Cow Signals®

A practical guide to a profitable dairy farm

Economics & Milking

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Vetvice provides reliable scientific and practical knowledge about cattle farming to dairy farmers, their advisers and suppliers. Our goal is maximum welfare and health for animals and humans with economically profitable production of high-quality foods.

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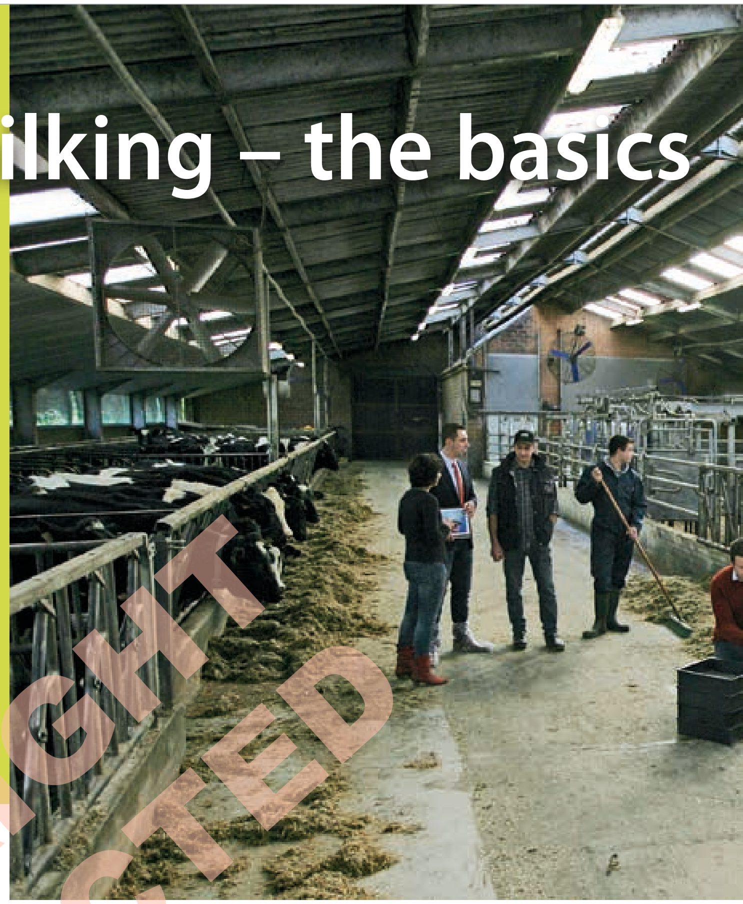
Liba offers dairy farmers economic management support. To achieve this, we use our practical experience supported by science. Liba creates business accounting and financial plans for investments and supports dairy farmers' daily management.

Open the cover flap for the glossary.

Economics and milking – the basics

In essence, a dairy farmer converts feed into milk and meat. To achieve this, the dairy farmer utilizes the following production factors: land, capital, labour and management. While using these factors, he/she must make choices. Some choices have an influence over years, others for only months or days. The dairy farm's economics describe how much money you earned with the choices you made.



One of the goals of a dairy farm is to achieve economically sustainable milk production within the limits of your production factors. You have to make choices for this. You evaluate your choices and goals using your economic figures.

The economics of milking

Economically sustainable management of a dairy farm means you should aim for maximum profit, while investing sufficiently in the survival of your business without exhausting or misusing your production factors.
A dairy farmer can achieve this through making the right choices in the short, medium and long term.

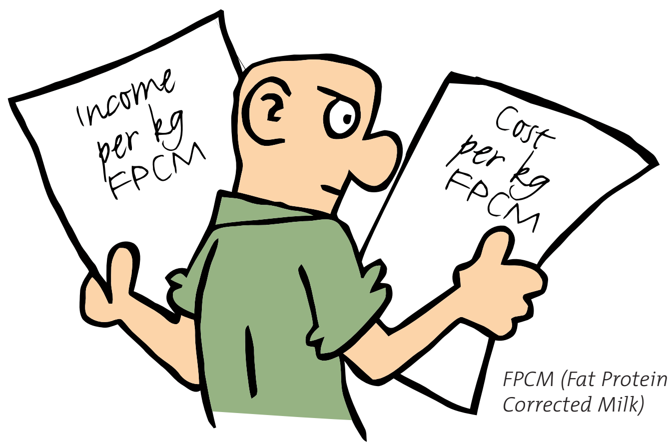
Making profit

Revenues from products sold and added value in livestock and reserve stocks make up the total revenue. A dairy farm's revenues consist of milk and livestock sales (fattening, breeding and slaughter stock) and also include subsidies. The difference between total revenue and total expenses is the amount earned, which we consider profit.
You can increase profit in three ways:

