. In the first phase a picture is given of the market developments up to and including 2018. Global and national forces that affect the development of the dairy market have been described. Because of the expected large fluctuations in milk prices extra attention is paid to fluctuations in milk prices and pig prices between 1990 and 2008. This has been done for the milk price in New Zealand and the US, because in the past those countries showed stronger fluctuations than in the EU, and also because market support was less there. Moreover, the price fluctuations for pork and piglets in the Netherlands have been explored, hoping that we can learn from the experiences within that sector. Additional to the magnitude of the fluctuations, their causes have also been considered. We hope that the results will offer insight into possible future causes for increase and decrease in milk price and the magnitude of these fluctuations.

At the end of phase 1, literature search and a session with experts were carried out to see what the effect could be of abolishing the milk quota system in 2015 on the development of milk production in various EU-regions.

In phase 2 workshops were conducted with Dutch experts and dairy farmers, which were aimed at finding out in what way the Dutch dairy farmers can anticipate the future and the crucial decisions that are to be made. A further investigation among Dutch dairy farmers and foreign sector experts was done. Some of these foreign experts were also interviewed by phone. All this has led to five crucial themes for Dutch dairy farmers in the coming years: entrepreneurship, expansion, price fluctuations, farm organisation and personnel versus automation.

3. Indicators of development dairy market

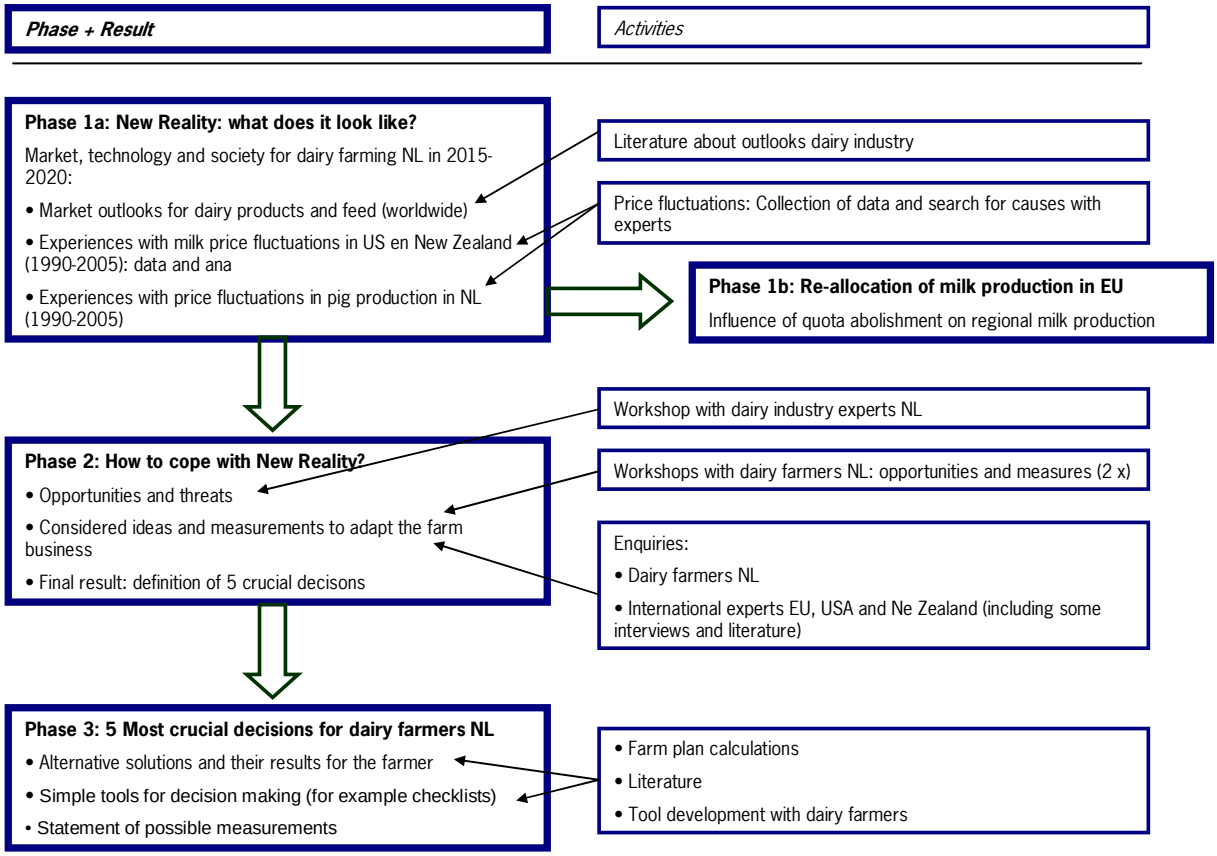
Predicting future milk prices is hard, which was proved by the developments in 2007. Still, everyone who, professionally, is dependent on the price level is eager to find tools and indicators to predict these future prices. The explorations show that for the coming years high dairy product prices will remain. The following indicators can give insight into the expected development of the milk price:

- Economic growth in emerging countries as indicator of the demand from those countries.
  The increase in consumption of dairy products in the developed countries will remain the same or increase only slightly. Particularly the increase in dairy products in the emerging economies will cause the extra demand and price increase.
- Increase in global dairy production
  Particularly the US and China seem to be able to increase their dairy production rather considerably. Europe is not likely to be able to, due to the milk quota system. Oceania can increase production only slowly, due to limitations concerning available land for dairy cattle and periodic drought problems.
- Price level grain
  High prices of grain and corn are cost price increasing for milk and thus lift the milk price. This also applies to other feed products, since these move with the prices of grain as well. Since recent times the grain price is affected by the oil price, because grain can also be used as raw material for energy production. Expected grain prices can particularly be inferred from the level of grain prices on the futures market in the US.

High grain prices can also lead to shutting out the dairy farm industry by grain on land that can be used for both.

- Prices on futures markets for dairy products in the US.

