Cecilie Walde (NVI), Edgar Brun (NVI) and Benjamin Huntington (GBADs)

Economics of Animal Health

Making the invisible, visible.
Credit: Michael-Tatman, iStock

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The disasters of silos in decision making

Agriculture minister John Gummer and his 4-year-old daughter tuck into a hamburger during the British BSE-crisis in 1990, to assure the public eating British beef is safe. vCJD claimed its first victim in 1995. Image courtesy: BBC News

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Poor animal health and welfare are not only veterinary problems. Yet, in many cases, we still treat them as isolated incidents.

Photo: Jan Magne Sviland

What is missing?

Social science
Human Health
Socioeconomic costs
Implementation science
Zoonosis
Economics
Ecology
Tragedy of the commons
Cost-benefit analysis
Cost estimation
Antibiotic resistance
Ecosystem depletion
One Health
Cost-efficiency
Systems science
Behavioural economics
Veterinary science

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Economic analyses gives important input when choosing between different alternatives and prioritize efforts under scares resources


COST

BENEFIT

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Economics of Animal Health is how farmers, companies and society can make and make **decisions** under scarce resources, to improve animal health

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Photo: Shutterstock.

The societal cost of poor animal health and welfare

When large part of the cost of poor animal health and welfare remains hidden because it isn't measured, is difficult to measure, difficult to find, or is not recognized at all- the investment needed in a resilient governance of animal health also becomes a hidden investment.

