

Farming in the 2012 context

What scope is there to regain profitability?

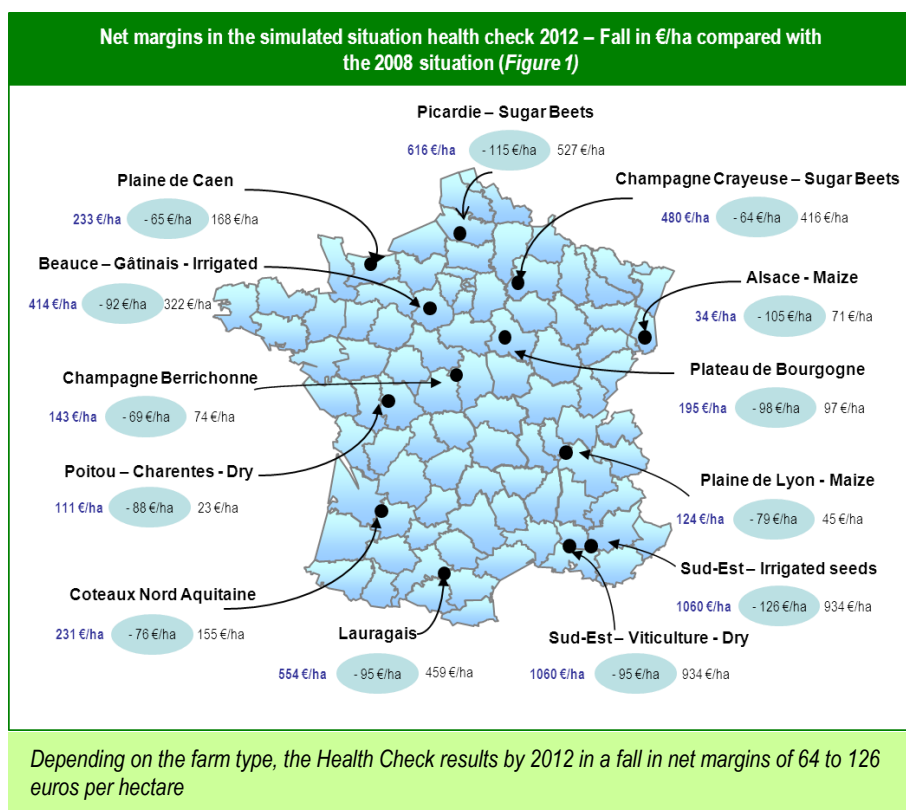
The fall in CAP support makes arable farms more vulnerable in times of economic difficulties. Margins for technical manoeuvre exist to regain profitability and to be economically more robust in the face of climatic and economic risks.



One of the levers to regain profitability is an improvement in the efficiency of inputs.



Faced with new CAP rules which will come into force progressively from 2010, arable farms have no alternative but to respond. According to an ARVALIS – Institut du végétal simulation of thirteen typical farms representative of French arable farms, the Health Check will result, on average, by 2012*, in a reduction of 22% in the level of CAP subsidy compared with the 2008 payment. This represents a fall in net margins of 64 to 126 €/ha (figure 1), depending on the cropping system, with an impact on profitability which is greater when the initial net margin is small. Apart from political decisions, profitability depends on the selling price of the crops and the purchase price of inputs, subject to big fluctuations.



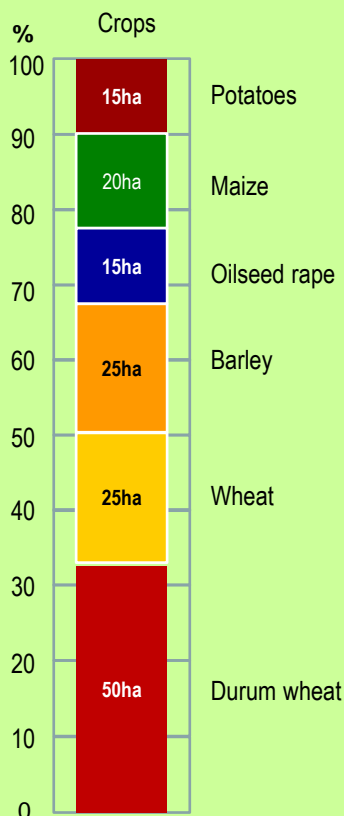
On the same set of farms, the net margins after the Health Check have been recalculated for a so-called « optimistic » economic context (2007 selling prices and 2008 input costs) and a « pessimistic » context (2005 selling prices and 2009 input prices). Whereas the impact of the health check seems trivial in the « optimistic » context, it is more worrying in the « pessimistic » context. On the « irrigated Beauce » farm for example (figure 2), the net margin of 414 €/ha in 2008 changes, for the same economic context, to 322 €/ha with the application of the Health Check. But it varies from + 901 €/ha to – 31 €/ha according to the economic situation simulated.

* When the modulation rate will reach its maximum level of 10 %.

Efficiency of inputs

The efficiency of inputs, expressed in €/ha, is the ratio of gross margin (excluding subsidies)/input costs. It is calculated for a field, or as an average for a crop or a farm. An efficiency of 3 signifies that 1€ invested in a crop produces 3€ of gross margin.