Overview 1. Overview of approach and phasing of the project Milking in the New Reality



By monitoring these indicators the dairy farmers in the EU should also be able to know of price movements earlier, so as to take measures to respond to these fluctuations. Thus, skills to perceive possible fluctuations early, as well as skills to take measures on the farm are important factors to respond to price fluctuations as well as possible.

4. Consequences of abolishing milk quotas for the production in EU-regions

During a session with four Dutch experts all EU-regions were assessed as to their potential for the increase milk production after abolishing the milk quota system. The result is presented in figure 1. According to this study, the following regions are most likely to increase their milk production in case the milk quota system is liberalised or when abolishing the quota system altogether (in order of potential):

- North Sea region, consisting of Belgium, Luxembourg, the Netherlands, North-Germany and Denmark.
- Brittany, Normandy and the Loire region
- Po Valley

The positive prospects for these regions are mainly caused by the combination of favourable scores for entrepreneurship, profitability, competitive position of the processing industry and production potential of the soil. These results are in accordance with those from other studies, in which also the coastal regions of Ireland to Poland are indicated as the areas with the most potential for increasing their production.

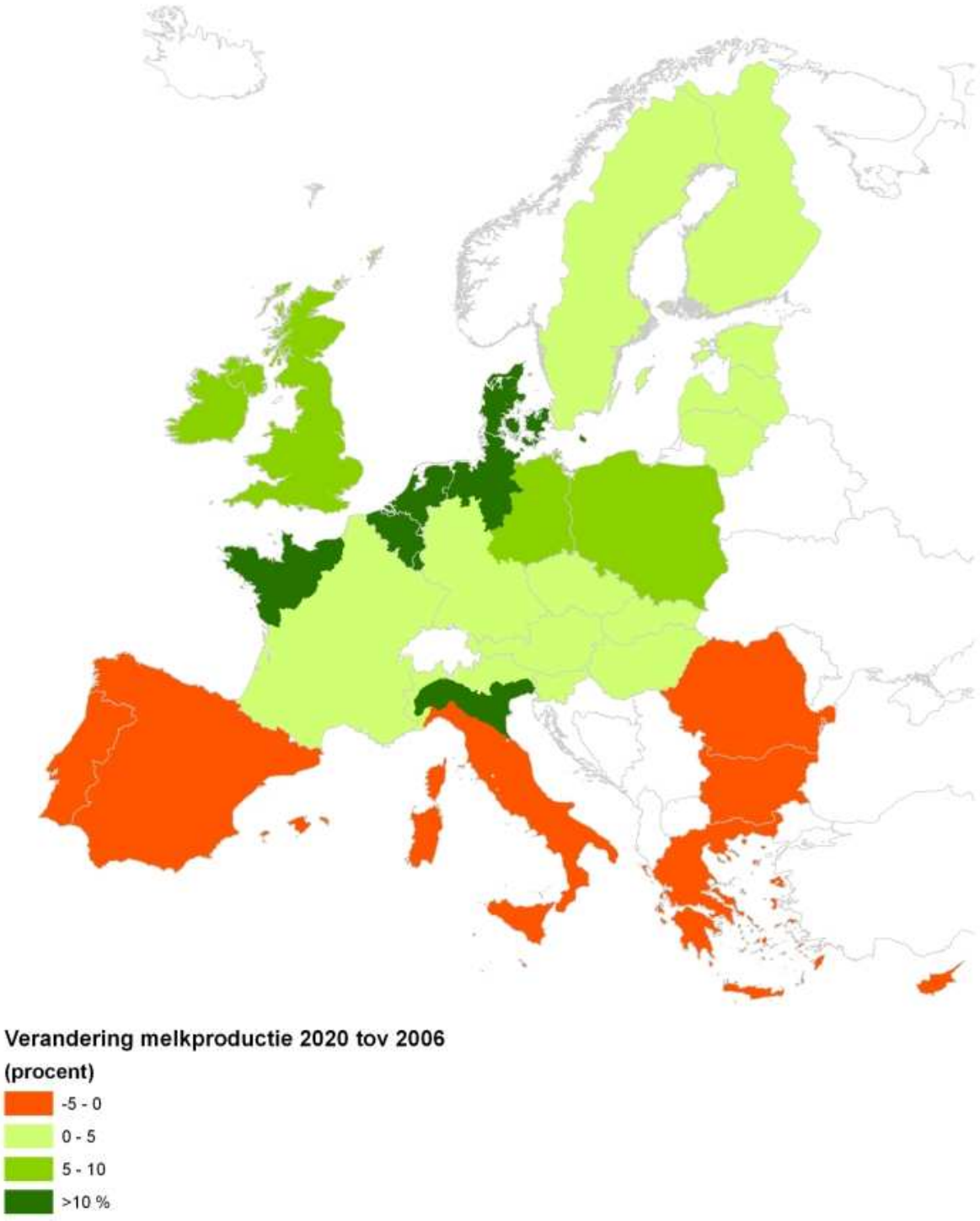


Figure 1. Percentage of change in the amount of milk produced in various EU-regions in 2020 compared to 2006 (presented in percentages)

In the South-European countries, Romania, Bulgaria, Alps-region and the Baltic states the perspectives are the least favourable for increased milk production. In South- and East-European countries this is mainly caused by relatively unfavourable scores for entrepreneurship, profitability and the competitive position of the processing industry. In the Alps-region and also in South-Europe particularly the higher production costs cause a hindrance to increased milk production.

5. Price fluctuations in the past

Approach of research into price fluctuations

To gain more insight into the future fluctuations of paid milk prices to dairy farmers, research was done on the causes and levels of the milk price fluctuations in New Zealand and the US in the past 15 years. In these countries dairy farmers have more experience with price fluctuations than within the EU. In the EU, fluctuations were set off by the EU-dairy policy which provided for buying up and storing dairy products in periods with low world market prices and for selling from the supplies built up in periods with high prices. Moreover, also price fluctuations in the Dutch pig industry were studied to see whether the magnitude of the fluctuations and their causes can also provide insight into the expected future milk price fluctuations.