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Master of camouflage Denise's Pygmy Seahorse Hippocampus denise.
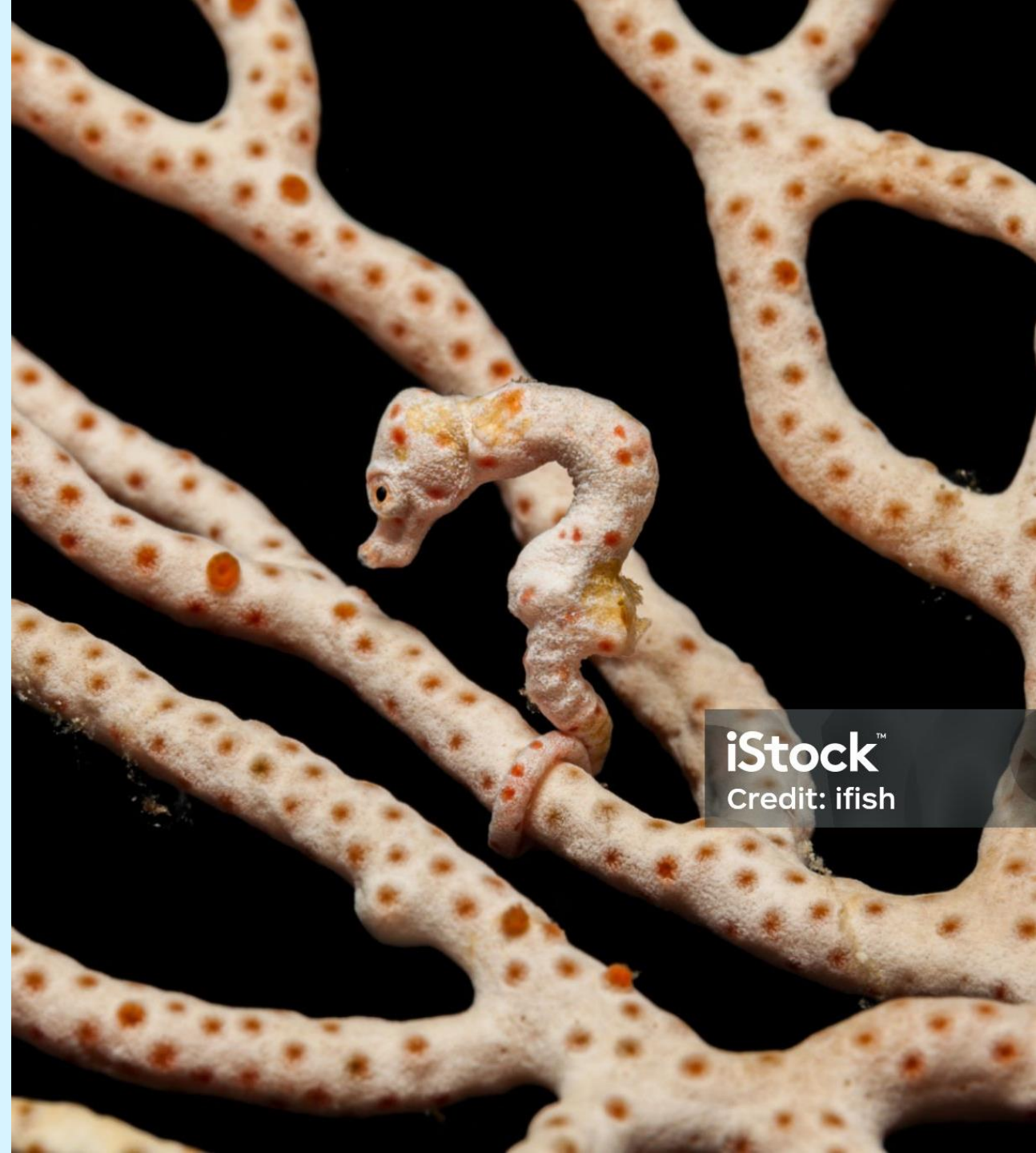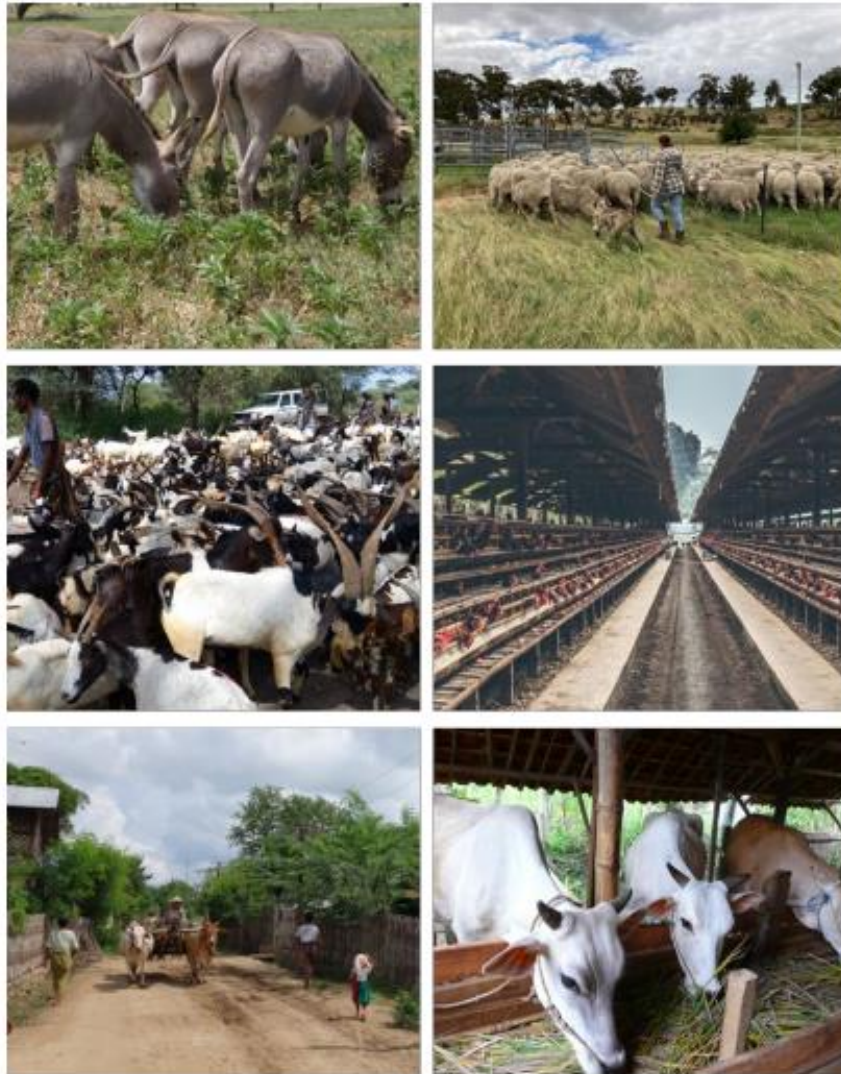
Veterinary science is fundamental for economic analyses of animal health

If the underlying data are poorly understood the economic rational could in worst case point in the wrong direction.