The Beauce Irrigated farm – real situation 2008 (Figure 2)



Farm characteristics

Cultivated area	150 ha
Man work unit	1.5
System	Arable crops – Irrigation
Crop types	Arable crops + potatoes No fallow
Soil type	Deep silty clay Shallow silty clay – Irrigation - (90 ha)
Department ref.	Eure et Loir / Loir et Cher

Average cultural practices

- 2-3 stubble ploughings, 1 pass with a power harrow
- Majority ploughed
- Cultivator-drills (1.5 ha/h)

Machinery

Traction	150 HP – 120 HP
Soil tillage	4 m spike harrow, 5 furrow plough, 4 m rotary harrow 4 m, 4 m power harrow
Planting	4 m pneumatic drill 6-row single-seed drill
Spraying-fertilizer spreading	24 m sprayer - 24 m spreader
Harvest	5 m combine harvester (200 HP)

Machinery costs: 505 €/ha (307 €/ha excluding potatoes)

NIV (New investment value) : 3 470/ha

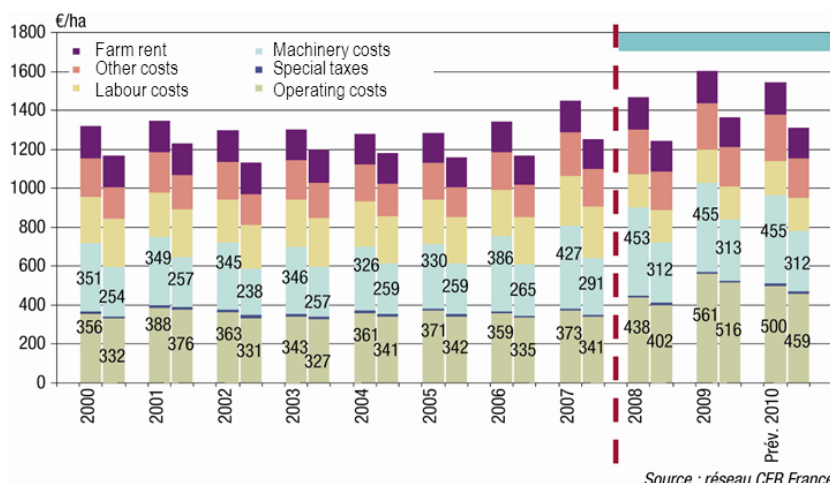
Traction: 1.8 HP/ha

Agronomic restrictions

Rotations	Oilseed crops 1 year in 3 Pulses crops 1 year in 4
Crops succession	Durum wheat ≤ 33 % Malting barley ≤ 15 %
Cash crops	Improver wheat ≤ 15 % Potatoes = 15 ha
Irrigation	Irrigated maize ≤ 60 ha Irrigated surface ≤ 90 ha

The example farm is an irrigated Beauce farm of 150 ha

Distribution of costs per hectare – wheat – Mean of sample vs « the 20 % best » (figure 3)



Source : réseau CER France

As the farmers have very little latitude as regards prices, the least vulnerable farms are those which will adopt strategies optimised for exploiting their machinery and with well thought-out cultural practices, whilst retaining a coherent strategy. Although every effort has been made since 1992, there is still some scope left to maintain or even improve the level of profitability.

According to the statistics from the wheat sample of the CER France network, the difference in total costs per hectare between the mean of the group and the « efficient » farms is about 200 €/ha (figure 3). The potential gain is 100-140 €/ha in machinery costs and 20-40 €/ha in operational costs. The scope for manoeuvre differs from one farm to another, from one region to another, and according to the initial level of optimisation.

Main opportunities for increasing profitability: machinery and operating costs.

Big price fluctuations are a recent feature of the history of European agriculture.



There still remain various possibilities for maintaining or improving profitability. Each should be explored.

In the study on typical farms, three levers were re-explored: adaptations of rotations, optimisation of machinery costs, and improvement of the efficiency of inputs.

Optimising rotations

Several factors could cause growers to change their rotations between now and 2012: the « total decoupling », which removes the incentive to grow one crop rather than another (e.g. bigger coupled grants for irrigated arable crops); new specific grants (e.g. grain legumes crop subsidies); in vulnerable zones, the obligation to grow cover crops in autumn (4th Nitrate Directive Program).

Work on the optimisation of rotations was done on the set of typical farms, from gross margins recalculated for 2012, to find the rotation which yields the maximum farm gross margin while conforming with the agronomic constraints of rotation. In the example of the irrigated Beauce farm, this revealed a net margin of 313 €/ha, (+ 30 €/ha), with the appearance of spring-sown peas and an increase in durum wheat and maize. In this example, the crops which were reduced were barleys, wheat and oilseed rape.

On average for France these gains are more modest (10 €/ha), but can be increased by 32 €/ha if the farm is eligible for the « 2010 » rotation agri-environmental measure and decides to apply for it.

With the exception of grain legumes crops and hard wheat in its traditional zone, the Health Check disconnects the CAP subsidies from the species cultivated and has caused them to lose part of their role as « income stabilisers ». In a volatile economic context and to cope with the risks due to the weather and diseases, agronomy is an increasingly important factor in the planning of rotations. On a 5-10 year time scale, the promising rotations are generally diversified.