United States

Research has shown that the causes of price fluctuations in the US are mainly due to fluctuations in the national supply of milk. Drought, high feed prices and more dairy farmers who stopped their business (as a result of low milk prices) were often the cause of decreased national production, due to which the milk price increased. Favourable growth conditions and low feed prices often lead to a higher production per cow and by this to more milk in the US, followed by lower prices. High prices often lead to farm expansions also and by this to a larger supply of milk, which in turn causes a decrease in milk price. So, the US had a milk cycle which can be compared to the well-known pig cycle (figure 2).

New Zealand

Because New Zealand exports approximately 90% of its dairy products, the New Zealand milk price is almost entirely determined by the price development on the world market. The New Zealand price has proven to be influenced by three factors in the past few years. Firstly, the world economic situation, with a focus on the economic growth in Asian countries. The more the economy grew there, the more positive the New Zealand milk price was. The second factor of importance was the exchange rate of the New Zealand dollar compared to the American one. The expensive New Zealand dollar pushed down the national price. If the NZ-dollar was cheap in relation to the US-dollar, this was also favourable for the milk price dairy farmers received. The third cause of fluctuations in price was the level of the intervention stocks in the EU. The larger the stocks, the more pressure on the world market prices for milk products.

Pig farming in the Netherlands

The same analysis of price fluctuations has also been done for the pork and piglet prices in the Dutch pig sector over the past 15 years. The well-known pig cycle often led to price fluctuations of plus and minus 25% compared to the average price during that period. The most important causes for price fluctuations in the pig sector the past years have been shortage and surplus of meat, incidents concerning feed and disease outbreaks. Animal diseases can have a positive effect on the price if the outbreak is in a rival country, but also a negative effect if they occur in the Netherlands or in a country the Netherlands exports to, which will then close its borders.

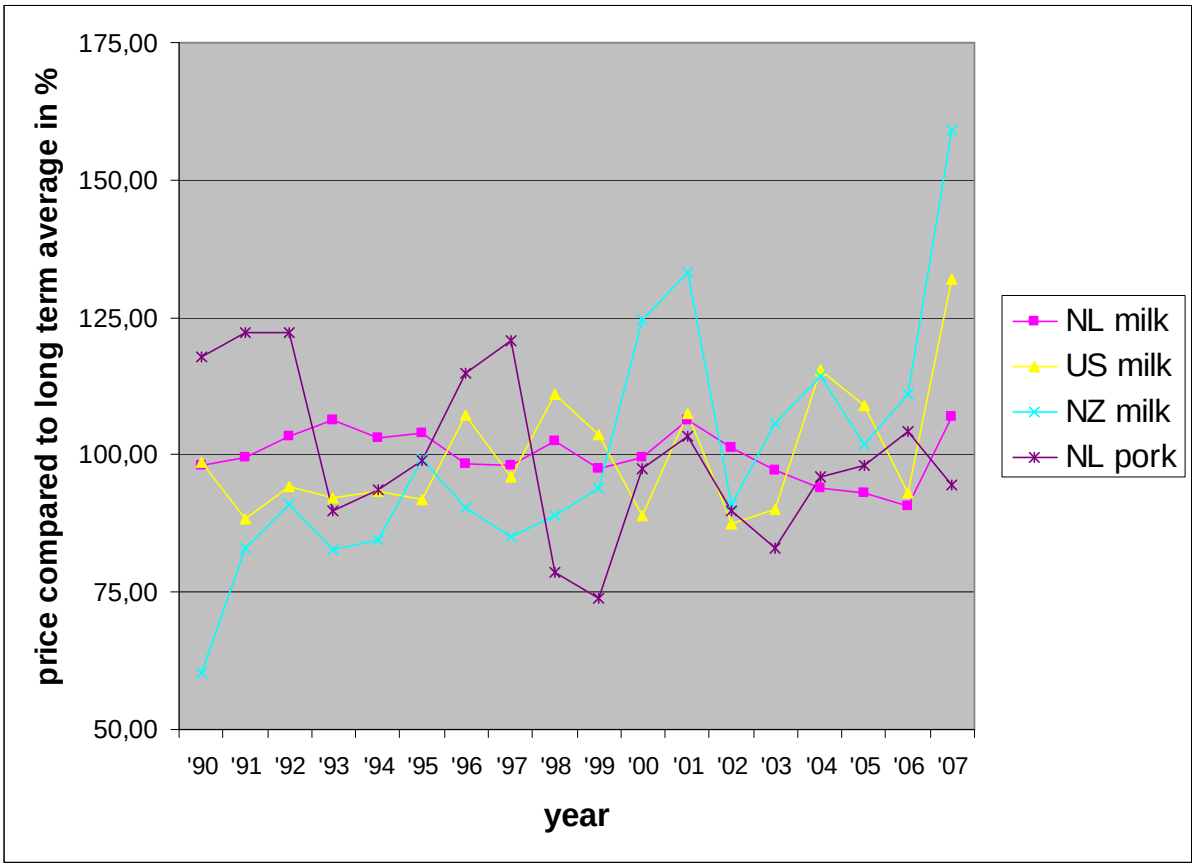
Consequences for income

More detailed research into the consequences of price fluctuations on income of dairy and pig farmers in the countries mentioned above, showed that price fluctuations of plus and minus 25% lead to much stronger fluctuations in income percentage-wise. A decrease in price of 25% results in a decrease or increase in income of a percentage twice as high.

General conclusion

From the data on the course of milk prices in the US and New Zealand it appears that milk prices fluctuate between years within a range of plus and minus 25% compared to the long-term average price (figure 2). This percentage is an indication of the possible future fluctuations in milk prices payed to the farmers in the Netherlands.

Figure 2. Fluctuations in milk prices in the Netherlands, US and New Zealand and in the price for pork in the Netherlands during the period of 1990 up to and including 2007



Sources: Data from this report; data of Dutch milk concern the average paying price in the Netherlands on the basis of data from PZ.