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Global Burden of Animal Diseases (GBADs) Technical Guide

Version 1.0 (July 2024)

Economics of animal health is a tool for decision support

Epidemiologic economic decision support tools to choose between different ways to control and monitor diseases, like spread of **LA-MRSA** in Norwegian pig population, and **pancreas disease** (PD) in salmonid aquaculture.
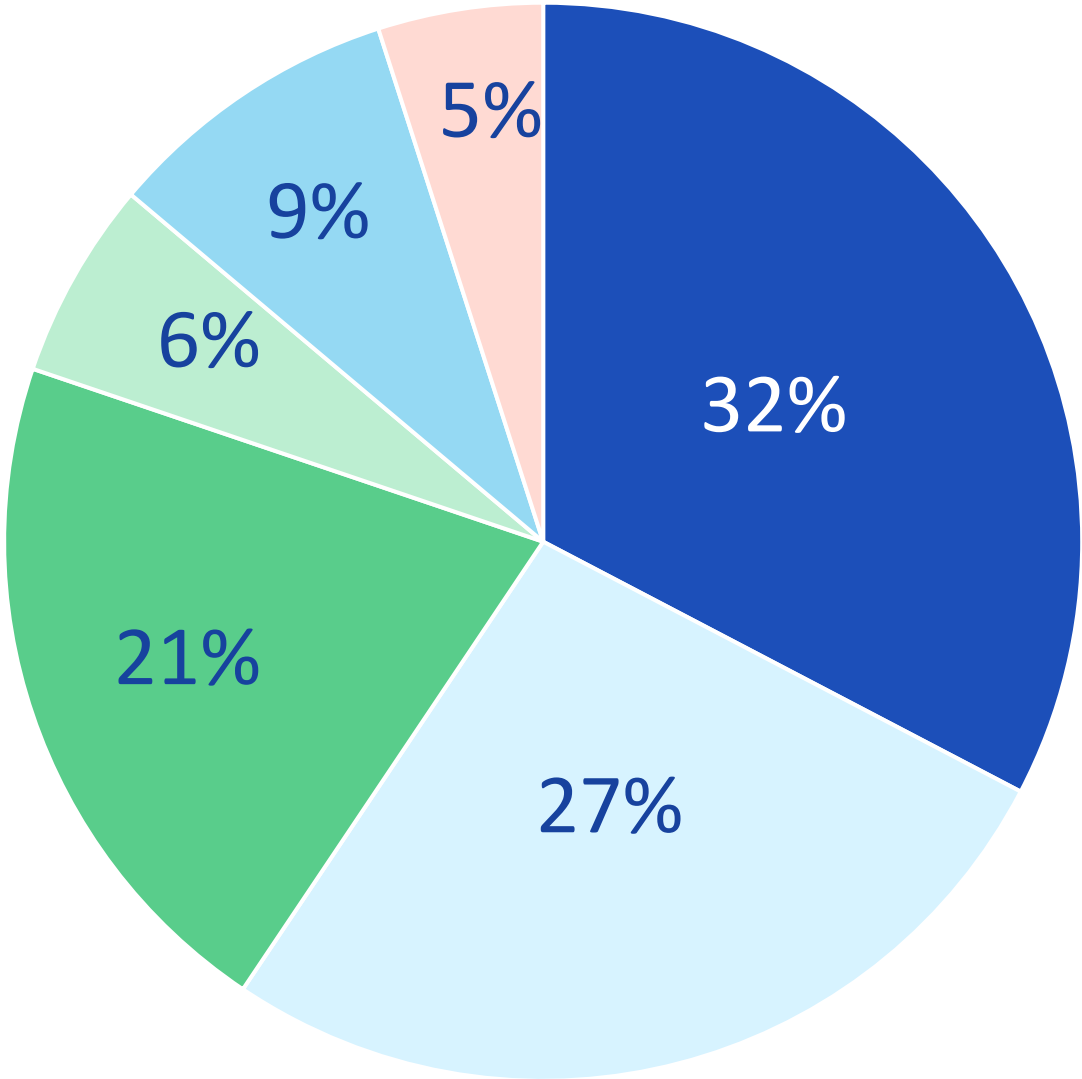
What is the cost of disease in salmonid aquaculture

How much is lost

How much is spent

What is the value

Causes of death in salmonid production at sea. AquaCloud – (appr. 40% of Norwegian salmon farms), Fiskehelserapporten 2024.