1. increase production: produce and sell more or get a higher price
2. reduce costs
3. convert costs into profit more efficiently

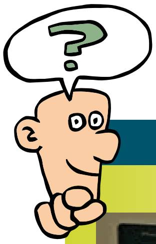
Critical break-even price

The critical break-even price is the milk price you need for your business to pay all its bills, excluding replacement investments. This is an important measurement and benchmark. It will determine your ability to pay your bills with a low milk price.

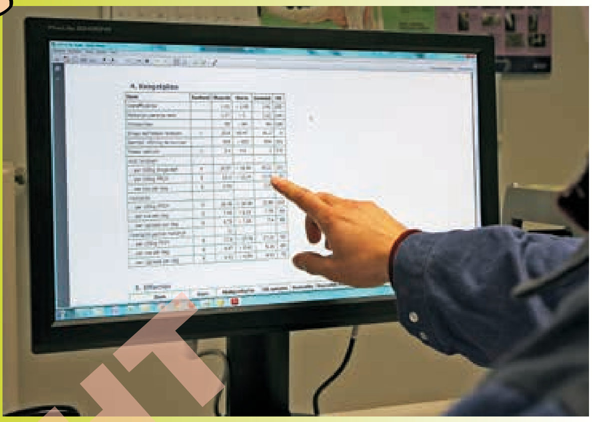


FPCM (Fat Protein Corrected Milk)

In a highly volatile market, prices may fall below the critical break-even price for many dairy farms. Dairy farms with the lowest critical break–even price can survive that sort of crisis more easily.



Question **How do you keep yourself sharp?**

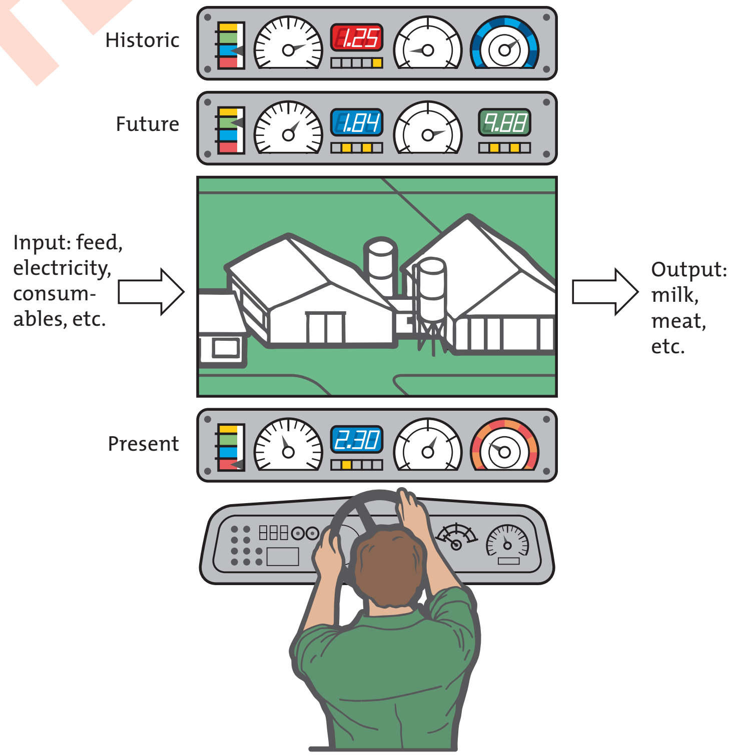


Comparisons with other farms (benchmarking) and with your own results are good methods of staying sharp. Naturally, you want to be one of the better farms and continuously improve your business. By comparing your figures to the benchmark, you can evaluate your own position and evolution.

Managing for profit

To manage, you need to know precisely what is happening on your farm. You must measure and evaluate so you can modify management. Your historic figures give you feedback and you use them to try making improvements for both the present and the future. This is 'feed-forward'. The key performance indicators (KPIs) keep you up-to-date. These are: milk production per cow, feed intake, feed costs, mortality, calving age of young cattle, etc. You try keeping them at or above the target value. Everything you do must be focused on continued success – tomorrow, next week and next year.