6. Results of workshops with experts and dairy farmers about anticipating the future

Approach

During one workshop 11 experts from the dairy sector (policymakers, agricultural industry and research) surveyed prioritised themes for the future of the dairy sector. They mentioned which adjustments they expect on the basis of those pictures of the future. Two workshops with eight and seven dairy farmers respectively were held, in which was indicated what measures they see as a response to future circumstances.

Themes that determine development

The workshops resulted in the following five themes to be of utmost importance for the development of the dairy sector in the coming 10 years:

1. Competition concerning raw materials, nationally (particularly land and manure) as well as internationally (particularly feed).
2. The EU-agricultural policy that will eventually lead to limiting price support and abolishment of the milk quota system.

3. Climate and environmental policy that will limit development in the dairy sector.
4. Technological developments that can particularly improve labour efficiency and the quality of cattle management.
5. Social involvement with the sector which will particularly affect animal welfare (including grazing) and spatial planning (size and location of farms).

Farm adaptations

According to the participating experts and dairy farmers, the five most important adaptations for farm and farmer in the next 5 years are:

1. Improving entrepreneurship.
   All groups agree that this is the most important measure to take, to improve perspective. The underlying concrete actions are: utilising personal qualities, paying attention to the environment (society and other entrepreneurs) and translate its signals to one's own dairy farm and lastly defining and carrying out one's own business strategy.
2. Expanding the farm.
   This concerns farm expansion in general (buildings, land and cattle), but particularly building new barns.
3. Improving labour efficiency.
   This will particularly be realised by using new technologies and by more precise choices concerning automation versus personnel. This also includes improvement and simplification of the farm organisation.
4. Improving cattle management.
   Improvements can be obtained concerning animal welfare, health, feeding and rearing youngstock.
5. Better utilisation of land and roughage/feed.
   Increasing costs make better utilisation necessary.

7. Results of survey among Dutch dairy farmers

Expansion

The survey among 78 future aimed dairy farmers shows that expansion in production capacity is their most important way of business development. They expect to produce approximately 50% more milk in 2012 than they did in 2007. This will be realised by an increase in milk quotas, land and facilities and extra personnel. The farmers expect that the debt per kg of milk in 2012 will be the same (again) as in 2007, which is € 1.30/kg of milk. According to the authors this debt seems to be not consistent with the heavy investments that are needed to realise the expected expansion.

The group surveyed already had a larger than average farm and is thus not likely to be representative of the total group of dairy farmers in the Netherlands. Their results indicate however what the future farmers want to focus on. Classical themes such as feeding and milking skills are still the most important areas of attention, but immediately after these themes are management themes such as strategy and organisation.

Farm adaptations

By investing in technology, the farmers want particularly focus on improving labour efficiency, for example automatic drinking machines for calves and manure slides. Neither the automatic milking equipment, nor the robot for feeding has a high priority.

Increasing milk production per cow, paying off an extra amount, investing in extra cow places, outsourcing harvesting and buying extra land is the priority order to respond to a high milk price. With a low milk price livestock farmers might rear their youngstock on the farm again and – within the framework of anticyclical investment –build a new barn.

8. Worldwide survey of farm adaptations

Approach

In December 2007 and January 2008 a survey was done among dairy industry experts from various EU-countries (seven), the US (six) and New Zealand (one person) as to trends and expected decisions by dairy

farmers during the period 2008 up to and including 2012. The questions in this survey strongly corresponded to those in the survey among Dutch dairy farmers. Experts were approached who had an adequate knowledge about dairy farmers within their country or state (in the US). They have pronounced upon expected developments in trends and decision making by dairy farmers in their country. In selecting these experts particular attention was paid to whether they would be able to picture the behaviour of the farmers in their country. Some of these experts were interviewed by phone more extensively. They were particularly asked which measures they knew for responding to price fluctuations.

Conclusions

From this international survey of important themes for the dairy farmers in the next 5 years, four central themes popped up:

1. Anticipating and responding to *fluctuations in milk price, feed price and thus income.*
   The common expectation is that the recent record prices for milk and experiences with strong fluctuations in the US and New Zealand will make preparing for less high prices and income extremely urgent.
2. *Realising expansion*, including a strategic outlook. In all countries a rapid increase in herd size is worked at. This trend is continued without abatement, at high as well as at low milk prices.
3. *Improving skills.* Especially for animal welfare, feed, milking and monitoring management parameters.
4. *Realising personnel management*. This is strongly related to increase in farm size. The quality of personnel management greatly affects the results of the expansion.

9. Crucial decisions for dairy farmers

Experts and dairy farmers have indicated how dairy farmers are going to anticipate changing circumstances in the next 5 to 10 years. These results lead to five central themes which concern five crucial decisions for the Dutch dairy farmer in the next 5 years, with a view to the development of market and production circumstances in the next 10 years. Survey 2 describes and explains. All themes are further explained in the next sections.

Overview 2. The five themes and key decisions in brief

1. **ENTREPRENEURSHIP**
   Dutch experts and dairy farmers strongly emphasize that improving the quality of entrepreneurship is a very important measure in order to anticipate on future challenges and also that there much to be gained in this field for dairy farmers.
   How do I improve my entrepreneurship?

2. **STRATEGY AIMED AT EXPANSION**
   Income improvement by increase in size is primarily aimed at by both Dutch dairy farmers and farmers throughout the world.
   How can I expand my dairy business?
   - **With or without purchase of milk quotas?**
   - **With or without land purchase?**
   - **With or without building new barns?**
   - **With or without extra personnel?**

3. **PRICE FLUCTUATIONS**
   The stronger dependency on the world market probably leads to stronger fluctuations in prices of milk and feed (and hence fluctuations in income) than we are used to in the Netherlands
   How do I prepare the farm for fluctuations in prices of milk and feed?

4. **FARM ORGANISATION**
   Due to expansion, Dutch dairy farmers have a stronger need to make the farm organisation more simple, so that 1) they will have a better overview; 2) operational adaptations can be made more easily and 3) external personnel can be hired more easily.
   How can I keep farm organisation simple?