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- Infections — 32%
- Injuries — 27%
- Unknown — 21%
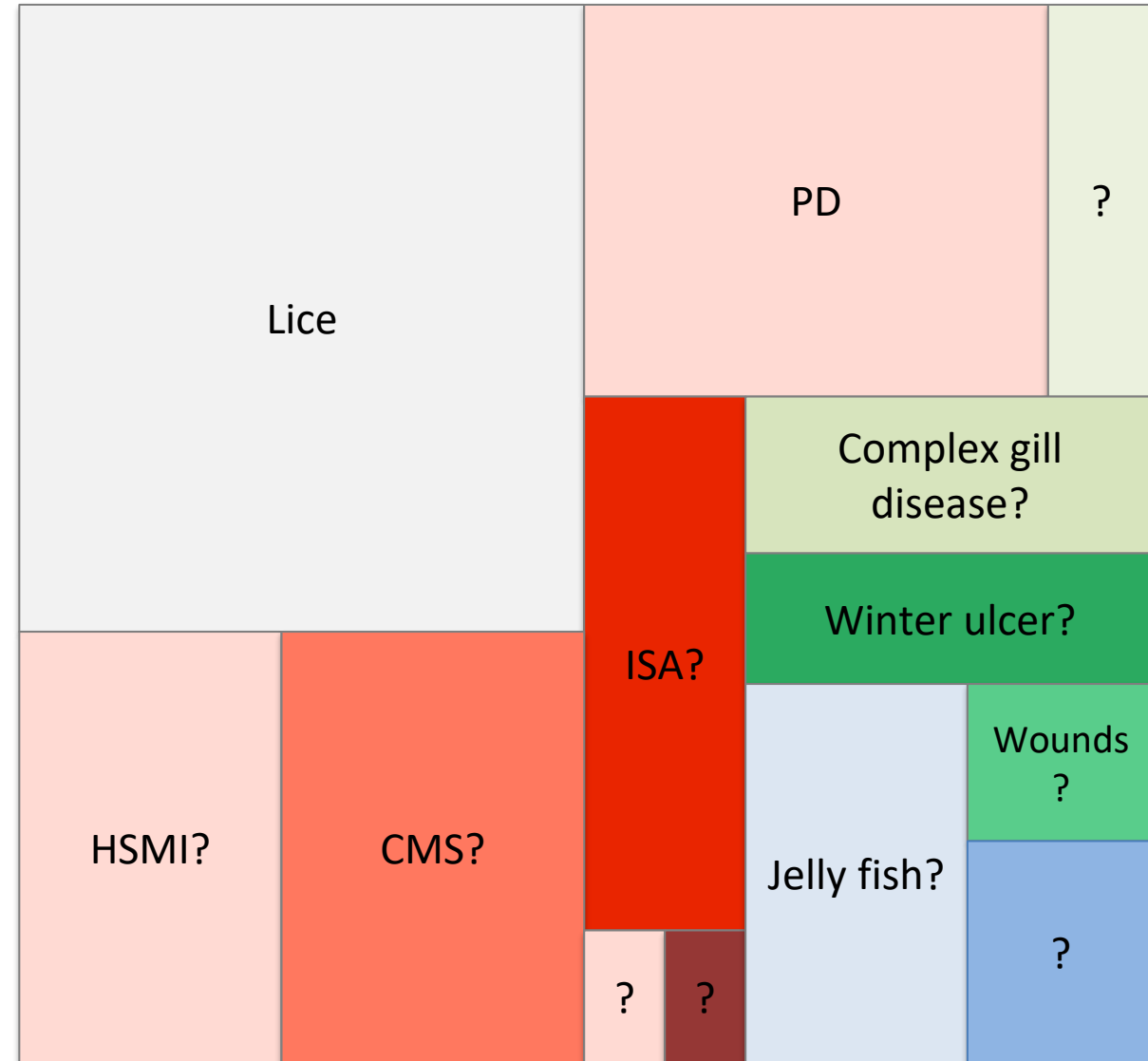- Physiology — 6%
- Environment — 9%
- Other — 5%

