

# CLIMMAR Congress Stockholm Sweden, 2015



**We make  
sustainable  
food production  
possible**

Public

2015-10-11



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*Research & Development Automatic Milking*

*- and how DeLaval makes sustainable food  
production possible*

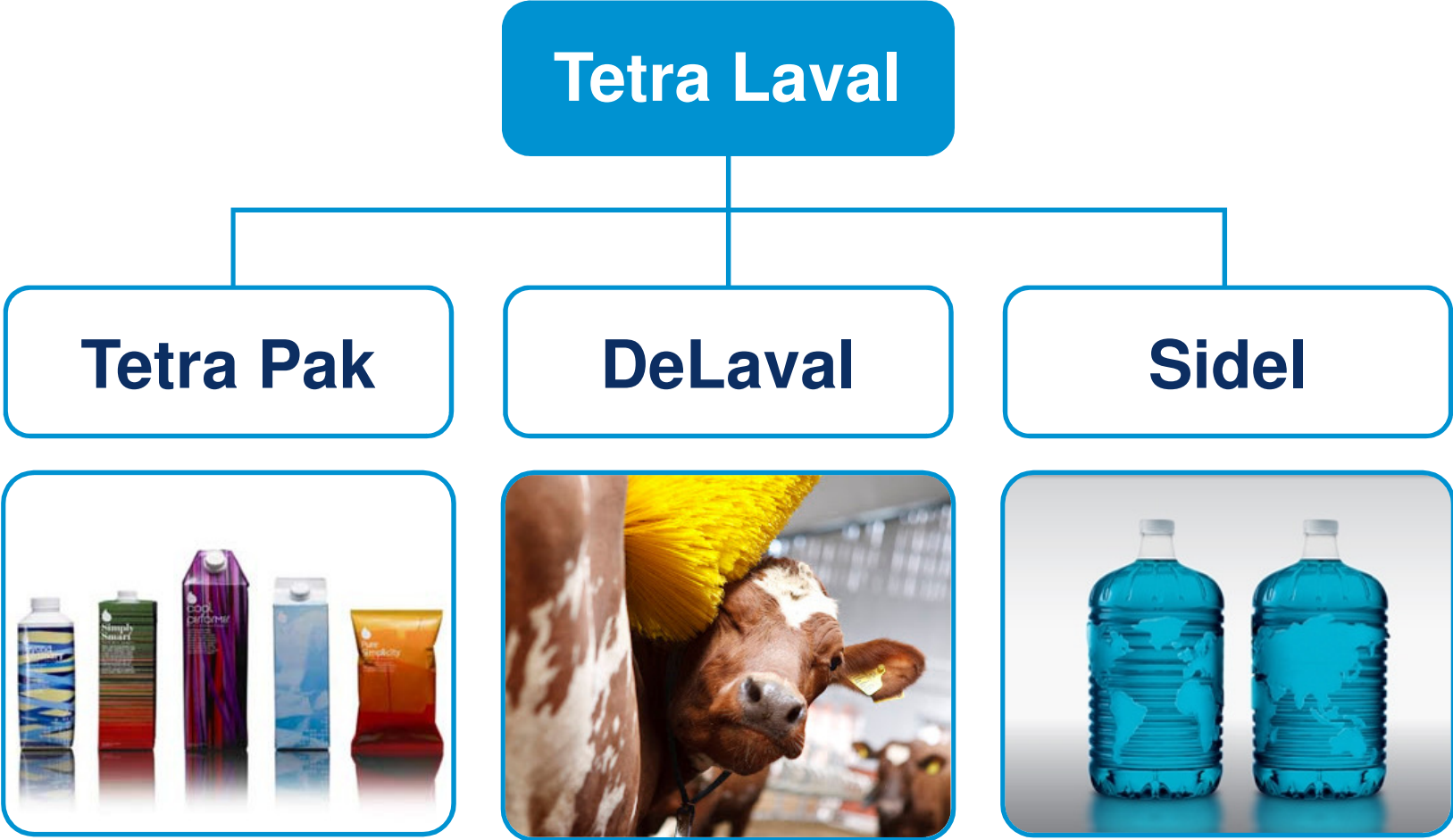
**Mats Nilsson, Director Engineering AMS**



