

Finding the **hidden costs** of disease

When we choose not to prevent disease in a pig farm, we have to face not only the extra money for treating sick pigs and the wasted resources, but other opportunity costs. This article shows a practical point of view and gives you some ideas to raise productivity of a farm.

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Here's a question I have posed from time to time to raise awareness about the real value or cost of something. Assume you have a perfectly healthy pig on the truck to the slaughterhouse. Just to keep numbers easy to work with, assume it weighs 105kg, it has cost the farm €120 to produce and you expect to sell it for €140 netting a profit of €20. Next let's assume the pig begins to be sick and is in danger of dying. What is the maximum you could afford to spend now to prevent its death and sell it for the 140 euro as planned?

What is the opportunity cost?



Pig to the slaughterhouse

- Weight 105 kg
- Production cost €120
- Expected selling price €140



Profit: €20

If a pig gets sick



WHAT IS THE MAXIMUM YOU CAN SPEND TO PREVENT ITS DEATH?

• €20: €140 - €120 = €20

NO!

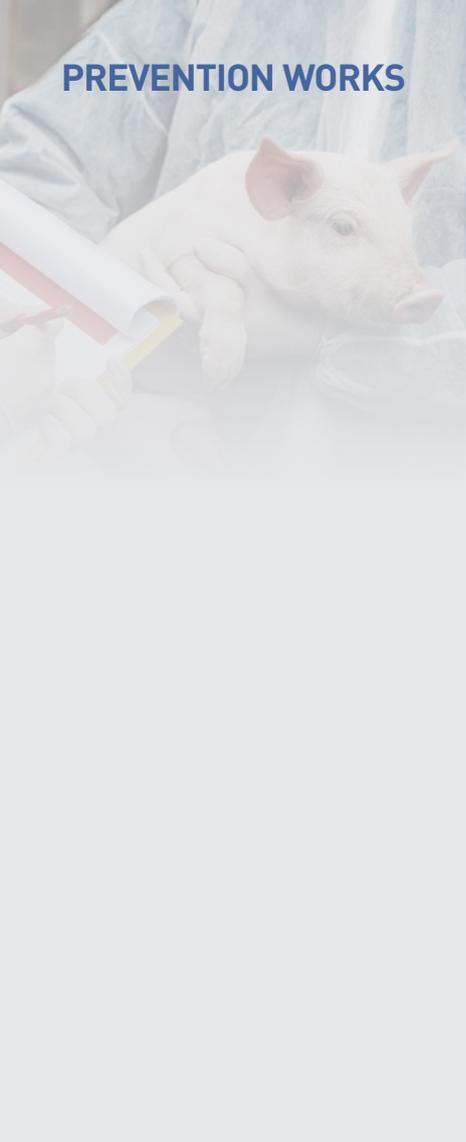
• €139 **YES!**



The biggest loss is the loss of the revenue which you were to receive at the sale, €140.

Most people think the answer is €20 and they reason this by noting that if they spend more than €20 they will no longer make a profit on the pig. A pig which doesn't make profit might as well die and not absorb any more resources. If you are in the 80% (by my unscientific poll of the past) who answered €20, you are going to be shocked to find out that you will be better off financially spending up to €139 *more* to save the pig rather than let it die. How on earth do we reach that conclusion? Do the math.

What is the loss if the pig dies? You certainly lose €120 in the cost which has already gone into its production, but this is not the biggest loss. The biggest loss is the loss of the revenue which you were to receive at the sale, €140. This is a loss which never appears in accounting sheets but is very real. It is a missed opportunity so we refer to it as an opportunity cost.



The biggest loss if a pig dies is the loss of the revenue to receive at the sale: it is a missed opportunity so we refer to it as an opportunity cost.

Let's work this out in typical accounting practices. If you let the pig die, you will lose €120 in cost already sunk into its production. If you spend another €139 and save the pig so that it can be sold your total cost of production is now €259. The loss in this case is €140 (revenue) – €259 (total cost) = -€119. If you let the pig die, your loss is -€120, the cost incurred before death. Which way offers the most profit (least loss?).

