

Animal Health industry's view on responsible livestock farming systems

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IFAH-Europe

- **IFAH-Europe** (International Federation for Animal Health Europe) is the federation representing manufacturers of veterinary medicines, vaccines and other animal health products in Europe.
- 13 animal health companies active across the EU
- 19 national associations 
- 300 companies via association network of which 135 are small and medium sized enterprises (SMEs)
- 90% of the €4.3 billion European market for veterinary medicinal products represented.



Defining responsible farming systems

- Responsible farming = sustainable farming
- Balancing the three P's:
 - **People (for AH: animals included)**
 - **Planet**
 - **Profit**



- Sustainable agriculture is, in essence, about the production and supply of food in a manner that is beneficial to society, economically viable, environmental responsible and promotes animal health and welfare.
- It involves a reconcillation of such diverse goals as consumer safety, animal health and welfare, the supply of quality food at affordable prices, the provision of fair returns for producers and the protection of environmental resources.

Note: negative trade-offs between P's are not negotiable, the challenge is to define the win-win-win options.

How Animal Health industry contributes (some examples)

3Ps	Subgroup/	Contribution
People	Farmers – animal owners	<ul style="list-style-type: none"> ✓ Prevention, control and treatment of diseases ✓ Management support / peace of mind ✓ Prevention zoonoses
	Food chain operators	<ul style="list-style-type: none"> ✓ Prevention zoonoses ✓ Predictable sourcing and quality
	Consumers	<ul style="list-style-type: none"> ✓ Variety of healthy, affordable, quality food ✓ Prevention zoonoses
Animals	Animal health and welfare	<ul style="list-style-type: none"> ✓ Prevention, control and treatment of diseases ✓ Reduction mortality, morbidity and pain
Planet	Efficient use of resources	<ul style="list-style-type: none"> ✓ 20% animal production lost to animal diseases (OIE) ✓ Official inspection discards products diseased animals
	Protection ecosystem	<ul style="list-style-type: none"> ✓ Extensive grazing (BTV-8 and Schmollenberg) ✓ Tourism / Alpine leisure / sports ✓ Aquaculture versus wild catch
	Environment	<ul style="list-style-type: none"> ✓ Less use of resources and lower output of carbon, methane, N, P, etc
Profit	Efficient use of resources	<ul style="list-style-type: none"> ✓ Healthy animals are efficient producers of a predictable variety of quality food at affordable prices ✓ More output with less input

Some examples

- Mastitis control and prevention programs
- Introduction of vaccines → tremendous reduction of antibiotics in aquaculture
- Salmonella control in egg production through vaccination
- Blue Tongue (BTV-8) vaccination in sheep and goats (extensive grazing, maintenance marginal grassland)
- FMD - knocking on Europe's doors
- Porcine Circo Virus Type 2 - PCV2; since the introduction of vaccines mortality has fallen dramatically and performance improved (Economic damage EU €5.76 billion over a ten-year period) including an overall reduced use of antimicrobials
- Rabies vaccination campaigns have cleared rabies in Europe's wildlife → forest etc., now safe environment for leisure, but also protection of livestock, companion animals and people against rabies