A robust rotation, work productivity and efficiency of inputs are the three factors where improvements are possible.



The least vulnerable farms are those which have strategies optimised for exploiting their machinery, well thought-out cultural practices, and coherent production systems.

Optimising machinery costs

Studied for a long time, the optimisation of machinery costs is regaining interest in a more constrained economic context. Three factors for consideration emerge: the best use of the existing machinery; sharing of machinery; and the trend in soil tillage towards « simplified » techniques which reduce the use of ploughing. On the « irrigated Beauce » farm, where ploughing is customary, the elimination of ploughing (with a normal or rapid seed drill) reduces machinery costs by 40 €/ha on average (the cost of machinery + fuel). The changeover to direct sowing saves about 60 €/ha. However this decision needs to be accompanied by consideration of the capacity of the production system to support such a technique (i.e. soil type, rotation, risk of weed proliferation, type of crops etc.). On the irrigated Beauce farm, a compromise would be to limit the number of ploughings.

The optimisation of the machinery use is another way of improving costs by using the machinery on a larger area. In view of the number of days available with good working conditions in terms of weather, the average machinery pool of arable farms is often more than necessary. For the « irrigated Beauce » farm, the same machinery pool could cultivate another 100 ha in addition to the 150 ha of the farm, which would save about 35 €/ha. This figure could be applied in ways other than by enlarging the farm: sub-contract work, renting machinery to third parties etc.

Finally, joint investment in a machinery pool (as an initiative between neighbours or the creation of a CUMA - French machinery sharing cooperative - etc.) is another way of spreading the depreciation. The « irrigated Beauce » farm saves 10 €/ha by sharing soil tillage and drilling machinery and 28 €/ha by sharing harvesting machinery, with machinery chosen to cope with two farms.

A simple indicator can evaluate the degree of mechanisation of a farm: the traction power/ha (tractors + self-propelled vehicles, except combines). In a cereal system, the most optimised systems have an indicator of at least 1 HP/ha.



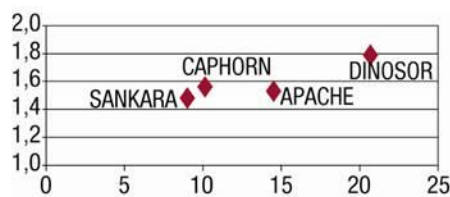
Improving the efficiency of inputs

The third lever is the improvement of the efficiency of inputs (see box), which varies greatly from farm to farm (from 1.7-2.90 €/ha for wheat in the Beauce – Gâtinais group in 2008). This consists for example of increasing the yield level for a given investment, or reducing the quantity of inputs while maintaining the yield. Several ways are worth reconsidering : adaptation of the nitrogen rates to the field by measuring residues, appropriate definition of the yield objective, choice of varieties adapted to the agronomic risks of the field (soil, sowing date, previous crops), choosing fungicide programmes and growth regulators to suit the field etc.

By way of illustration, the tolerance of varieties to diseases is not well exploited by the farmers. For example, for four varieties of wheat of different tolerance to diseases, the 2006 SCEES survey showed that the use of fungicides was more or less the same

(figure 4) for the 4 varieties. On the « irrigated Beauce » farm a better adaptation of the spraying programmes to the varieties saved 4 €/ha on the balance sheet for wheat. If one adds a better consideration of the choice of varieties, the economies are in the order of 20-30 €/ha.

Average fungicidal protection for 4 wheat varieties in 2006 (Fig. 4)



The tolerance of varieties to disease could be better exploited by farmers.

These approaches to optimisation can be explored for all crops. Technically, the optimisation of the efficiency of inputs often necessitates the use of numerous decision tools, but also to observe, plan for each particular field, and seize the ideal moment for treatments, etc.

The levers are not all cumulative

The levers mentioned have a variable effect on the net margin and are a new illustration that farmers must be more and more technically precise, and master all the elements of the equation of their net margin.

To identify the factors on which efforts should be concentrated, a first step can be the calculation of simple indicators: traction power/ha, efficiency of inputs, number of crops in the rotation. The comparison with other farmers on similar land, as part of group analyses with more sophisticated technical/economic indicators, can then identify the techniques towards which the farms should be guided.

The calculation of technical/economic indicators is a first step in the search for profitability. It enables one to identify the scope for manoeuvre on a given farm.

However, our proposals are not all mutually compatible. For example in the « irrigated Beauce » farm, one cannot adopt no-ploughing techniques and hope to sow large areas of spring peas on a silty clay: the risks of poor emergence are too high. Similarly, one would not try to sow durum wheat after maize without ploughing, because of the mycotoxins risk.

The pursuit of profitability should not be to the detriment of the coherence of the farming system, and the profitability gains calculated are not always cumulative. With sluggish markets, the technical levers currently developed cannot alone compensate for the effects of the Health Check (and the nitrate directive for vulnerable zones) but they are an indispensable first step towards more robust farms in the face of different risks threatening profitability.

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