Total cost of disease

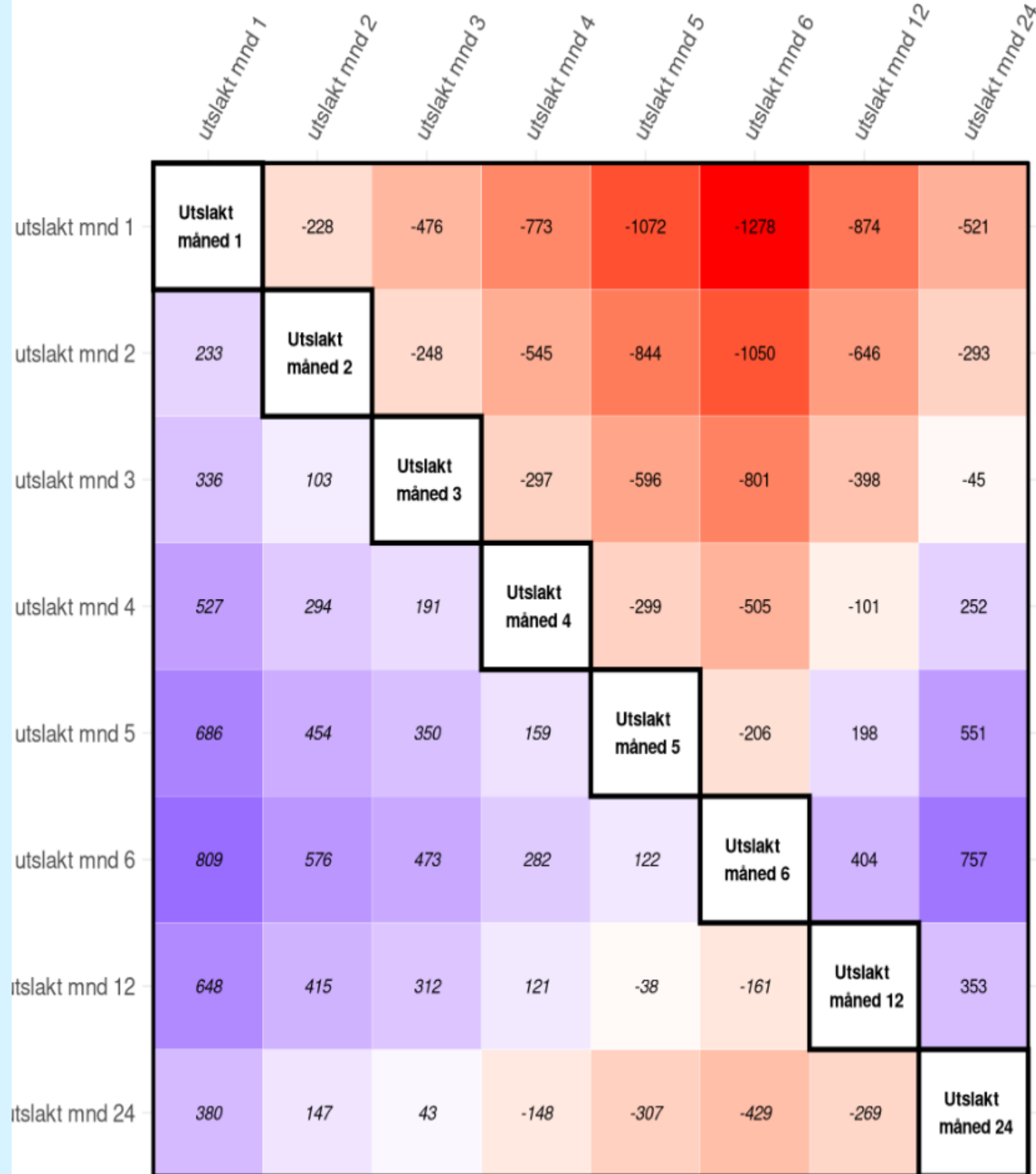Pancreas disease (PD): 10-12 billion NOK per year* (2014-2020)

Lice: 5 billion NOK per year**

If cost estimations are not standardised they are not comparable.

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What are the Costs and Benefits of different interventions to controll disease?

Stamping-out as measure to control pancreas disease (PD) in the non-endemic area in Norway could cost several millions in lost profit and undertaken costs but be highly beneficial for the whole area in the short and long run.


