

# PRECISION DAIRY

## To Invest or not to invest? That is the question.



O'Leary, N., Ahrend, A., McDonagh, A,  
O'Brien, B. and Shalloo, L.

# Overview

1. Large potential
2. Early adopter risk - Period of uncertainty
3. How to advise farmers? – The problem to be addressed
4. Practical & flexible way of dealing with imperfect information

1. Does it work?
2. How quickly will it depreciate?
3. Will a farmer actually use it? (adherence factor)
4. If used, will it have impact? Dutch study 2008 – 2013

# Decision making with imperfect information

1. Frame the decision appropriately
2. Acknowledge limits of known information
3. Limit scope where judgement is required
4. Easy to use tool

# Precision Dairy Cost Benefit Tool (PDCBT) ?

## Inputs

- Costs of tool
- Desired Return On Interest

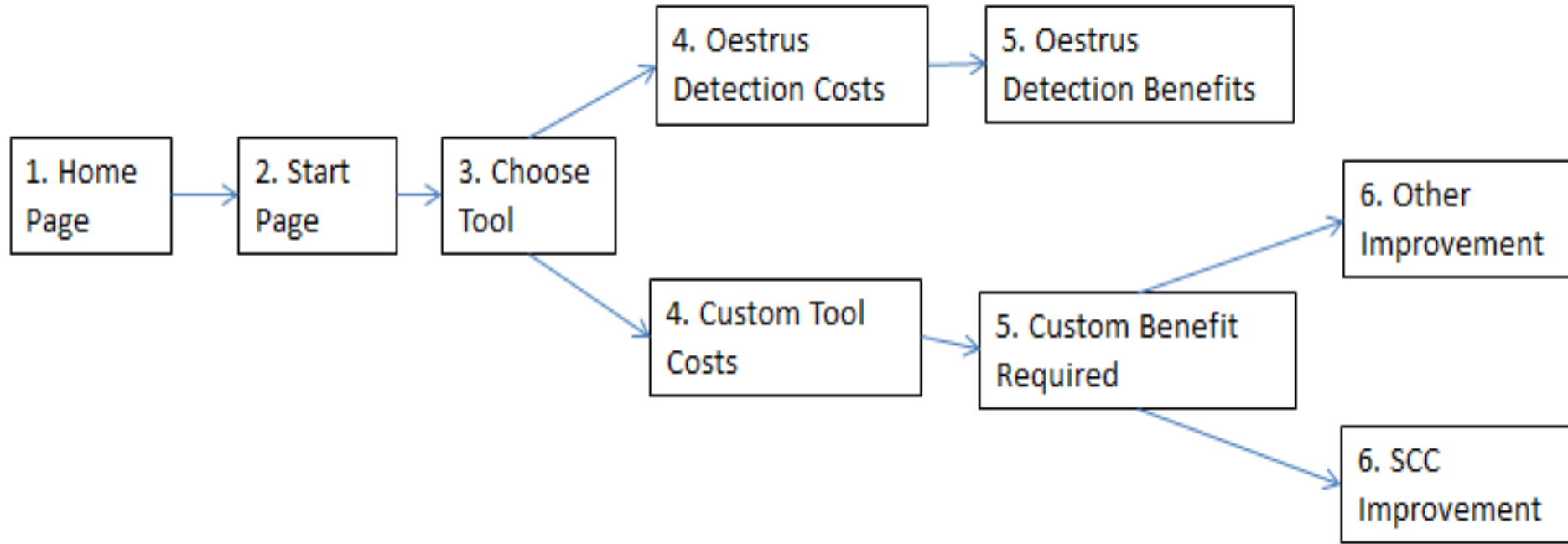
## Factors included


- Economic associations  
technical measure -> profit

## Output

- Likely technical improvement required to achieve expected return

# Precision Dairy Cost Benefit Tool (PDCBT) – 5/6 tabs



Your farm's details			
1	Number of cows		99
2	Hectares (grazing platform)		40
3	Milk <u>Solids</u> (kgs) Sold / Cow		377
			

Input your data into green boxes

Select from the options provided or enter custom tool details

Custom Tool

Oestrus detection

**Coming soon**

Calf feeder

Grass measurement tools


Automatic Milking System

Calving sensor

Heat detection other

Body condition scorer



<b>Capital Costs</b>			Total
Per cow spend		€145.00	€ 14,355.00
Per herd spend (e.g base stations)		€550.00	€ 550.00
Total capital spend			€ 14,905.00
Years till capital depreciated		7	
<b>Annualised depreciation costs</b>			€ 2,129.29
<b>Operating costs</b>			
Annual subscription / service fee			€500.00
Labour cost / hour		€15.00	
Change in hours required /year (+/-)		160	€ 2,400.00
Annual maintenance / repair costs			€ 250.00
<b>Total operating costs</b>			€3,150.00
<b>Total annual costs (excluding finance)</b>			<b>€5,279.29</b>
			

**In this tab you can see the improvement in fertility required to achieve your required Return on Investment**

<b>Total capital investment</b>	<b>€14,905.00</b>		
Total annual cost excluding finance	€5,279.29		
Return on investment required	20%		
Annual Return Required (after costs)	€2,981.00		
<b>The annual improvement (increase in income / reduction in costs) required to achieve ROI is</b>	<b>€8,260.29</b>		
1% improvement in 6 week preg % / cow*	€8.22		
A 1% improvement for your herd is	€813.78		
<b>The technical improvement required to achieve ROI is a</b>	<b>10%</b>	<b>improvement in 6</b>	<b>week pregnant rate</b>

\*Shalloo et. al 2014. Effect of fertility on the economics of pasture-based dairy systems. Animal (2014), 8:s1, pp 222–231

# Benefits

1. Quick & Intuitive
2. Focuses on results required
3. Disseminates economics
4. Can improve use of limited capital / increase adoption
5. Benefit to farmers, advisers and vendors

# Next steps

1. Trialling
2. Web based interface?
3. Additional technology pre-sets Collect more baseline data (2018 NFS)

Questions?