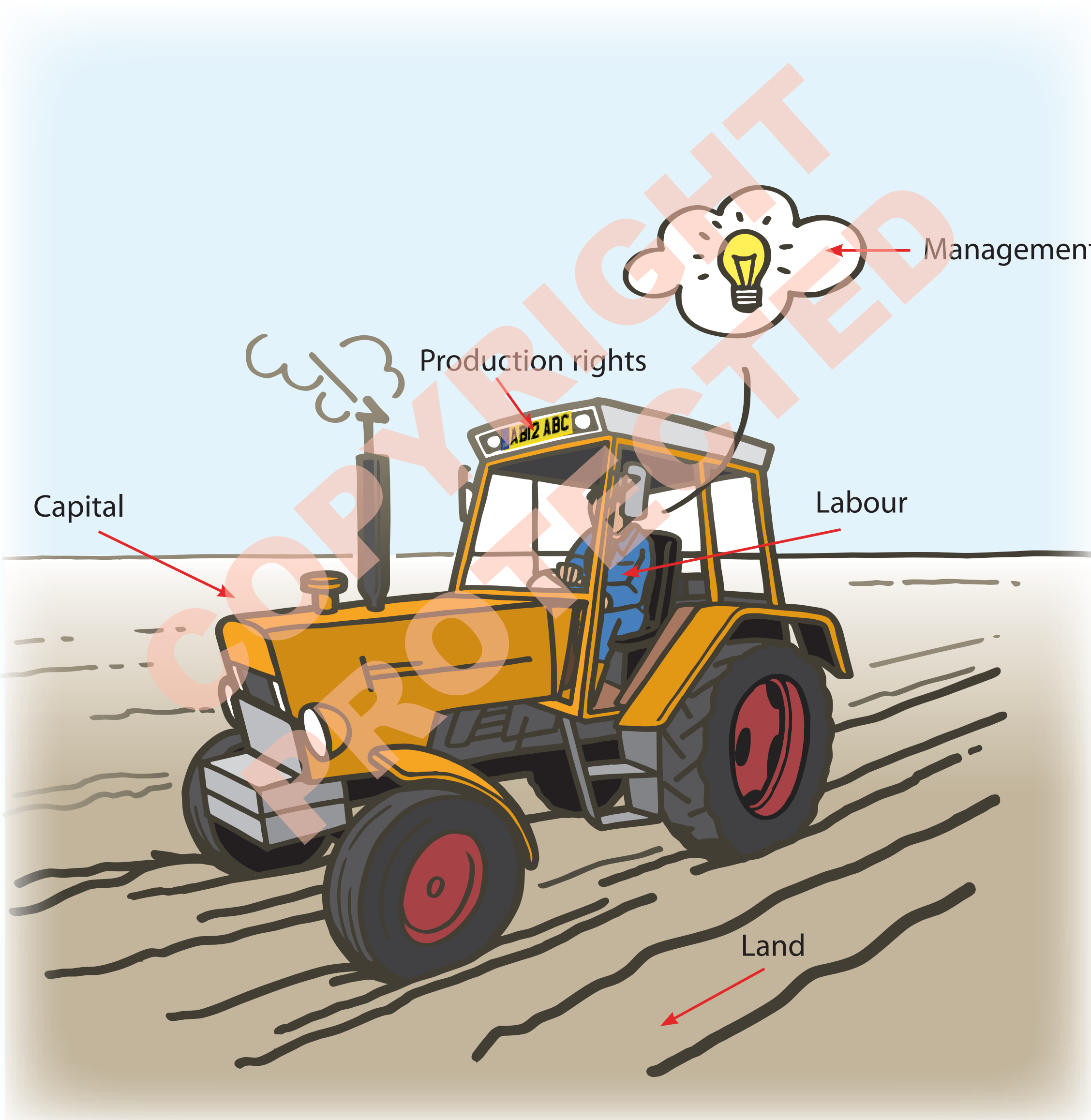
Types of production information



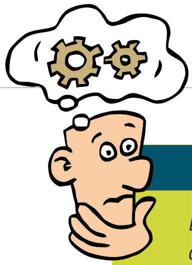
You have three types of information available for management purposes: the present state of affairs (critical process indicators, CPIs), past progress (feedback) and information providing you with an indication of future progress (feed-forward).