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	utslakt mnd 1	utslakt mnd 2	utslakt mnd 3	utslakt mnd 4	utslakt mnd 5	utslakt mnd 6	utslakt mnd 12	utslakt mnd 24
utslakt mnd 1	Utslakt måned 1	-228	-476	-773	-1072	-1278	-874	-521
utslakt mnd 2	233	Utslakt måned 2	-248	-545	-844	-1050	-646	-293
utslakt mnd 3	336	103	Utslakt måned 3	-297	-596	-801	-398	-45
utslakt mnd 4	527	294	191	Utslakt måned 4	-299	-505	-101	252
utslakt mnd 5	686	454	350	159	Utslakt måned 5	-206	198	551
utslakt mnd 6	809	576	473	282	122	Utslakt måned 6	404	757
utslakt mnd 12	648	415	312	121	-38	-161	Utslakt måned 12	353
utslakt mnd 24	380	147	43	-148	-307	-429	-269	Utslakt måned 24

Which surveillance program is the most cost-efficient?

In addition to the surveillance programs efficiency it is also important to include its cost. Different ways of PD surveillance can have different efficiencies, but also different costs.
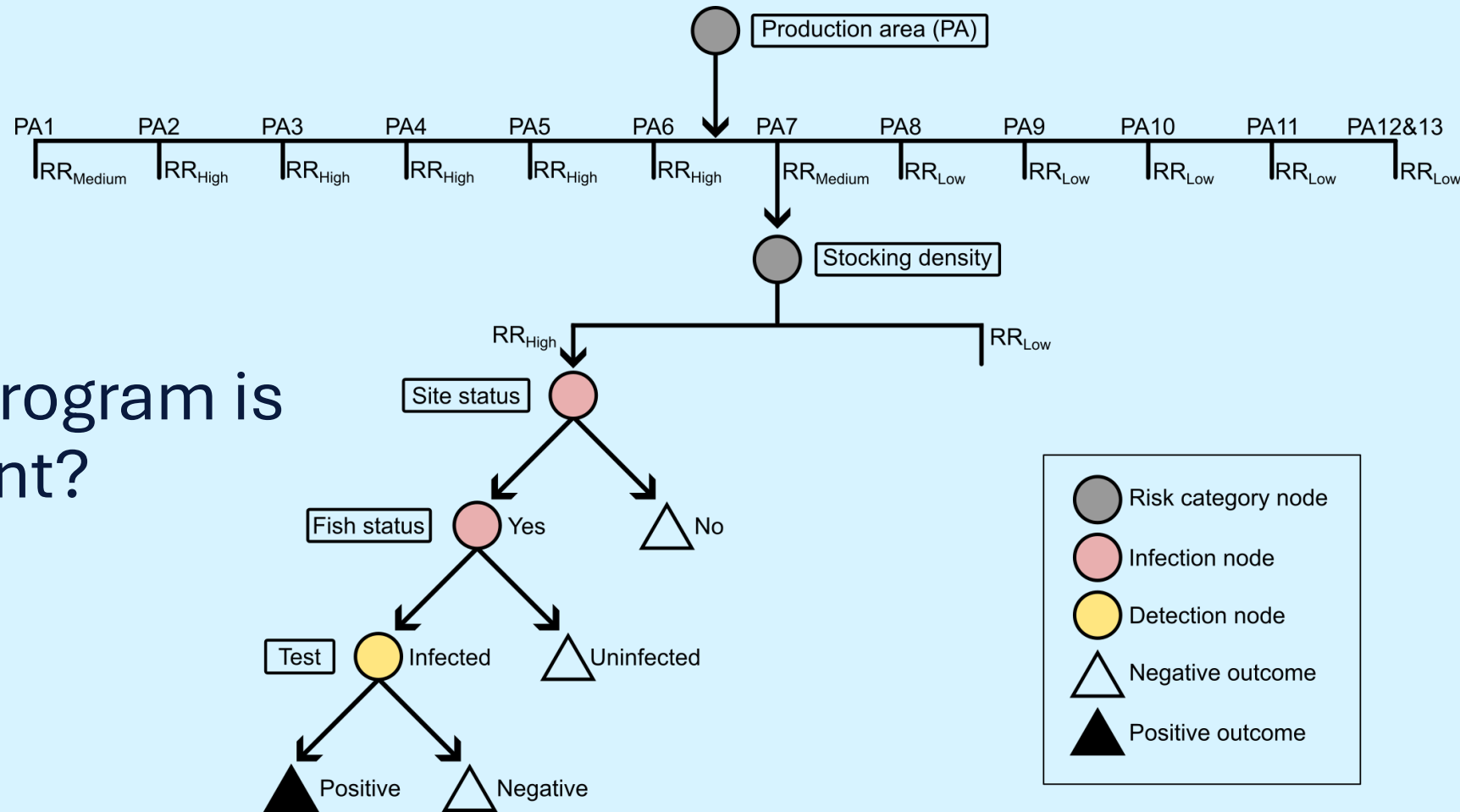
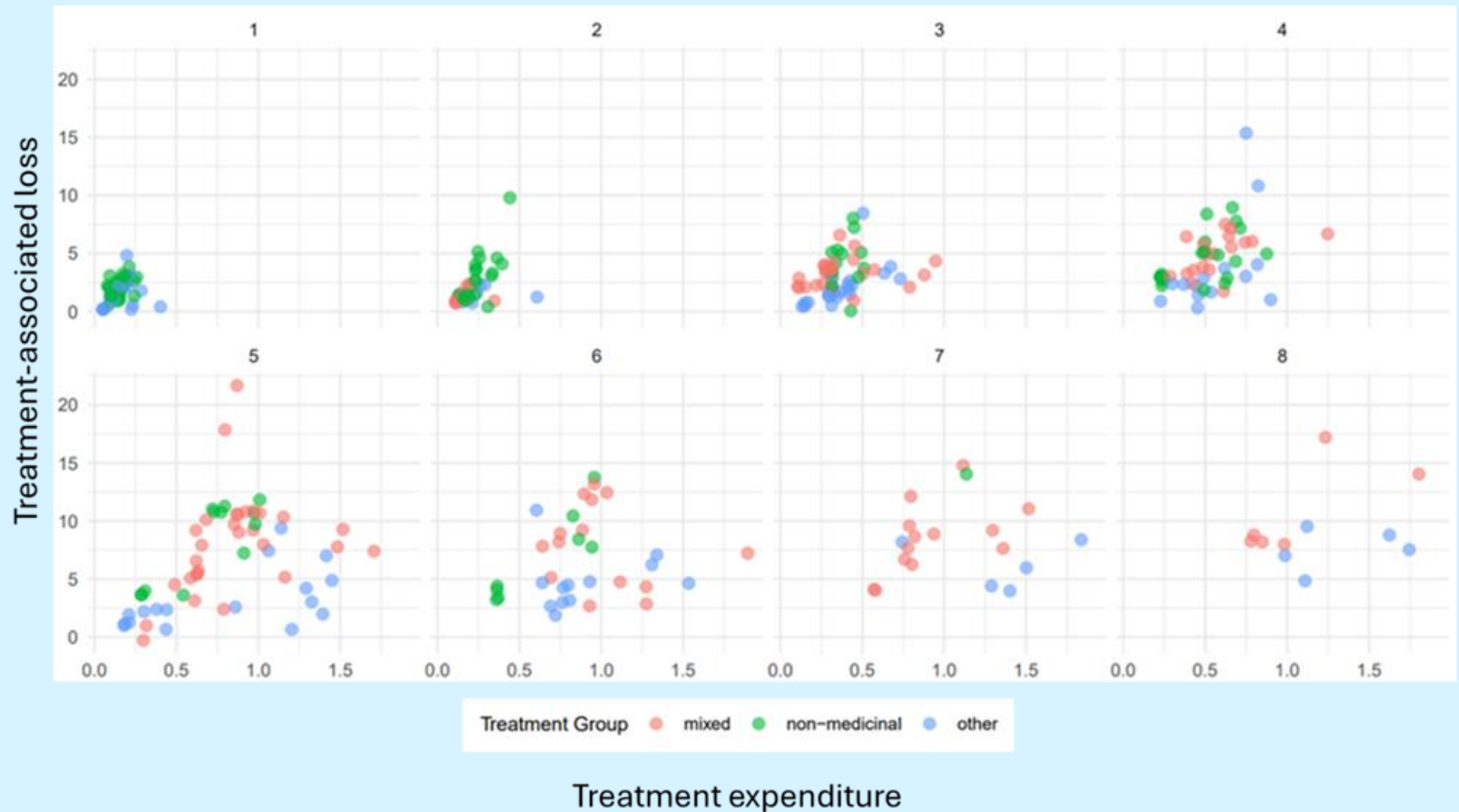Active surveillance scenario tree model (STM) of PD in Norway