5. **EXTRA WORK: PERSONNEL OR AUTOMATION?**
   Expansion of farms means that more external personnel are needed. Dutch farmers are hesitant in hiring external labour and hinder therefore their potential of expansion.
   How do I decide between personnel or automation?

10. Expansion

The struggle between expansion and profitability

Dutch dairy farmers are very interested in increase in scale, but the prices of assets and costs of production are high compared to other West-European countries, which is particularly caused by:

- Milk quotas: in June 2008 this price is approximately € 0.90/kg of milk and is expected to gradually decrease to 0 in the period to 2015.
- Housing: the costs are approximately € 4,000 per extra cow place, excluding milking equipment and feed storage.
- Land: dependent on the region the prices vary between € 25,000 and € 50,000 per ha.
- Manure disposal: dependent on the region prices vary between approximately € 5 and € 20/m^3.
- Labour: yearly costs of one full time employee are approximately € 40,000.

These high prices also explain why the questions under 9 concerning expansion are extremely crucial ones. The answers to these questions determine the amount of investment when increasing production. If farmers increase their milk production and buy extra land to avoid costs of purchasing roughage and manure disposal, this will lead to an investment of € 36,000 per extra dairy cow under average Dutch conditions, that is € 4.50/kg of milk at a milk production of 8000 kg of milk/cow. If no land is bought and with clearly cheaper housing than is usually the case, these amounts can be decreased to € 13,000 or € 1.60/kg of milk. If these investments are done with extra loan, they will lead to annual costs per extra kg of milk which are considerably higher than a milk price of € 0.30 to € 0.35, the price many dairy farmers and consultants assume in making plans for the coming five to seven years. Also for a well-performing Dutch farm (Group 25% highest gross margin/kg of milk) investing with borrowed money (usual in the Netherlands), the yearly costs are mostly higher than the mentioned price of € 0.35/kg of milk. This means that expansion often involves a decrease in profit and cash flow. Expansion is only feasible when the farm – prior to the expansion - has sufficient cash flow to meet this loss. In that case expansion is, indeed, not profitable but yet feasible in the sense that the farm after expansion can meet the obligations to pay its expenses.

Results of expansion plans

To illustrate the consequences of expansion for the cash flow on Dutch dairy farms, calculations have been made to get insight into the effects of four different expansion scenarios. The study objects are two farms that want to increase from 600,000 kg of milk to 1,000,000 kg of milk: an average farm and a high profit farm (see table 1 for details). Four scenarios are considered:

A. No expansion: the farm only uses the legally permitted milk quota liberalisation to expand.
B. Expansion 2009: the farm realises expansion completely in 2009.
C. Gradual Expansion: the farm increases production by one-sixth of the planned 400,000 kg each year. At the stage of an overpopulation of 120% a new barn is built.
D. Expansion 2015: the farm realises its expansion plan only in 2015, when the milk quota system is abolished. Investing in quotas is no longer needed.

The assumptions presented in table 1 apply to the two farms involved in the calculations. It is also assumed that each farm increases in quotas by 1% as a result of quota liberalisation up to 2015. This level of annual increase of production continues after 2015.

Rapid expansion results in strong decrease in net cash flow

The high investment costs for expansion and the level of debt before investing in combination with investing with loan capital are the most important reasons for the low level of net cash flow at expansion in the coming years.

With gradual expansion the net cash flow drops considerably in 2011, because the farm invests heavily in new facilities. Subsequently the net cash flow increases more rapidly towards 2015 than at expansion 2015, because the financial burden is lower due to the lower investment in quota and the farm increases gradually its stocking rate.

Figure 3 shows the economic result of the expansion scenarios for the average farm. This economic result is expressed in net cash flow, being a measure for the cash flow that is left after all payments are done including interest, private drawing, taxes, loan repayments and investments for replacing machines and equipment. This net cash flow is available for investments or savings.

Furthermore, the assumptions in the left-hand column of table 1 apply to figure 3..

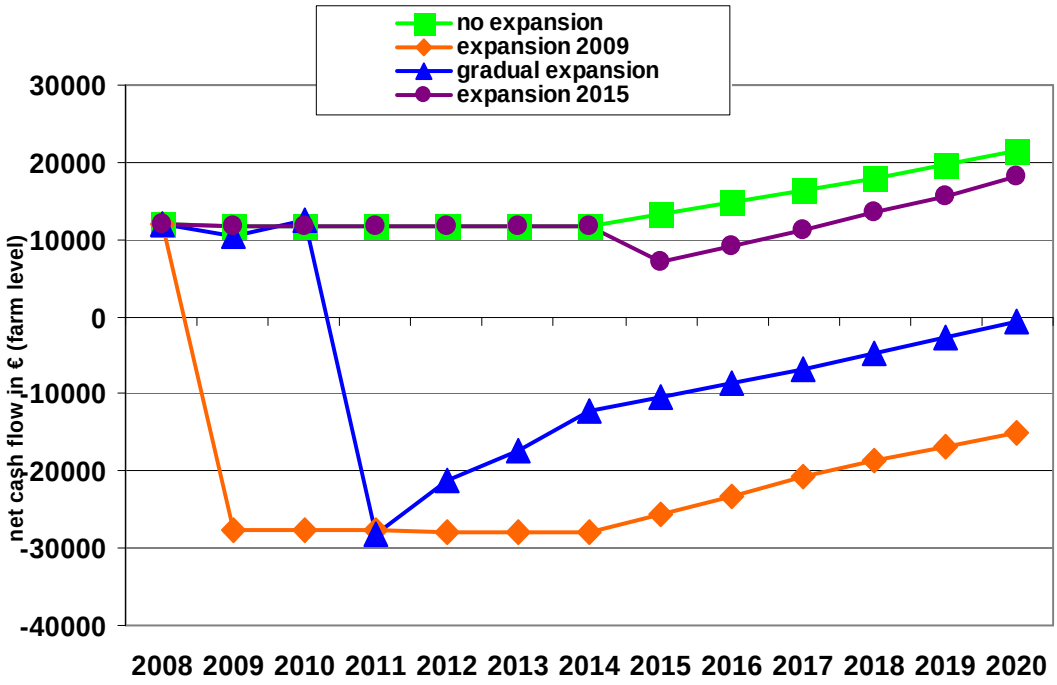
Table 1. Assumptions for the two types of farms (average and high profit farm)