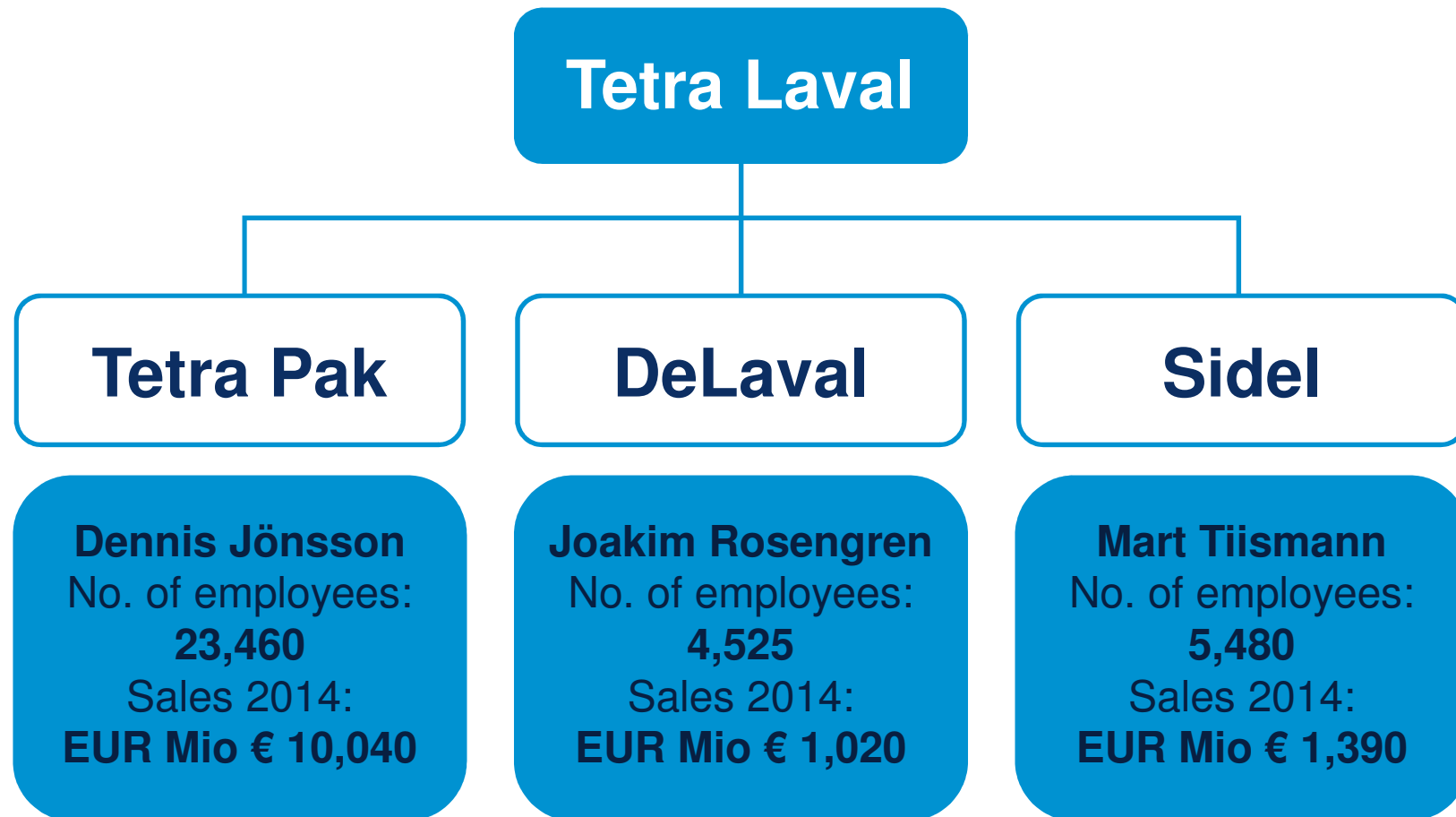
**We make  
sustainable  
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# Tetra Laval and Delaval

# TetraLaval Group



# DeLaval is part of the TetraLaval Group



# Our vision

In tune with consumers, customers and employees around the globe



**We make  
sustainable  
food production  
possible**

# DeLaval

...offers complete solutions for milk production and animal husbandry

...empowers the dairy farmer with improved control over milk production

...caters to customers worldwide with herd sizes ranging from 1 to 50 000

# Meeting our customers

1, 464 sales representatives

1,166 dealers

670 mobile shops and delivery trucks

3,108 service technicians





# Research & Development



# DE LAVAL CREAM SEPARATORS

SAVE \$10 TO \$15  
PER COW EVERY  
YEAR OF USE.  
ONE MILLION IN USE.

**130 years  
of innovation and  
experience in the  
dairy business**

THE  
DE LAVAL  
SEPARATOR  
COMPANY

PHILADELPHIA

1213 1/3 FILBERT Street

SAN FRANCISCO

DRUM & SACRAMENTO Street

PORTLAND OREG.

107 PER ST. Street

SEATTLE

1016 WESTERN Ave.

LOS ANGELES

1051 LOS ANGELES ST.

MONTREAL

173 1/7 WILLIAM Street

WINNIPEG

1416 PRINCESS Street

Public

 DeLaval

# 130 years of innovations



**1878 Separator**  
Gustaf De Laval patents the world's first cream separator.



**1894 Hamra**  
AB Separator acquires Hamra Farm.



**1930 Rotary**  
The first rotary parlour, the "Rotolactor" installed in New Jersey, USA 1930.



**1978 ID**  
Launch of the first automatic identification system for livestock.



**2003 Hamra 3D**  
International conference on New Dimensions in Dairy Development.



**2004 Village milking centres**  
DeLaval equips 200 Chinese village milking centres.



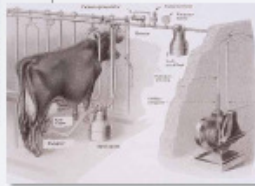
**2007 Herd Navigator**  
Analysis tool for mastitis, reproduction, metabolic disorders & food protein balance.



**1883 AB Separator**  
Original company founded by Gustaf De Laval and Erik Hamra.



**1903 National fair**  
First time that Hamra hosts a national agricultural fair.



**1917 Vacuum-operated milking machine**  
Introduction of the first milking machine with pulsating vacuum.



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New system introduces variable vacuum levels during machine milking.



**1998 DeLaval voluntary milking system VMS**  
Automatic milking system launched.



**2003 DCC**  
DeLaval coil counter DCC is launched, enabling farmers to measure SCC on the farm in less than one minute.