Profit arises from optimal utilisation of production factors

A dairy farm business generates income through its production factors; utilising land, capital, labour and management. The fourth production factor, management, is a powerful determining factor of income level. In addition, we consider production rights as a separate production factor.
To keep the herd on your farm fed and cared for, you need a certain amount of land, capital, labour and production rights. If one production factor is in short supply, you need to compensate for that and your incurred costs increase. Using your own as well as bought-in production factors as efficiently as possible will provide maximum profit. A combination of the quality of your production factors and management skills will determine whether you achieve higher yields per hectare, utilise capital better, increase profit per hour worked, create higher milk and livestock yield, etc.



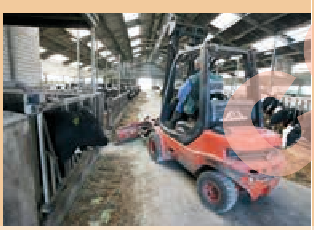
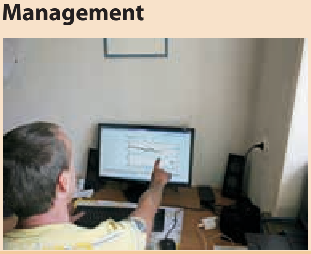
Utilisation of production factors will ultimately determine economic profit. That is why, in economics, we calculate yield per hectare, per labour hour and per euro of equity. To even begin producing milk, you need the rights and permits (production rights) to grow crops, deal with manure, and market the milk produced.



Exercise — Assessing a business

By assessing production factors, you can compare businesses. Company A with a certain amount of land, capital and labour realises an income of X, while company B has the same amount of land, capital and labour and an income of Y. Management is difficult to measure directly, but you can assess it through comparison of results with other comparable businesses.
As an entrepreneur, you can then assess how your business is performing and to what extent it is fit for long-term survival.

Assessment of production factors

Factor	Unit	Measure	Improve through
Land 	kg FPCM per ha	good = >18,000 kg FPCM/ha reasonable = 15,000–18,000 kg FPCM/ha poor = <15,000 kg FPCM/ha	- buying or leasing land - manure disposal and feed buying contracts - contract out raising of replacement heifers - high (forage) efficiency
Capital 	% own equity	good = ≥ 50% reasonable = 25–50% poor = ≤ 25%	- principal repayments - saving - investment using own means
Labour 	kg milk per hour	Labour is difficult to measure. It depends strongly on: - land location and configuration - level of automation - amount of contracted work	- investment in work efficiency - contracted work - housing facilities - automation
Management 	business economic benchmark position	good = top 25% of the benchmark reasonable = roughly the average of the benchmark poor = the bottom 25% of the benchmark	- education/reading - working methodically with evaluations - consultants - hiring appropriate personnel
Production rights 	permits production rights	good = enough production rights and the opportunity to buy more reasonable = enough production rights but difficulty buying more poor = insufficient production rights and difficulty buying more	- requesting or buying - authorization renewal

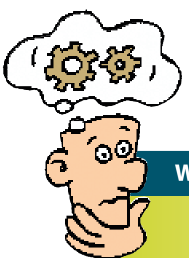
A maximum of 2 production factors can have a poor rating provided that, in contrast, at least 2 other production factors are rated good.

Do not decide too quickly

You must weigh every decision thoroughly in order to reduce the risk of making wrong choices. This requires you to always compare multiple options, balancing revenues and benefits against the costs and consequences. You can afford to make wrong choices when it concerns relatively small decisions. In the case of decisions with major impact on your business, you must invest the time to make the right choice. Buying more land and investing in new housing are examples. When making such choices, work with clear timelines and a task list.

Intuition counts

Intuition is important. Identify whether something feels good or not. Try to specify why it feels that way. In the decision-making process, you can often express this in financial terms.
A bad feeling is good reason to take more time to make a decision. This allows you to consider your choice carefully.



Weighing it up | **Saying no**

Doing nothing and saying 'no' is always an option to consider.