	Average Farm	High profit farm
Debt per kg of milk before expansion (in €)	0.90	0.50
Gross margin (output minus variable costs in € per 100 kg of milk)	Average	Average + € 2.50
Investment in buildings in € per adult cow	4,000	3,000
Price per milk cow (incl. young stock)	1,500	1,500
Investment in milking equipment	30,000	0
Investment in feed storage	50,000	0
Manure disposal costs per m3 manure	15	5

Other prices for both farms: milk 33 ct per kg, concentrates 18 ct per kg, labour € 20 per hour, roughage € 1,400 per ha, milk quota € 0.75 per kg in 2009 (0 in 2014).

We can see in figure 3 that the net cash flow with expansion in 2009 is much lower than with no expansion, but also lower than with a gradual expansion and with expansion in 2015. Account is taken of a decreasing quota price at approaching the final date of the quotas. The long-term average milk price is assumed to be € 0.33 per kg. The net cash flow decreases at a rapid expansion in 2009 to almost € 30,000 negative. This negative net cash flow means that the farm cannot meet all obligations to pay. In this case the obligatory repayments have been reduced by the deficit in cash flow, which causes the debt to the bank to be at a higher level for a longer period. In reality chances are high that the farmer will abandon the expansion plan with such a negative cash flow.

Figure 3 Net cash flow in the years 2008 up to including 2020 for different expansion scenarios for the 75-dairy cow average farm.

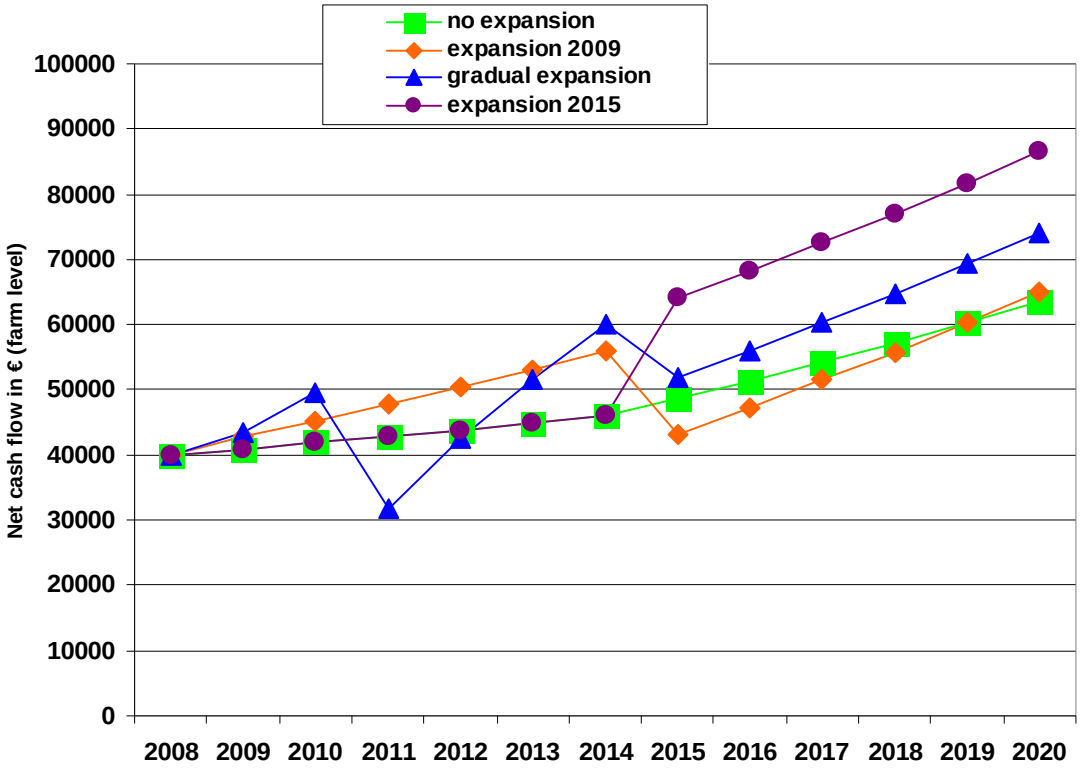


Obviously, the cash flows for 'expansion 2015' and 'no expansion' are the same until 2014. Investments with expansion are also in 2015 that high that 'no expansion' is still to be preferred over 'expansion'.

The high profit farm has a more favourable expansion perspective. In figure 4 the same results are presented for the High profit farm. The High profit farm combines a number of favourable assumptions (see table 1). Here the picture is much more positive for expansion than in figure 3. We can see that expansion in 2009 in the short term produces even better cash flows than no expansion. In the long run this is not true, however, because in 2015 all farms that invested before 2015 in milk quotas drop in net cash flow. This is due to the fact that from 2015 on the tax advantage of depreciating milk quotas will have disappeared, so from 2015 on the tax payments will slightly go up.

The most important conclusion from figure 4 is that expansion 2015 is also for the high profit farm the most attractive expansion scenario. From 2015 on, investing in quota is no longer necessary, so this farm with an above-average gross margin can immediately realise a considerable net cash flow; even a much higher one than without expansion.

Figure 3 Net cash flow in the years 2008 up to and including 2020 for different expansion scenarios for the 75-dairy cow high profit farm



Rapid expansion not profitable, but yet feasible

The parameter 'net cash flow' does not assess whether an investment is profitable or not. So, we need to assess the profit. In all calculations for the Standard as well as for the High profit farm, the profit is reduced in the years after expansion. It is also true that in general the farm types with the highest net cash flow also have the highest profit. In practice, decision-making on expansion in the Netherlands is generally aimed at feasibility of the investment ("Can I fulfil my obligations to pay?") rather than at the return on investment. The parameter net cash flow indicates to what extent the plan is feasible.