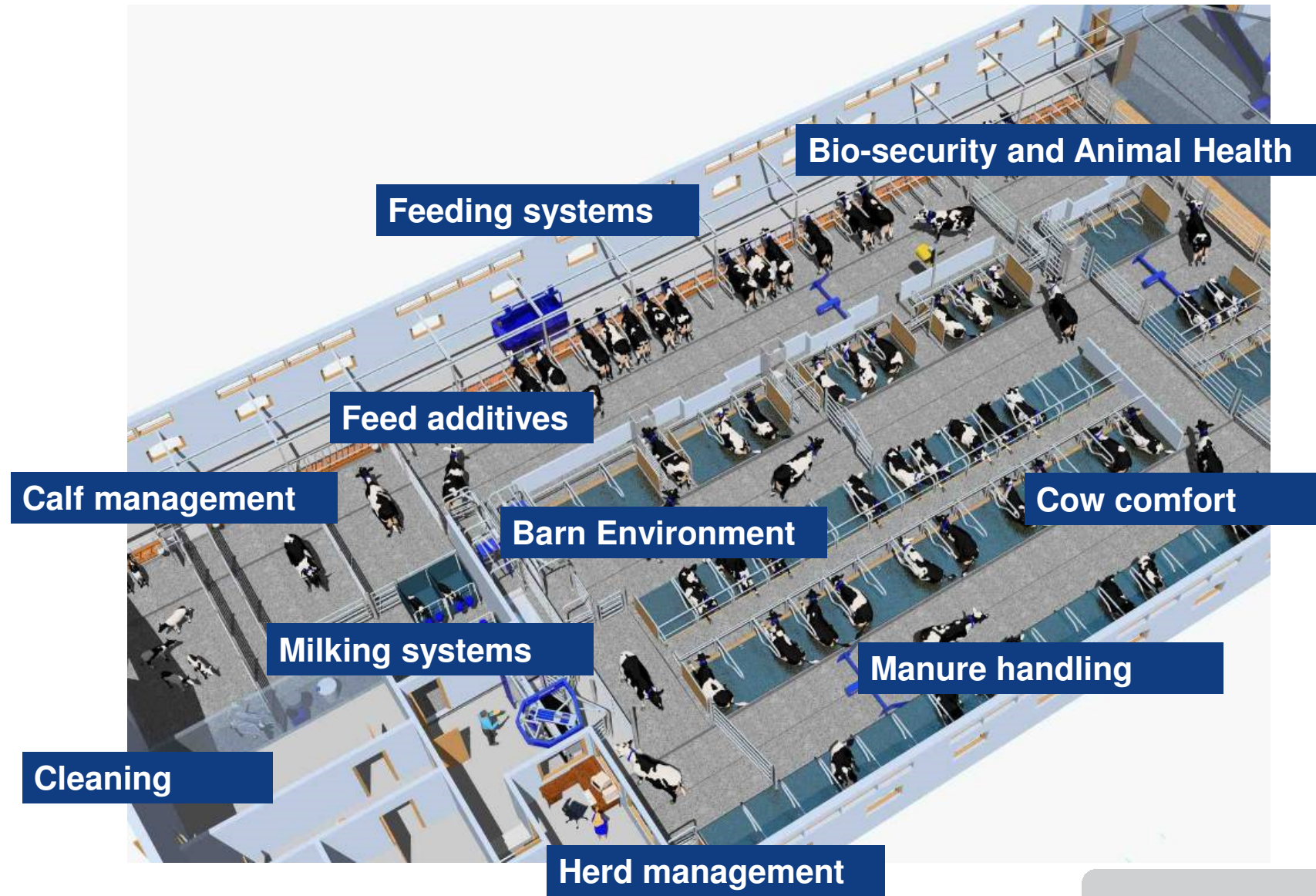
**2006 OCC**  
DeLaval launches next generation VMS with DeLaval online cell counter OCC.



**2010 AMR**  
DeLaval launches the first automatic milking rotary. Capacity to milk 90 cows/hour or 540 cows three times/day or 800 cows twice a day.



# DeLaval offers a complete assortment



Public



# DeLaval VMS – Voluntary Milking System



2.00 VMS

Internal

[https://www.youtube.com/watch?v=Aju\\_wqHhCBk](https://www.youtube.com/watch?v=Aju_wqHhCBk)



# DeLaval AMR – Automatic Rotary



2.30 AMR

Internal

<https://www.youtube.com/watch?v=bNhDOTBeTbE>



# DeLaval TSR – Teat Spray Robot



TSR

Internal

<https://www.youtube.com/watch?v=-iE7nNXfhLY>



# AMS Research & Development

## Steps

- Mech, EI , SW, Verification & Validation ⇔ Project office
- Inhouse vs Ext partners

1. Sweden Tumba – VMS & AMR/TSR Lab

2. Sweden Tumba - Hamra Farm

3. Test Farms in Sweden and abroad

- Concept & Feasibility Studies => Development projects
- **Requirements** ⇔ Design & Verification