A decision-making process consists of four steps:

1. Describe the **goal** you want to achieve and how it fits into the business's goals (strategy). The answer consists of a list of requirements – sometimes a very short one.
2. Identify all the **possibilities**, options, scenarios and alternatives. Evaluate at least three possibilities.
3. Evaluate and **compare** the possibilities. Use a pros-and-cons list. When doing this, use as many solid and reliable facts as possible. For example: your bookkeeping, economic analyses, key indicators, industry figures and realistic market prices. This evaluation will also show the effective constraints, the minimum prices you need to get and the maximums you can pay.
4. Make a **good choice** that feels comfortable to you, your family, employees, etc. The negotiation process is a part of this. A good buy should also include binding agreements concerning delivery, guarantees, responsibilities and service. Through good preparation, you will know exactly what your quality requirements, price limits and constraints are.

Poor sales arguments

Dealers want to have satisfied customers but primarily, they must sell their products. There are situations that can lead you to make a hasty decision with greater risk you will not make a proper assessment.

1. **Time pressure**
   As a buyer, you have to make a decision before a certain moment, otherwise the product may no longer be available or the offer will expire.
2. **Group pressure**
   'I sold lots of this product this week,' 'Everybody is buying it,' 'Our best-selling product,' 'So-and-so also bought it.'
3. **A bonus offer**
   'If you buy this now, you will get another product free or at a discount.' If you don't need the other product or would not have bought it otherwise, it is actually worth nothing to you.
4. **The product**
   The product is the 'absolute latest thing.' 'You're a progressive farmer. You must have it!'

Pros-and-cons list

Especially in the case of big decisions, you can make the comparisons in a list on paper or with a computer. Usually the pros concern the production process such as higher yields, lower cost, easier or less work and less risk.
Other advantages may be in satisfying marginal conditions such as investment in the environment, noise reduction or traffic safety around the farm.
Pros could also include social and lifestyle factors. Examples of these are: enjoyment of work, a good family situation, landscaping and farmyard beautification, dressing up buildings and visitor reception.
The cons are primarily financial costs in addition to any of the points above that appear negative and any increased risks.

Make a pros-and-cons list

You put the advantages (pros) on the left of your pros–and–cons list. The disadvantages (cons) such as costs and constraints go on the right.

It is helpful to discuss a pros-and-cons list with another person. Encourage each other to be as specific as possible (how much and when), to clarify the main and secondary issues and to separate feelings from facts.

Comparison pays off

1. Compare suppliers

You save on outlays by comparing suppliers. Make sure you always compare the same quality. You should prepare in advance by asking for a price offer for a specific product.

2. Study groups

During study groups, we put figures on the table and compare them. Here you can see strategic, tactical and operational decisions reflected in the financial and technical results. At the same time, you can openly discuss the decisions you want to make.

3. Talk to consultants and colleagues

Consult advisers or fellow dairy farmers who are honest and trustworthy. This can give you insight into strategic, tactical and operational issues that come into play regarding your decision.

Decision levels

There are basically 3 types of decisions in business management:

1. strategic
2. tactical
3. operational

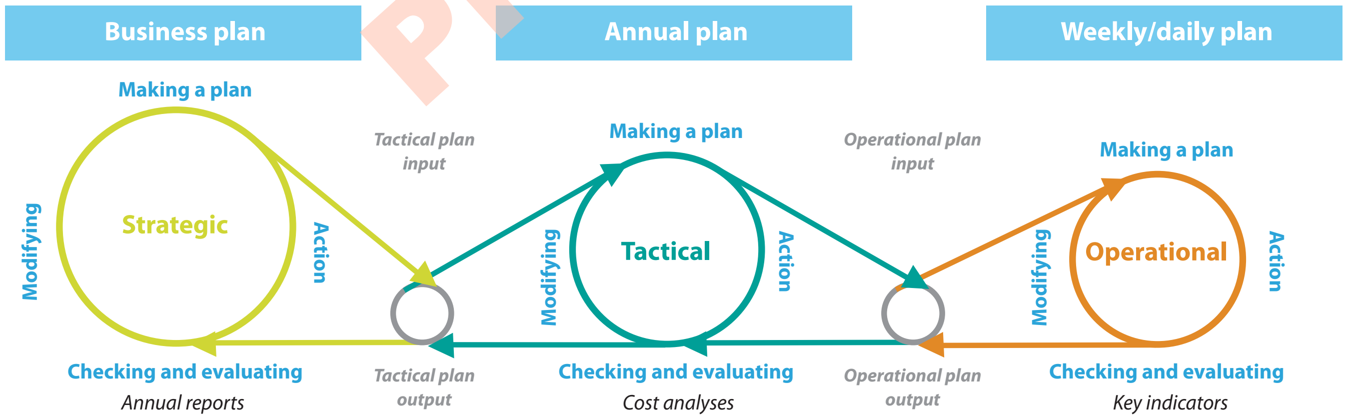
In this order, they have lasting impacts on the company and strength of control on the business. A wrong strategic decision can lead to years of economic loss.
Strategic and tactical decisions determine the greater part of the issues and situations you work with operationally (daily). During the daily milking, feeding and husbandry, you are engaging in the actual production.