Mastitis – Consequences for animal health/welfare and milk quality

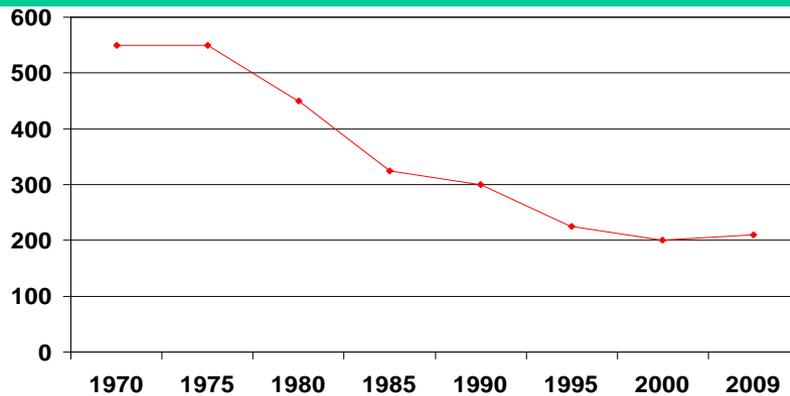
- Mastitis manifests itself in two forms:
 - subclinical mastitis
 - clinical mastitis
- Mastitis in general is one of the most common and detrimental diseases cows can experience
- Acute E-coli mastitis is life threatening
- Mastitis may lead to abnormalities in milk, e.g. watery appearance, flakes, clots, or pus.
- Somatic cell counts (SCC) have long been used as a way of measuring milk quality.
- Dairy industry pays a premium for milk with low SCCs
- EU regulation 853/2004 lays down specific hygiene rules for food stuffs; SCC raw milk $\leq 400.000/\text{ml}$
- Several studies* have implicated high SCC as a causative factor of the reduced shelf life of fluid milk as well as reduced cheese yield and quality



Mastitis – Consequences for animal health/welfare and milk quality

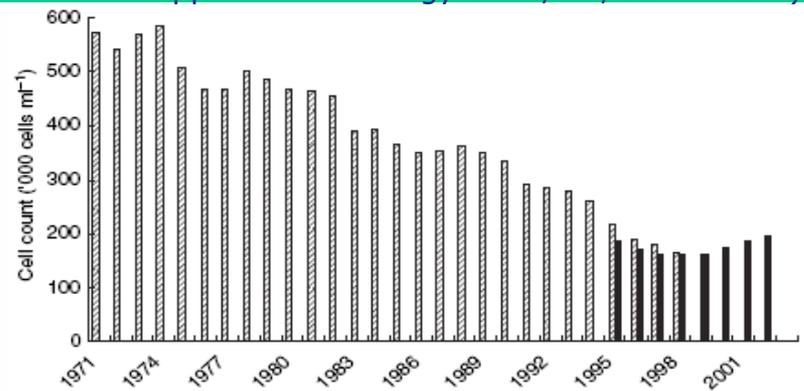
The Netherlands (1970-2009)

Source: GD (National Animal Health Service)



UK (1971-2002)

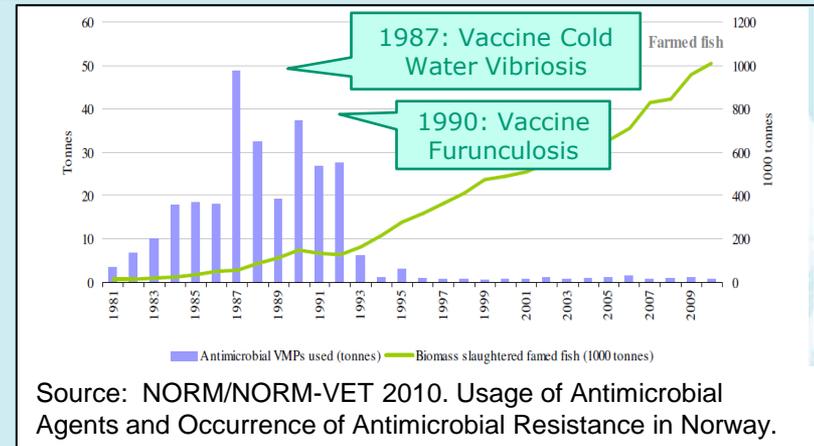
Source: J.E. Hillerton and E.A. Berry, Journal of Applied Microbiology 2005, 98, 1250-1255



- Mastitis prevention, control and treatment plans have resulted in:
 - Improved animal health and welfare; reduction of morbidity and mortality → **People / animals**
 - Improved milk quality and quantity → **Profit**
 - Less milk discarded due to not reaching quality standards, efficient use of resources → **Planet**