If you are surprised by this result it is a warning to shake up the way you think about what is a cost and a return. The real cost of anything is what must be given up to get it. Let's assume you leave work for a day and attend a conference which has a fee of €200 to register and attend. What is the cost of going to the conference? If you are adding your transportation cost etc., that is fine but it is small compared to the cost you are probably overlooking. The cost of being at the conference is what you gave up to go. So not only is it the cost of the registration and transportation etc. but it is the loss associated with what you would have accomplished had you been at work or somewhere else doing something productive or even relaxing.

Cost arises because of scarcity. You are a scarce resource and by that we mean that if you are at one place, you have given up the possibility to be at all other places and the things which could have been accomplished there today are lost forever. We refer to this cost as the opportunity cost of a choice. Practice thinking in terms of what you gave up because of the choices you are making today and don't limit yourself to costs which require a money payout to be "real".



An example of the opportunity cost of a choice

PORK PRODUCTION		ONE DAY AT WORK
Disease		
Not prevention or treatment	Prevention/ Treatment	
Cost of production €120 + Loss of the revenue at the sale €140	Cost of production €120 + Loss of the revenue at the sale €139 - Revenue at the sale €140	Fee of the conference + Transportation + The opportunity cost of a choice: Loss of what could have been accomplished at work

Prevention or treatment?

Let's think about this in terms of prevention. What is the cost of a preventable disease outbreak? In our enlightened way of understanding cost, it is everything we gave up or lost because we chose not to prevent it. This not only includes the extra money we must spend for treating the diseased pigs and the wasted resources which go into pigs which later die or fail to produce the expected outcome from a given set of inputs. This also includes a whole host of costs which do not make it into the accountant's ledger but are very real. What are some of these opportunity costs?

First, think of the valuable things we could have been doing besides treating sick pigs. Here is a starter list you can add to:



Fixing equipment and other items which have been deferred too long already.



Catching up on the record system.



Cleaning and sanitizing areas which have subtle buildups of waste which escape normal cleaning.



Adjusting feeders more carefully to optimize intake while minimizing waste.



Reviewing a training video.



Taking a well-deserved break to be refreshed for the next tasks.

Second, consider the income which would have been received but pigs either died or had to be sold at less than ideal weights. Maybe you kept them two weeks longer than normal to get to a more ideal weight but in doing so, you forever lost the opportunity for a new set of pigs to occupy that space and begin growing to produce profits. A pig space is a scarce resource and if you must use it two weeks longer than normal due to the slow growth caused by many preventable diseases, you have forever lost those two weeks in the life of the building for other more profitable production. The return on the investment in the building and equipment is permanently lowered as is the return on the investment in all the other resources used to produce the pigs.

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Prevention is the foundation of precision agriculture since it reduces or eliminates the biggest cause of weight variation, namely, disease.



Accounting systems selectively include costs and returns based on generally accepted conventions used worldwide so they are comparable everywhere. However, accounting systems do not account for all costs and returns which arise from a business. Understanding these other costs and returns helps you understand the real cost of actions like prevention. When you vaccinate pigs there is a real cost associated with the purchase and administration of the vaccine and includes some opportunity costs like what you or your veterinarian could have been doing instead of administering vaccines. However, the real value of vaccination is sometimes not understood, since it is often limited to the estimation of the lost profits if the disease was contracted. Now you know there are a lot more benefits and reduced costs associated with vaccination than preventing the lost profits from a disease. Can you name some significant ones?

Here is a starter set for you



Prevention is the foundation of precision agriculture since it reduces or eliminates the biggest cause of weight variation, namely, disease.



Less variation in production and its quality translates into long-term, low variance income/profit flow.



This characteristic increases the **ability of the farm to borrow money** and lowers the interest rates charged.



Better quality workers tend to gravitate to high performing farms where they can see the effects of their efforts in great production results.



A **high performing team and manager** tends to raise the productivity of a farm over time without increasing resources.



A **stable, low variance, high health** herd justifies the risk associated with producing under value enhancing brand opportunities such as antibiotic free. protocols.

Add your ideas here.