Your strategy is your compass

The strategy is the entrepreneur's compass. It concretely describes the amount and quality of the products you want to produce, how you want to develop your business and your method of production. For the latter, consider things like investment in automation, outsourcing young livestock rearing, amount of contract work, growth without land and similar considerations.

Entrepreneur, manager, worker or dairy farmer? Who are you? Or are you all of them?

A dairy farmer performs varying functions within his business. He personally sets out the strategic framework, sets out plans and implements the daily work.



You make an evaluation at each management or decision level. You do this based on annual reports, consultation with the family, daily indicators and checks, the management programme etc. Setting up fixed consultation meetings with family, staff or consultants can give you a broader view of your business.

Strategic: entrepreneur

With a choice of strategy, you set your business's production structure for a long period of time. These choices have a great influence on the business and are not easily reversible. As a dairy farmer, you make these kinds of choices only a few times in your career. A good strategic choice will result in improved capacity for making profit with the condition you manage well at tactical and operational decision levels. Costs of strategic choices are part of your fixed costs.

For example, should I invest in new housing? Which milking system? Which feeding system? Shall I buy land? What financing levels can we and do we want to have? Which breeding goal?

Approach:
A strategic choice must have a sound base. You do this by creating a business plan. A business plan consists of a vision, a proper budget, realistic assessment of technical results and the intended production goals. This gives insight into your economic and technical strengths and weaknesses, the risks and constraints.

Tactical: manager

Tactical decisions cover the medium term; from a few weeks up to two years ahead. They largely determine the variable cost structure and the production you can get with your existing buildings and environment.

For example: growing and purchasing feed. This obliges you to use that feed during a specific period. This (partially) fixes your total ration cost for that period.
Other examples include cropping plans, work schedules, cash flow projections, bedding material in the stalls and choosing between home inseminations or technician service.

Approach:
To make a tactical choice, you assess if it will fit into your business's strategy and deliver financially.
Tactical decisions often put a dairy farmer's planning and business talents to work.

Operational: worker

Operational decisions cover the daily operations on the farm. The essence is always achieving good results, with a critical eye on costs and revenues. High earnings come from the combination of high yields and appropriate costs.

Examples include all the daily work such as milking, feeding, checks on animals, husbandry, cutting grass, etc.

Approach:
Through all your work, you have the choice of good, reasonable or poor results. You can implement the work effectively and efficiently.
Here, the dairy farmer becomes cow manager, feed manager, labour manager and cost manager.

Planning

For any important step concerning choices or working methods, you always need to make a plan before implementation. Do not start haphazardly or in an improvised way. After creating your plan, you should check and evaluate so you can modify it if necessary. You carry on with this cycle so you continue improving your business. Examples of plans are business plans, work planning, cropping plans, a protocol or cash flow projections.

Why use plans?

If you work according to a plan, you have a number of advantages:

1. You remain within your budget because you can purchase the right tools and materials in advance.
2. You use less time because you have a clear picture of how you will implement it.
3. You develop routines and work according to protocols.
4. You can measure whether you achieve the desired results with your working method.
5. You can easily let someone else assess your plan or working method.
6. You can ask for advice.
7. You can easily show another person how to carry out the task.

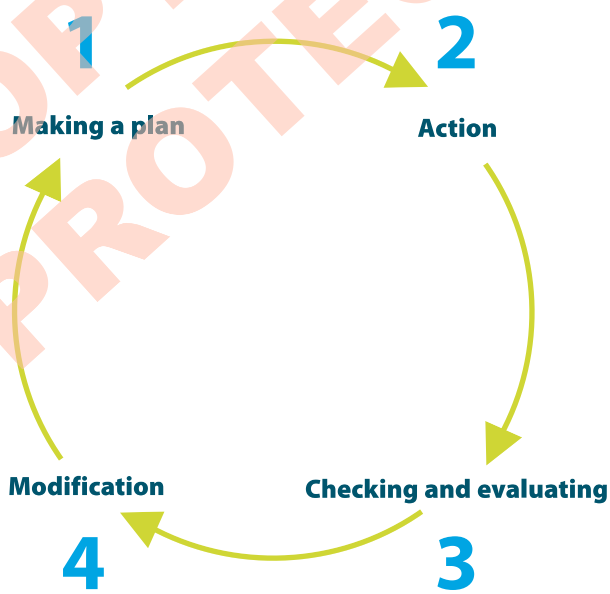
SMART

Everyone has experience with a plan that he or she could not stick to. You can avoid this by ensuring the plan has the following characteristics:

Specific – described as accurately as possible
Measurable – everything expressed in measurable units
Acceptable – you and your colleagues agree to it
Realistic – reasonable in practice and possible in your situation
Time-bound – with dates for starting, achieving goals and evaluation.

The management cycle

You should make a plan for what you want to do. This can be in writing, e.g. a cropping plan; however, you can also make a plan in your head, as long as you make it explicit in a way so you can explain it precisely to everybody else. A plan must include goals, who is responsible for the tasks, the date when you will evaluate, etc.



You are working to a plan so you stick to it. If you notice it is not succeeding, you can re-evaluate immediately.

You assess if you have reached the desired results and if there is anything in the plan you can improve. Has this investment increased my profit, reduced work pressure, made my social life easier, etc.? Have the ration modifications resulted in economic and/or technical improvements? Does everybody always work according to the plan? If not, how can I accomplish that? Could it be cheaper, easier, faster or more secure?

You improve the existing plan or make a new plan based on the evaluation. Sometimes you do this during evaluation. Sometimes it requires (much) more time, orientation, assistance and analysis.

Strategic (business plan)

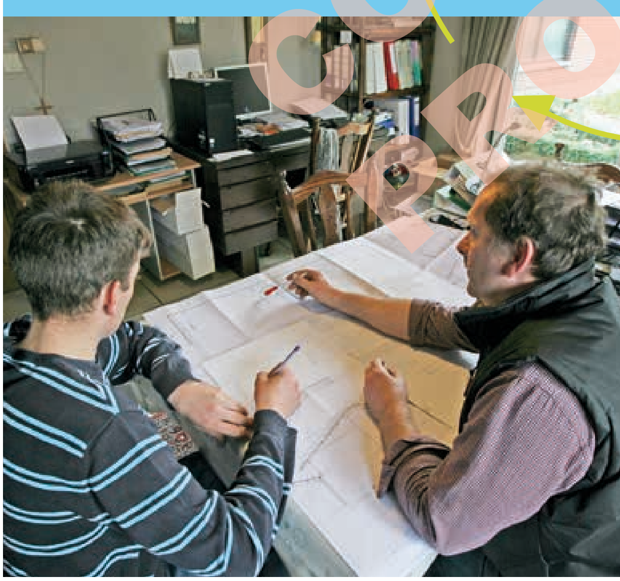
I am going to invest in a new barn; therefore, I will make a business plan. Is it financially achievable/optimal? What goals must you achieve?

Making a plan

Build your new barn , follow the production plan and achieve your goals.

Action

Modifications



When necessary, you modify your goals to work within your existing possibilities.

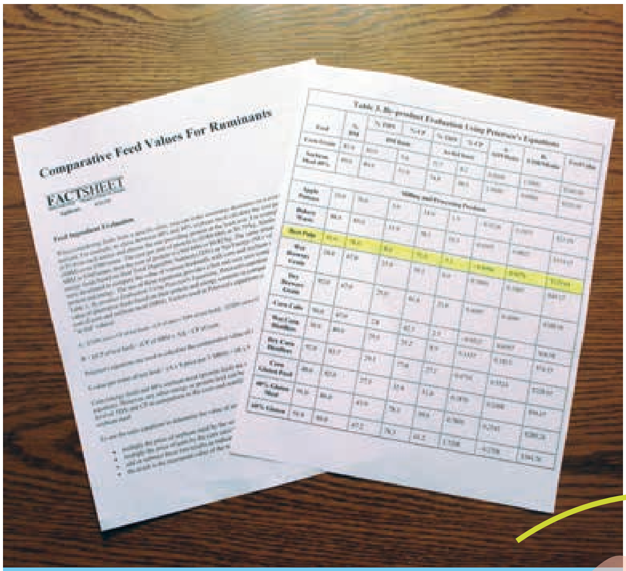
Check and evaluate

You evaluate if you have achieved your goals during financial statement discussions.