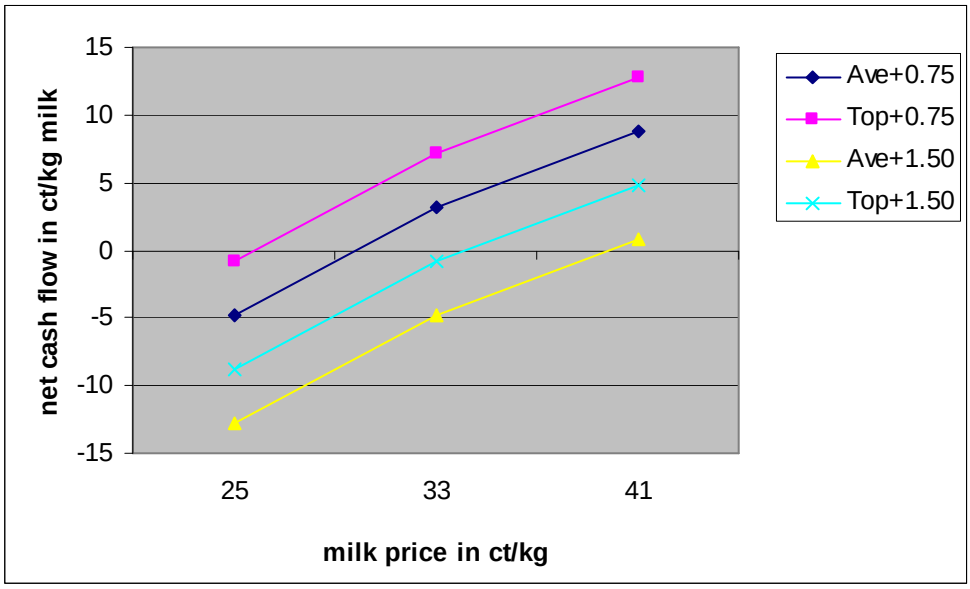
Conclusions concerning expansion

1. Farms with average results have poor expansion possibilities in the Netherlands.
   Only farms that belong to the 25%-best profit farms and combine this with low investments per kg of milk when expanding and not too much debt per kg of milk have perspectives for expansion in the short term.
2. Due to the high Dutch quota costs, postponement of expansion at an anticipated long-term average milk price of € 0.33 is almost always more attractive than investing in the coming years, for both average farms and High profit farms.
3. If expansion does not offer perspectives on the basis of current plans, farms should increase the gross margin, pay their repayments and possibly consider smaller expansion steps. These measures will have to prevent the net cash flow to decrease after expansion.

11. Price fluctuations

On the basis of earlier mentioned studies (see 4) price fluctuations of plus and minus 25% are expected for milk compared to a long term average. If we assume € 0.33 for the long term average, this will mean that the expected fluctuations in price will range between € 0.25 and € 0.41. Figure 5 presents what these fluctuations will mean to net cash flow of four different farm types. When the net cash flow per kg of milk decreases below 0, the farm has problems to fulfil its obligations to pay its creditors.

Figure 5. The level of the net cash flow per kg of milk in relation to the milk price for four farm situations



Explanation farm situations:
Ave+0.75= Average farm for cost price and debt of € 0.75 per kg of milk
Top+0.75= 25%-best farm for cost price and debt of € 0.75 per kg of milk
Ave+1.50= Average farm for cost price and debt of € 1.50 per kg of milk
Top+1.50=25%-best farm for cost price and debt of € 1.50 per kg of milk

25%-best farm does not run a high risk

Figure 5 shows that the 25%-best farm for profit with a debt of € 0.75 per kg of milk has a positive net cash flow at almost all price levels used here. Only at a price of € 0.25 per kg of milk is the net cash flow just below zero (- 1 cent). With negative net cash flows the following adaptations are most obvious:

1. Improving the gross margin (profits minus direct costs) or limiting expenses that belong to the fixed costs (contract work, labour and maintenance).
2. Realising extra income from outside the farm by the farmer or partner(s).
3. Postponing investments for new machines or equipment.
4. Reducing private drawings.
5. Reducing repayments.
6. Increasing debt load.

Average farm runs a higher risk

For the average farm in figure 5, the results for net cash flow are less favourable, because the farm has already 4 cents less with the usual farm management. Figure 5 shows that on the average farm with a low debt of € 0.75, the net cash flow becomes negative at a milk price of approximately € 0.29. This is the point in figure 5 where the line "Ave+0.75" crosses the zero line. The average farm with the higher debt of € 1.50 already reaches a negative net cash flow at a milk price of € 0.40. So, for the latter farm, a debt level of € 1.50 per kg of milk is not feasible, when we expect a long term average milk price of € 0.33 per kg.

Effect of farm size
The representation in cents per kg of milk does not consider the effect of farm size. If we also take that into account it will be clear that a shortage of fluid assets of 2 cents per kg of milk on a farm with 500,000 kg of milk quotas results in a total shortage of € 10,000. Is this quota 1,500,000, however, then the shortage is € 30,000. For both cases, the question is: is the farm able to set off this shortage? For example, by the above-mentioned measures.
What has been described for fluctuations in milk price also largely applies to fluctuations in prices of feed, manure disposal, interest and energy.

12. Keep it safe and simple (KISS)

In October 2007 a session was held with a group of eight EDF-dairy farmers to survey with what adaptations Dutch dairy farmers could anticipate the New Reality. From this session it became clear that for the coming years the adaptation "realise a simpler farm organisation via KISS-approach" was seen as an important adaptation. In the follow-up session with practically the same group, the KISS-approach was further fleshed out. This section presents the end result.