Vaccination versus antibiotic use in aquaculture - The trend continues

- In its early years salmon production depended heavily on antibiotics to fight bacterial infections
- Industry became negatively associated by antibiotic deposits in production sites / fjords
- Introduction of vaccines reduced use of antibiotics tremendously while production level increased continuously:
 - Improved animal health and welfare; reduction of morbidity and mortality → **People / animals**
 - Improved predictability of quality and quantity → **Profit**
 - Growing source of healthy food component → **People**
 - Less dependence on wild catch → **Planet**
 - Reduced need for antibiotics results in less selection pressure favoring antimicrobial resistance → **People / animals**



Vaccination versus antibiotic use in aquaculture - The trend continues

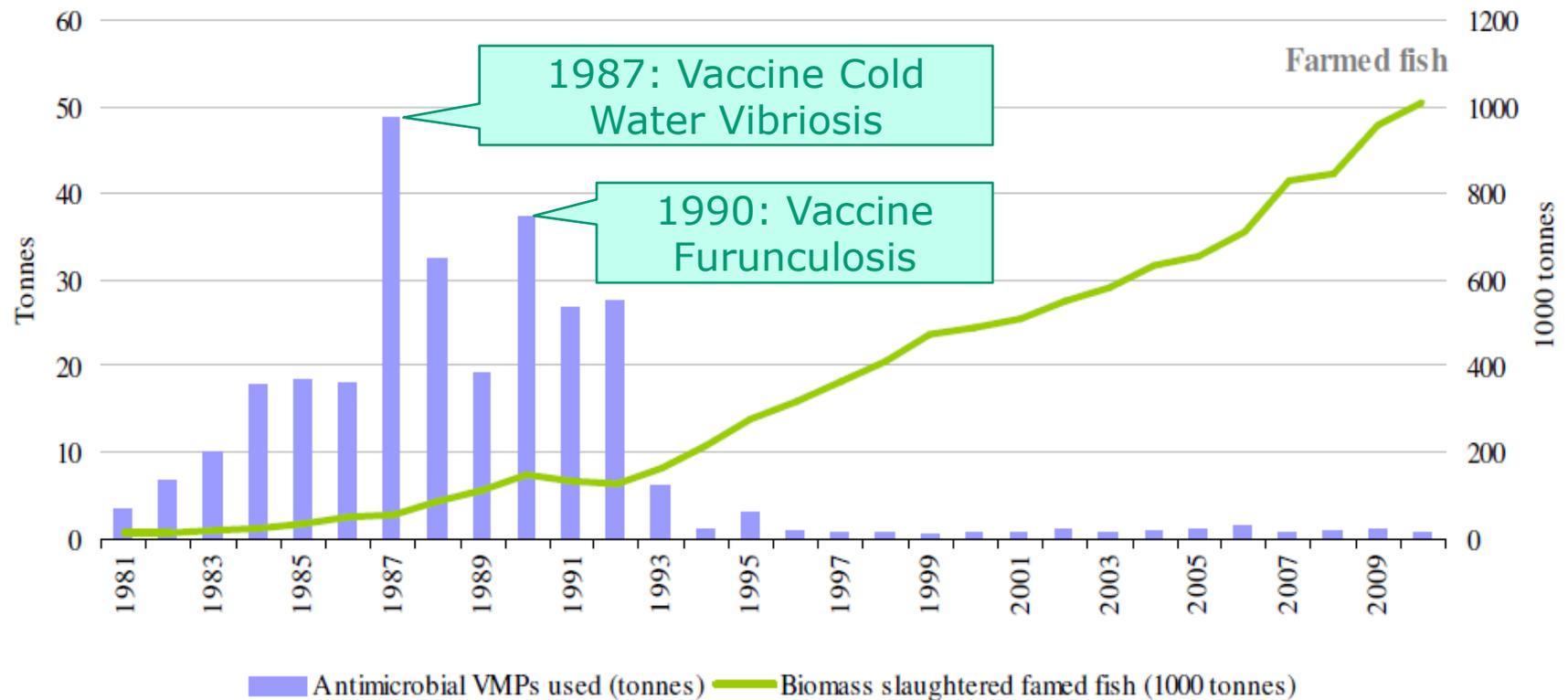


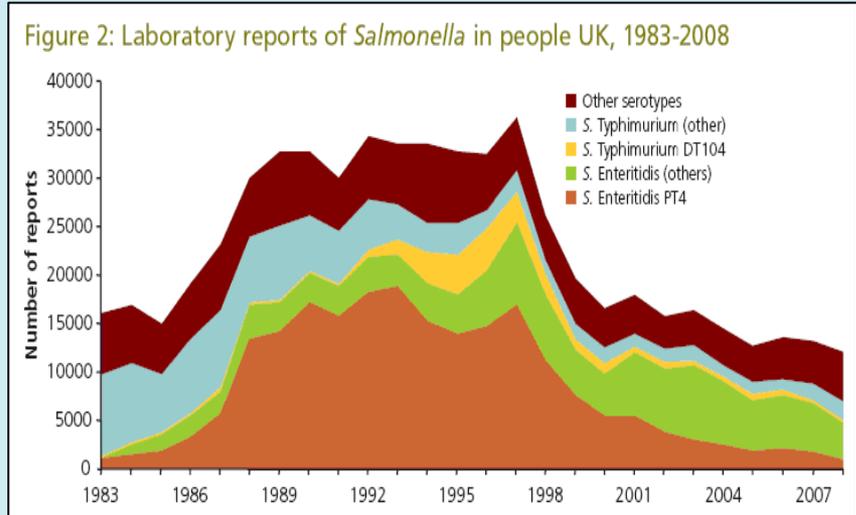
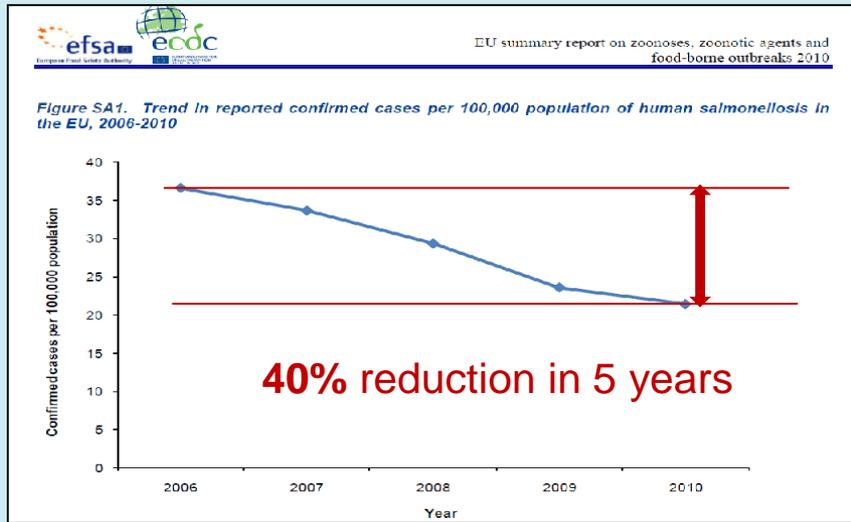
FIGURE 5. Total sales (kilograms of active substance) of antimicrobial veterinary medicinal products (VMPs) for therapeutic use in farmed fish in Norway in the period 1981-2010 versus produced biomass (live weight slaughtered) farmed fish. Preliminary data for 2010 for slaughtered biomass. (Source: NORM/NORM-VET 2010)

Salmonella - characteristics

- In EU almost 100,000 human cases annually
- Impact on health
 - Disease symptoms vary, depend on serovar and can be severe, especially in the young and elderly
 - Animals can be symptom-less carriers of the infection
- Eggs and products made with raw eggs being the most important food vehicles in these outbreaks
- Impact on economics
 - economic burden human salmonellosis could be as high as EUR 3 billion a year (EFSA)
 - eggs from flocks (suspected of being) infected with Salmonella serotypes with public health significance to be treated in a manner that guarantees their destruction (EC/1237/2007)
 - In 2010 a Salmonella infection on two US-layer farms resulted in a nationwide recall of more than 0.5 billion eggs
 - Very negative waste for People, Planet and Profit!