# All R&D projects are requested to use the following Sustainability Indicators, when applicable.

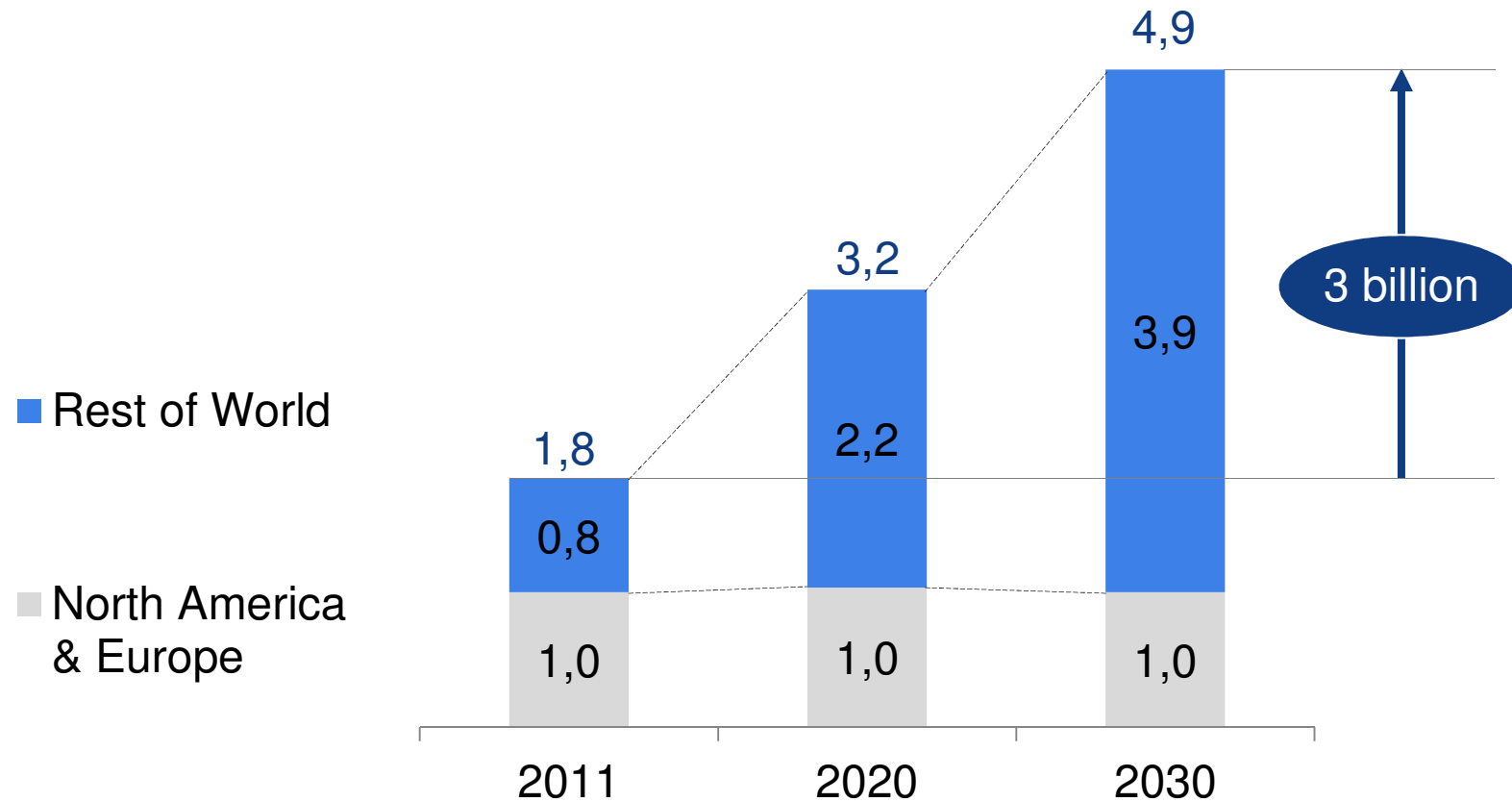
This will allow us to measure and communicate progress related to our Vision.

1. **Electricity consumption** of the article in use (kWh/liter of milk)
2. **Fresh water consumption** and waste water production of the article in use (Liter of fresh water/ liter of milk)
3. **Use of materials** including Hazardous substances in the solution and production of it. (In compliance/No substances on Black list/ No substances on Grey list)
4. **Working conditions** related to the operation and service of the solution. (**Ergonomics** related to installation, operation and service)
5. **Waste prevention** and reduction with efficient solutions, e.g. feed, waste, oil, consumables (reduction compared to previous solution or previous state/practice)
6. **Animal welfare improvement** resulting from the use of the solution (Reduced level of mastitis in the herd and/or of lameness in the herd)