Why do Dutch dairy farmers opt for simplicity?
Together with the dairy farmers it was investigated why Dutch dairy farmers are strongly interested in KISS to keep the farm organisation simple. From the answers two reasons came up:

1. **Precondition for being able to work with personnel**
   Rather a transparent farm management is talked about: it should be easy to explain the system to the workers. Simple working methods mean fewer risks of errors and an absolute must when more people should be able to do the same activity.
2. **Precondition for keeping the farm in control**
   By standard operating procedures and by steering and monitoring on the basis of a limited number of important parameters, it remains possible to keep control of the entire farm.

The farmers also indicated that these preconditions can only be fulfilled by taking the farmer and the co-workers into account when defining working methods and plans. Therefore, the realisation of KISS has to be done farm-specifically.

With the help of the KISS-meter below, a dairy farm can be made KISS-proof, in the following way:

- Fill in the column "Fill in" and tick the right number of points in one of the two last columns.
- Total up all points at the end.
- The assessment is as follows:

Points	Assessment
61-80 points	You are very KISS-proof. You know how to organise your farm in a simple way and create a pleasant work climate.
41-60 points	You are heading towards the right direction in organising your farm according to KISS. Just some other adaptations and your farm will be KISS-proof
21-40 points	You have done a few steps towards KISS, but if you want to become really KISS-proof, many more adaptations have to be done. In the checklist you can see as to what points the score is much lower than the maximum. Those are the points to be improved towards a KISS-farm system
0-20 points	Your farm is far from KISS-proof. Do you think KISS is the right system for you? If yes, you can use the checklist to help you to make your farm more KISS.

KISS-meter for dairy farmers

Ouestion/assignment	Fill in	Yes	No
A. Organise yourself			
Do things you are good at	Good at: Not good at:	5	0
Know your own strong and weak points	Strong points: Weak points:	5	0
Plan private time	Planning:	5	0
Do boring jobs first		5	0
B. Cattle management			
Work preventively • Suitable type of cow • Vaccination • Pens for calving and routing • Sand in pens	 Type of cow: Against:	 1 1 1 1	 0 0 0 0
Treating • Selection gate + treatment alley • Treatment plan mastitis and claws • Timely disposal of problem cows		 2 1 1	 0 0 0
Simple rations • Few products in ration • Dry cows a cheap ration	 Number: Ration:	 2 2	 0 0
Housing • Separation: department for care and other part • All cattle under one roof		 2 2	 0 0
Carefully evaluate: grazing yes/no Does it contribute to KISS?		4	0
C. Financial management			
Investing: the art to skip • Simple feed wagon • Simple milking parlour (use it longer) • Yes: automated drinking machine for calves	 Realisation: Realisation:	 3 3 2	 0 0 0
Carefully evaluate: automation Does it contribute to KISS?		2	0
Limit monitoring parameters • Create key parameters • Monitor them and change when necessary	Which parameters: Daily Weekly Monthly	 2 2 2 4	 0 0 0 0
D. Personnel and labour			
Fixed division of tasks between workers • Give responsibilities • Keep them motivated • Direct towards results	 Which: How: Standards:	 3 3 2	 0 0 0
Work with standard operating procedures for activities that are done by more them one worker	Protocols for:	4	0
Fixed daily, weekly, monthly schedule	Which agreements?	4	0
Which activities need not be done?	Which?	4	0
Total number of points			

13. Extra work: personnel or automation?

The questionnaire among Dutch farmers showed that they want to expand, but many of them do not like to employ personnel. They do not find personnel management very interesting either. Yet realisation of the intended expansion plans is most of the time only possible when extra workers are hired. On the Dutch dairy farms, expansion is usually realised by relatively small expansion steps that do not allow to hire full timers, so expansion will often have to be combined with flex workers or possibly extra automation. This is certainly true for the expansion phase between 75 and 200 dairy cows; the range within many Dutch farms are now expanding. On those farms the question keeps coming back whether certain activities have to be automated or that the farmer had better hire (extra) personnel. The list below can support in that consideration. As far as personnel is concerned, usually part timers that are hired; in many cases temporary workers, youngsters or contract workers. As soon as they are employed, the question arises: how to manage personnel?

Dealing with personnel often sounds as if it is a task in itself, but many farms learn gradually by doing. First one hires a worker for one shift, then someone extra for milking a few times per week and gradually more experience is gained with dealing with personnel.

Checklist: Which kind of automation or labour for which activity?

1. Please tick which possibility you consider.
2. In case of automation: also indicate which machine or equipment you consider.
3. Take the activities you want to do yourself into account.

	Hours per week				
Activity	Automation by	Contract work	Temporary worker	Permanent worker	Other
Milking					
Feeding					
Cattle care					
Rearing young stock					
Harvesting					
Administration					
Management					
Total					

14. Conclusions and recommendations for dairy farmers

The elaboration of the themes results in the following conclusions and recommendations. They are presented per theme.

Theme Entrepreneurship

1. Utilise your own personal strengths and skills in a better way.
2. Evaluate dairy outlooks and developments in dairy markets and society to recognize opportunities and threats.
3. Develop a vision on the basis of outlooks and trends and translate this to your own farm strategy.
4. Get more return from capital invested in farm assets.

Theme Expansion

1. The 25% farms with the highest profit have significant better perspectives for expansion
2. Investment per extra kg of milk greatly affects the feasibility of expansion plans.
3. Postponing expansion until after abolishment of the quota system is the best scenario for expansion.

Theme Price fluctuations

1. Explore consequences of high and low milk prices for the net cash flow of your business.
2. Gross margin and debt per kg of milk strongly determine the financial risks of low milk prices.
3. Repayment of debt in good times is best preparation for a periods with low milk prices.
4. Reducing expense and increasing revenues should be emphasized in good as well as in bad times.

Theme Farm organisation/ Keep it Simple and Safe (KISS)-approach

1. KISS offers simplicity and clarity to farmer and hired labour.
2. Personal-directed and simple agreements are the essence of KISS.

Theme Extra work: personnel or automation?

1. In case of expansion plans, an adequate consideration is needed whether to hire extra personnel or to apply automation.
2. Explore which type of worker fits for each activity.
3. Managing personnel can be learned.

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