Salmonella in Europe: continuation of decreasing trend



- Use of vaccines was part of a control program, resulting in:
 - Less human salmonellosis → **People**
 - Lower economic burden of human salmonellosis → **Profit**
 - Less flocks culled before economic optimum and less eggs not suited for human consumption → **Profit and Planet**
 - Very POSITIVE for **People, Planet and Profit!**

Bluetongue - quickly spreading across Europe

- Bluetongue is a viral disease that affects ruminants, like cattle, goats, camels, deer and other wild ruminants
- Sheep are particularly susceptible to more serious forms of the disease
- Bluetongue is not contagious, but is transmitted exclusively by a very small insect (midge - *Culicoides* species), which passes the virus by first biting an infected animal before biting an uninfected one
- As from 2006 Northern Europe has been affected by serotype 8, a new virus type in the continent, which spread quickly → unaffected countries reacted with significant trade restriction

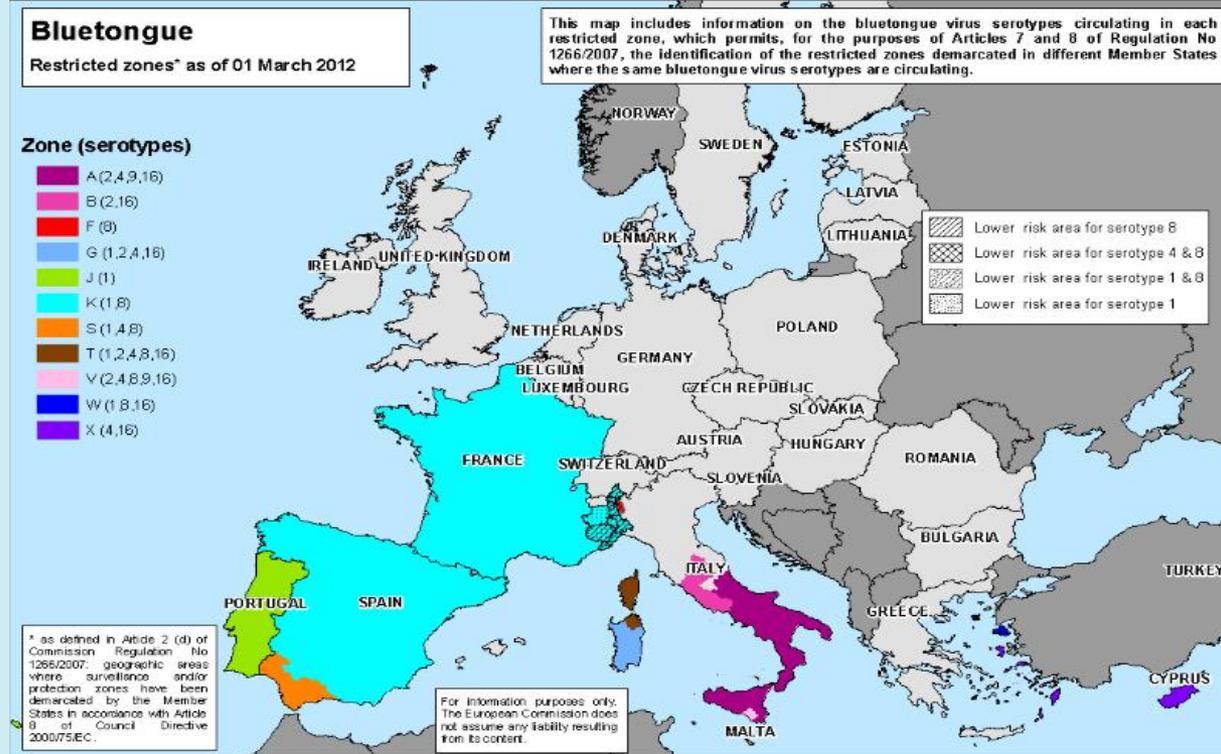
All the above threatened profitability of sheep industry and indirectly maintenance of marginal grazing grounds