# Sustainability in agriculture

# The emergence of 3 billion middle-class consumers

## Global middle class\* billions of people



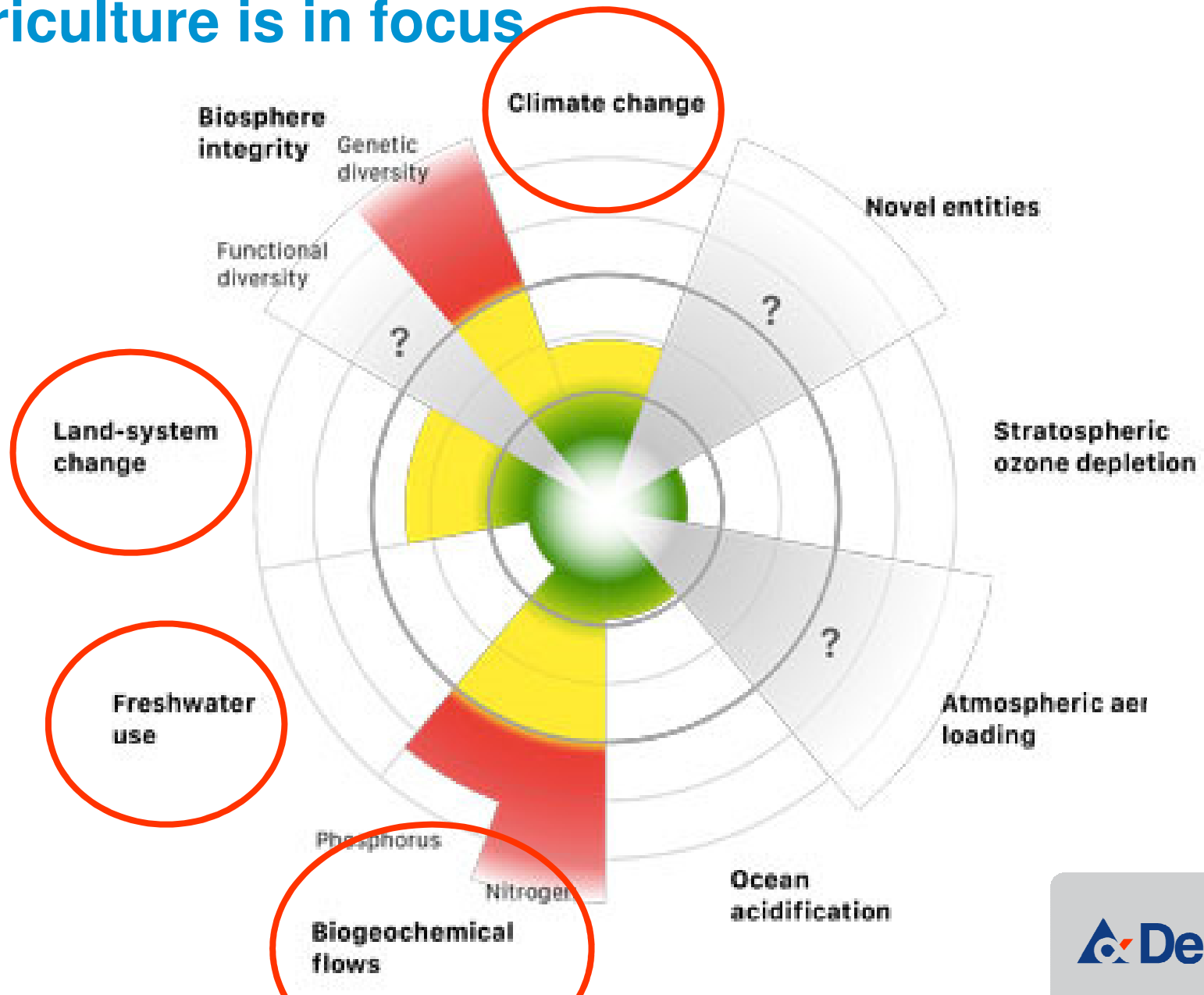
# Challenges and opportunities



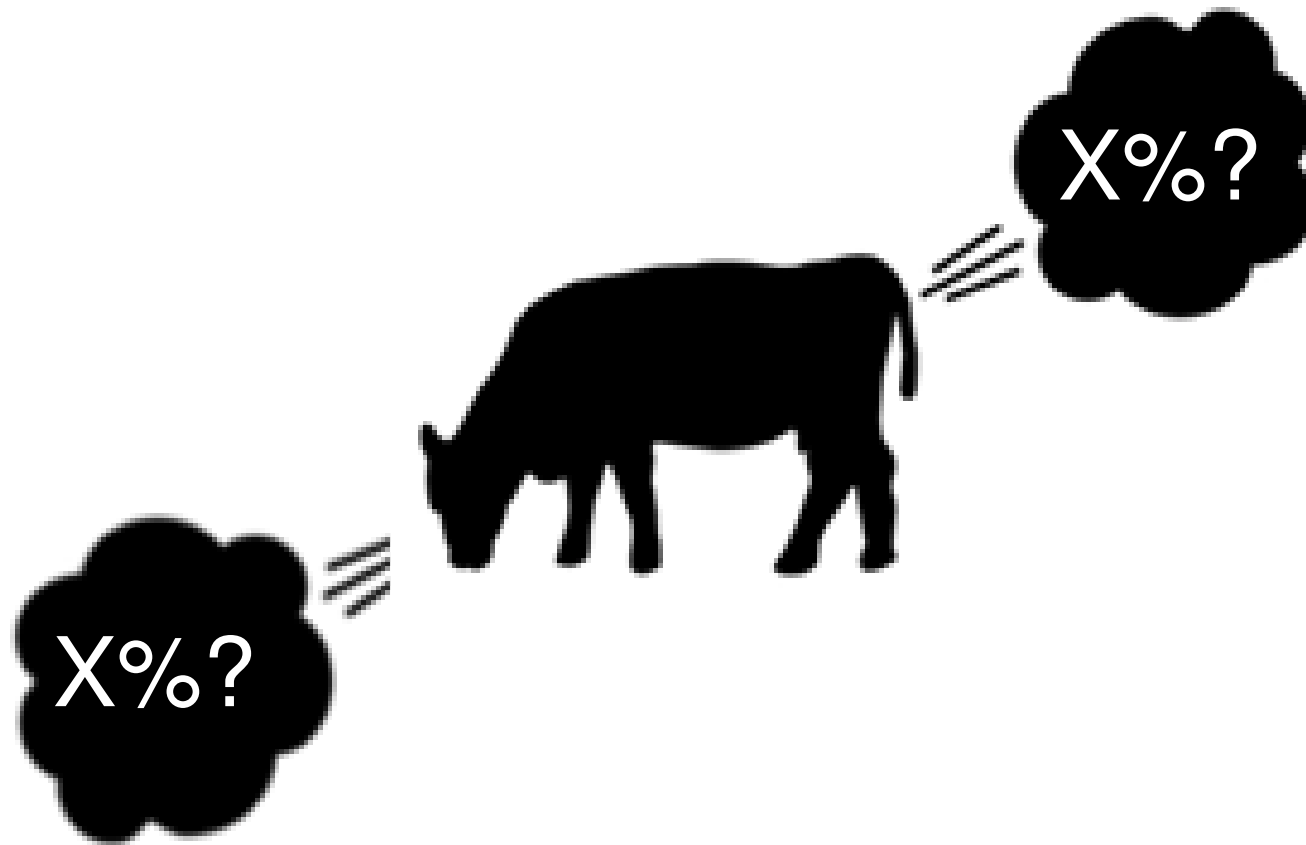
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# Planetary boundaries