Tactical (annual plan)

Should I buy sugar beet pulp? It fits into my ration and is currently a low–cost product. There is a silo available for storage. I will not buy all the sugar beet pulp at once because the price is dropping.

I will buy the sugar beet pulp in a number of lots and fit it into the ration.



Making a plan

Action

Modifications

Check and evaluate

When necessary, you modify the amount of sugar beet pulp in the ration.

I evaluate the total cost of my ration, milk production and the cows' health.

Operational (weekly/daily plan)

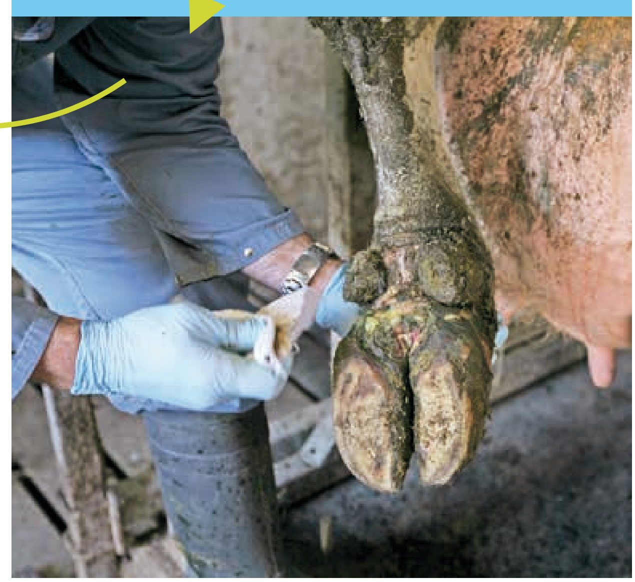
What treatment should I give this cow? Is it an acute case or can I trim her hooves after a few days with the rest?

Making a plan

The dairy farmer trims the cow's hooves today and gives her treatment.

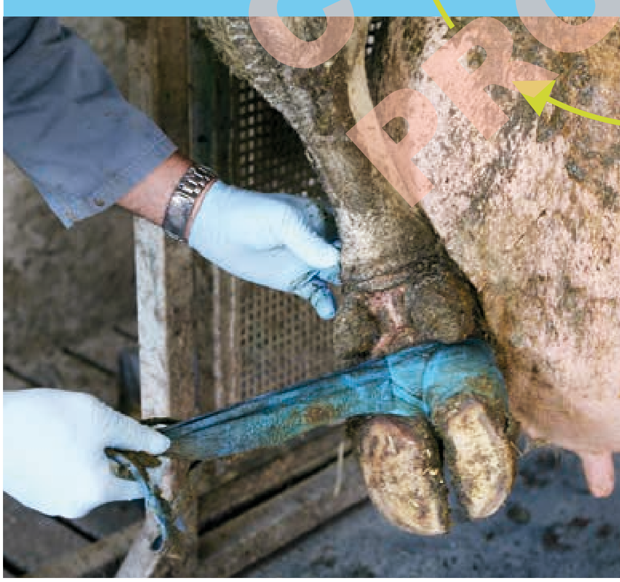
Action

Check and evaluate



The dairy farmer evaluates his treatment.

Modifications



If the cow is still limping, she gets treatment again.

Economics & Milking

'The first practical economics book for dairy farmers – with a low dry matter content'

'If you cannot measure it, you can't manage it.' Economics is more important than ever on a dairy farm. A successful dairy farmer manages his business's economic indicators and can use them to run the business and make choices.

Economics & Milking helps you to pick up your business's economic indicators quickly, to interpret them and take appropriate action. You will gain insight and become a better and smarter entrepreneur.

The important part of economic management is the art of decision-making. ***Economics & Milking*** explains which approaches you should use for decision-making. Shall I build the new barn? Can I grow without land? How do I get maximum dry matter yield from my land? At what price can I buy in feed? When should I sell a cow?

Economics & Milking will show you, in a practical way, how to optimize the economic management of your dairy farm. It teaches you the basics of economic thinking, trading and working on a dairy farm with neat down-to-earth questions and examples taken from practice.

Economics & Milking is a publication in the ***Cow Signals***® series. ***Cow Signals***® presents practical knowledge about animal-focused dairy cattle management.

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