Bluetongue - quickly spreading across Europe



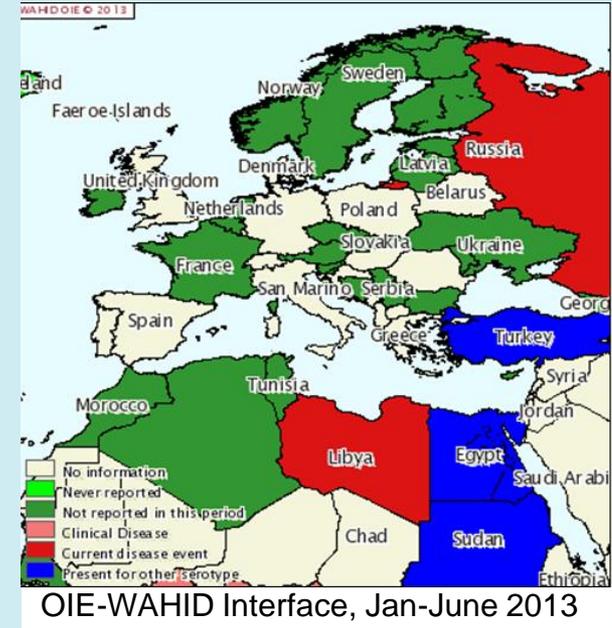
Since 2008 vaccination controlled BTV-8 and normalized trade:



- Absence of disease → **People / animals**
- Improved economy sheep farming → **Profit**
- Continued economic use of ecosystems of marginal grounds → **People, Planet and Profit**

Food and Mouth Disease (FMD) – knocking on Europe's doors

- Viral disease affecting major livestock species and other cloven-hoofed (wild) animals
- For most European countries FMD is a relic of the past, however FMD is endemic in regions bordering Europe
- Significant impact of outbreaks, e.g. lost productivity and mortality, trade implications and culling of animals
- UK outbreak 2001: total cost 12 bio€*
- DIVA-vaccines differentiating infected animals from vaccinated animals are available and can result in:
 - Absence of disease → **People / animals**
 - Predictability livestock industry and trade → **Profit**
 - No wasting of used natural resources → **Planet and Profit**



Outlook

- Animal health industry can contribute and does provide the tools to achieve an **optimized People / Planet / Profit balance**, but these tools should not be used to camouflage sub-optimal management.
- **Societal trends** favour outdoor-production systems for which prevention is of even higher importance than in indoor-production (worms, ecto-parasites, blackhead/histomoniasis in turkeys, AI in outdoor layers, etc),
- **Prevention AND infection control** can reduce need for treatment. If treatment is the only option, withdrawal-periods during production may result in lost production (mainly milk and eggs),

Notes:

- Progress on one P-dimension is not responsible / sustainable / negotiable at the cost of another.
- Responsible Livestock Farming Systems is like embarking on a journey and not marching to a fixed endpoint.

Outlook – components for responsible livestock farming

- A **holistic approach** is the key to progress and to reach an **optimized balance** for:
 - People and animals
 - Planet
 - Profit
- There is a substantial amount of alignment and interaction with the **'One Health'** dimensions:
 - People
 - Animal
 - Environment
- Required components:
 - Multi-stakeholder and multi-disciplinary approach
 - Open communication and acceptance of responsibility
 - Support for innovation and stimulation of cooperation