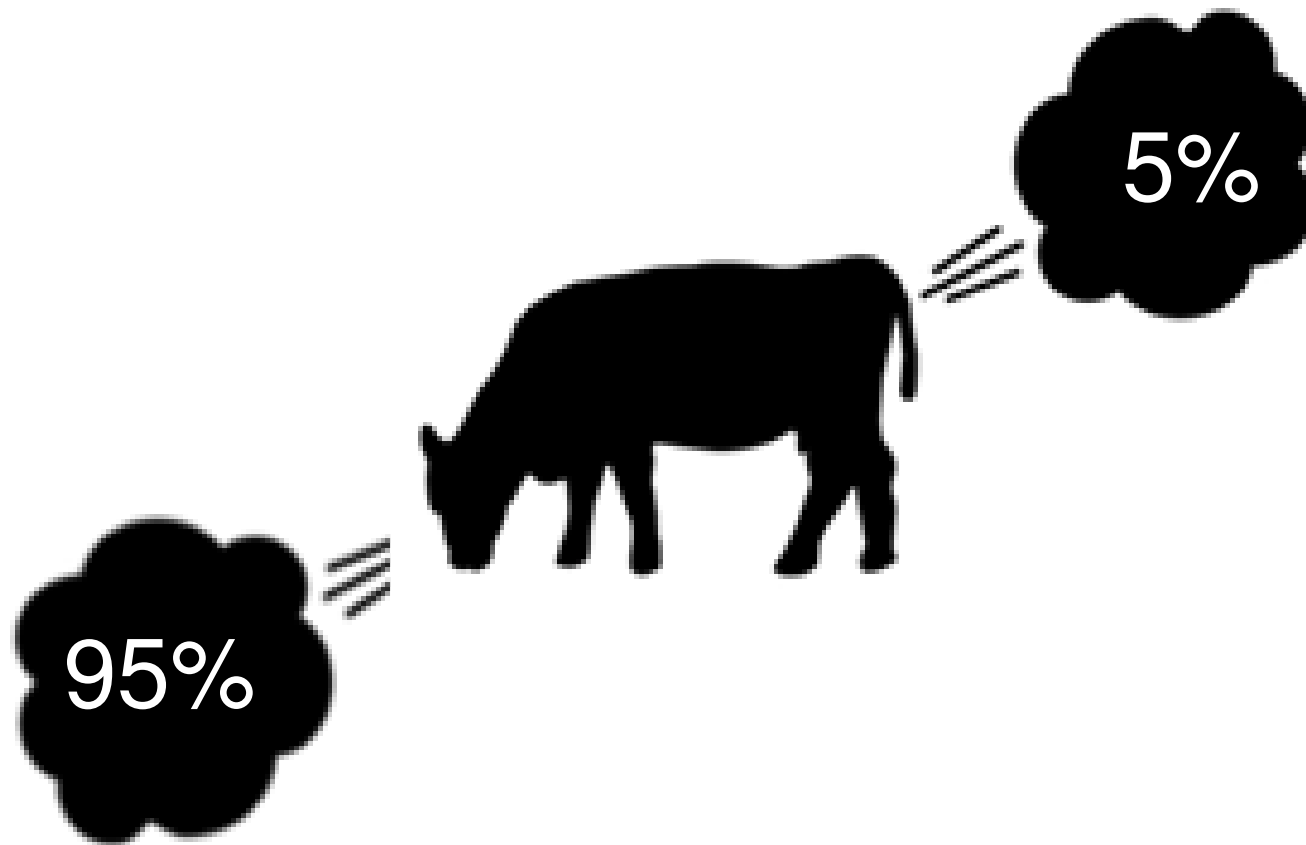
## Agriculture is in focus



# Methane from the cow – why and where?

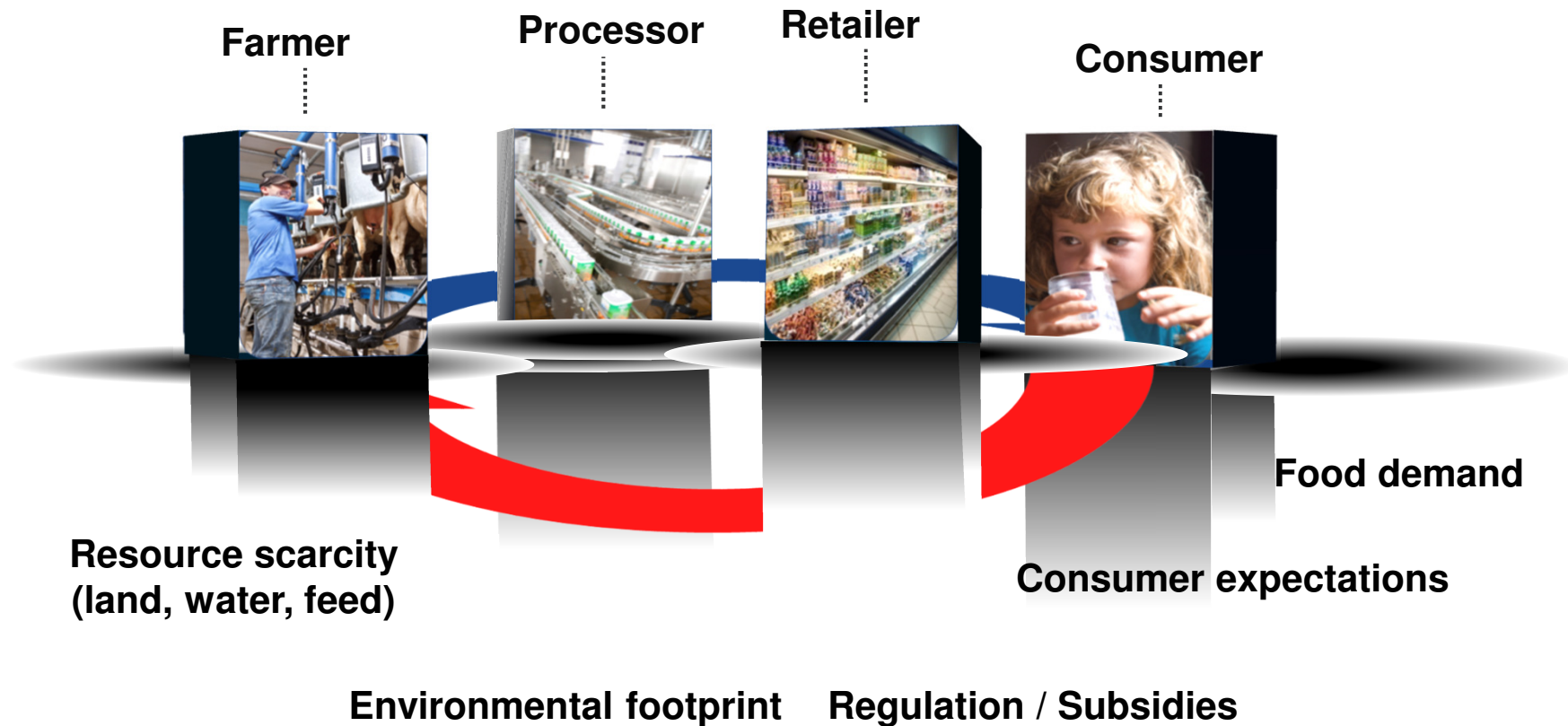


**Methane is formed in the rumen as part of their normal digestive process.**



# Focus on sustainability

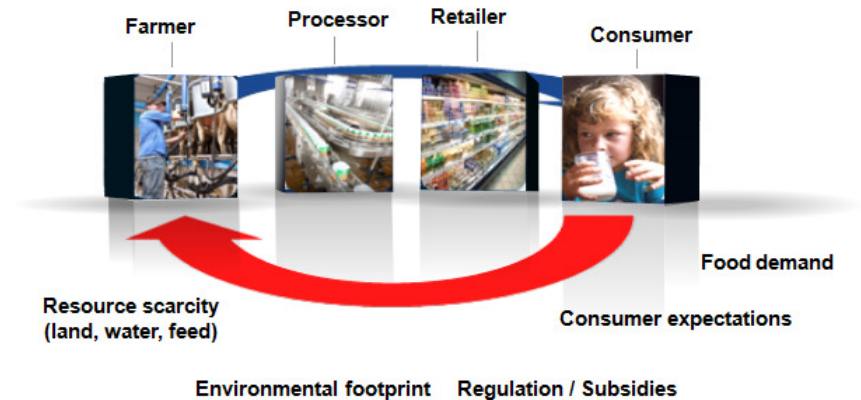
## Drivers for sustainable dairy farming





# Food sustainability

## The main strategies



1. **Increased cooperation** between companies, NGOs, researchers and the public sector to produce/share proper data and to identify ways forward
2. Increasing demands for "**sustainable sourcing**" result in requests for productivity improvements documentation and certification of supply chain performance with regards to "sustainability"
3. Increased efforts to integrate "sustainability" in business management by **improving productivity** (doing more with less), and **innovation** (doing better differently)