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What is the optimal and most cost efficient combinations of measures to control disease?
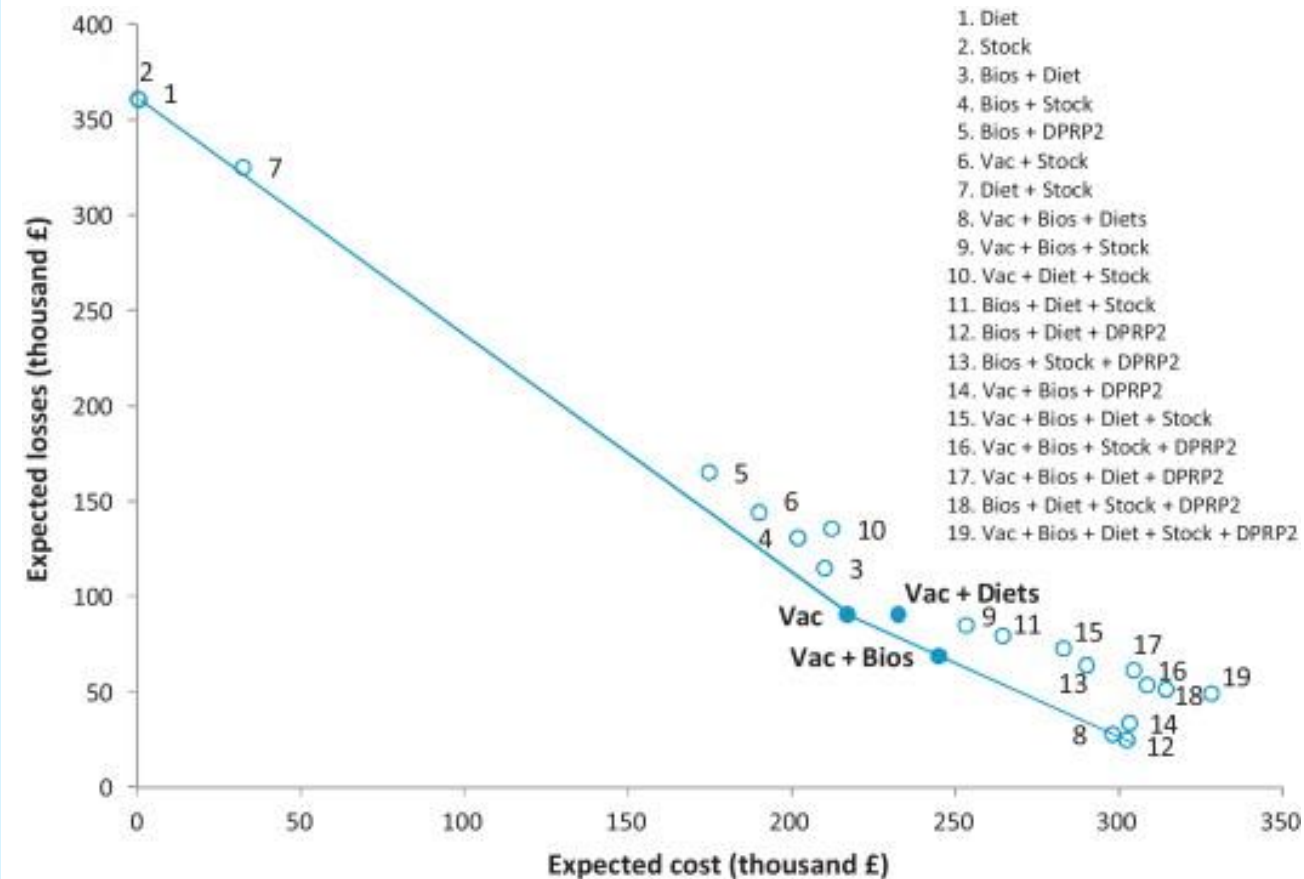
Frontier for control of PCV2, as modelled by (Alarcon, Rushton et al. 2013)

What is the optimal and most cost efficient combinations of measures to control disease?

Perceptions, cooperation strategies, risk managemen and funds

Can free riding be corrected by private funds? How do different stakeholders perceive alternative interventions to monitor diseases?

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Investment in One Health, Economics of Animal Health and partnership at NVI

An interdisciplinary collaboration is key to increase knowlegde about the societal impact of animal disease burden.

Sometimes we need to shift focus to see what's right in front of us

Economics in Animal Health places animal health within a broader context and gives decision support on how to make best use of money in a complex world with scares resources.

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