# DeLaval and sustainability

# Our approach to sustainability



# Sustainable dairy farming – addressing productivity

## Increasing demands on farmers around the world

The need to produce more

Labour management and availability

The ability to expand in a profitable way

Secure high-quality operations

Reduce the cost of milk harvesting

Do more with less

Flexibility and choice of lifestyle

Optimise the genetic potential

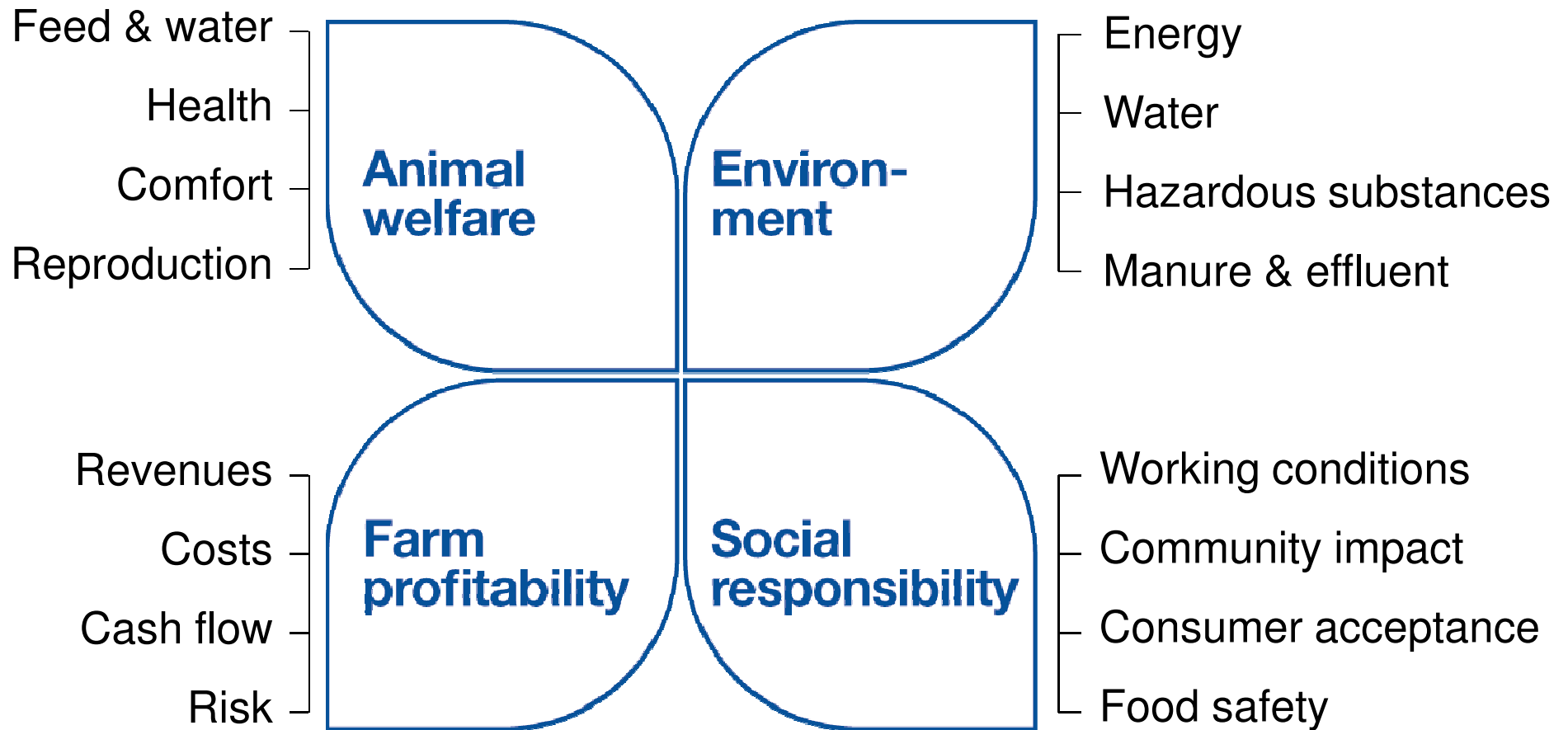


**“We make sustainable food production possible”  
by selling solutions and services that improve  
our customers’ performance.**

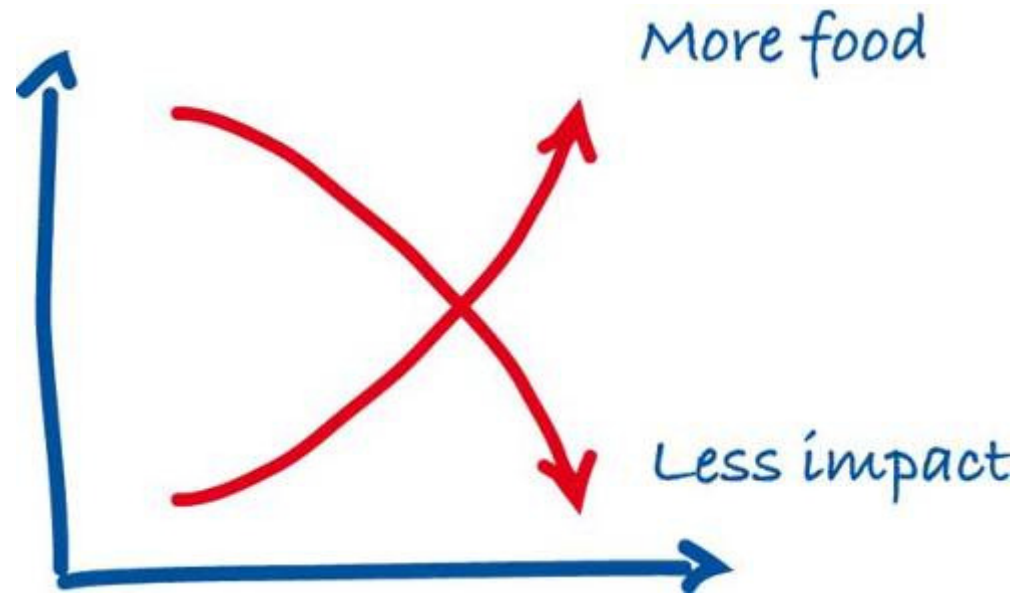


# 4 types of customer benefits

Improvements related to the other 3 pillars are often combined with economic benefits.



# Doing more with less



# Innovation is key to improve farm productivity



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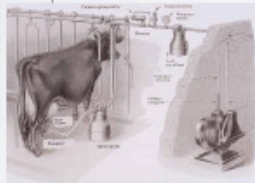
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# The best dish brush

## – Sustainable & Environmentally friendly

**MINTTEST: DISKBORSTAR** Läs alla tester på [icakuriren.se](http://icakuriren.se)

### Dyraste borsten diskar bäst

Det är stor skillnad på hur effektivt en diskborste diskar. En bra borste tar bort middagsresterna på tallrikarna med ett par tag. Det gör testets dyraste borste De Laval. FOTO ERIK HEDMAN

Märke	Ikea	X-tra/Coop	Fixa/Axfood	Ica	Maria/AB Rörets In	De Laval/Grangården
Pris	5 kr	10:90 kr	11:90 kr	15:90 kr	17:90 kr	69 kr
Kommentar	+ Tät borste. Lagom långt skaft. - Liten borste. Stumt, klent och felvinklat skaft. Tål inte het panna, smälter.	+ - För mjuk och spretig borste. Klent och tunt skaft. Trubbig skrapkant. Tål inte het panna, borsten smälter. <i>Sämst!</i>	+ Stor bra borste. Greppvänligt skaft. Bra skrapkant. Tål het stekpanna. - Skaftet något för långt. <i>Mycket prisvärd!</i>	+ Bra skrapkant. Lagom långt skaft. - För mjuk och gles borste. Tål dåligt het stekpanna. Smuts samlas i skaftet.	+ Bra effektiv utbytbar borste. Bra vinkel på skaftet. Bra grepp. Följsam. - Tål dåligt het stekpanna. Smuts samlas i skaftet och i borsten.	+ Mycket effektiv och bra borste. Spänstiga strån. Bra skrapkant. - För långt och smalt skaft. Tål knappt het stekpanna.
Totalbetyg	♥	♥	♥♥♥♥	♥♥	♥♥♥♥	♥♥♥♥♥

*Almost indestructible  
- possible to put in the dish washer!*

### Viktiga fördelar

- Mycket hållbar
- Miljövänlig och resurssnål
- Skrapkant och greppvänligt skaft
- Tål kokning och starka kemikalier



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