

Mentimeter Questions

By 2050, Antimicrobial Resistance is estimated to cost the global economy:

- \$75 trillion
- \$90 trillion
- \$100 trillion
- \$130 trillion

How recently was the last new class of antibiotic discovered?

- 43 yrs
- 33 yrs
- 23 yrs
- 13 yrs

ANTIMICROBIAL RESISTANCE: THE SYSTEMIC RISK HIDDEN IN OUR FOOD SUPPLY

Teni Ekundare, Senior Manager, Investor Outreach

FAIRR Initiative

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How we work with investors and companies in the food sector

Define material risks for investors in the sector

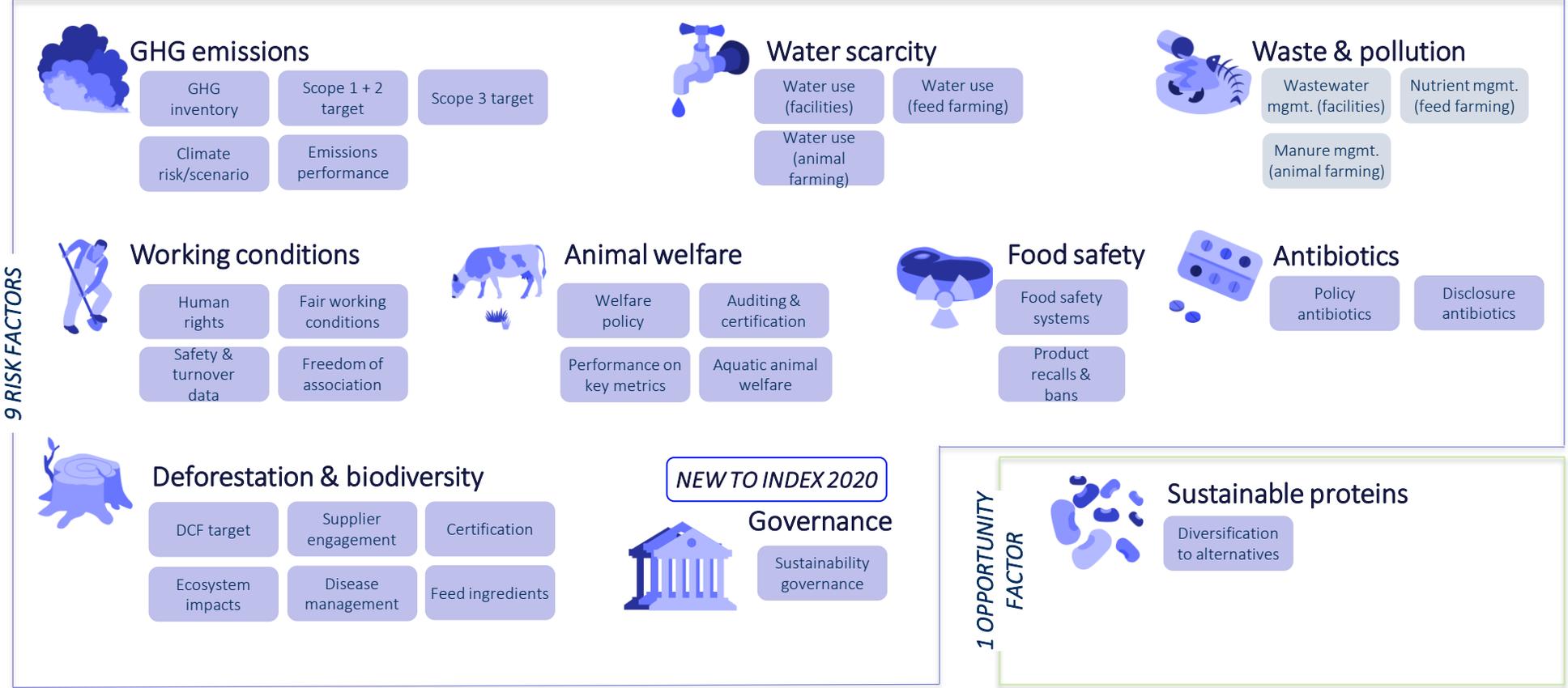
Produce research & facilitate engagements on material issues

Encourage companies to report on established metrics so investors can assess risks

Derive standardised metrics where there are gaps
(eliminate information asymmetry)

Help investors assess company performance on risks & opportunities

10 factors and 30 KPIs



MENTIMETER QUESTION

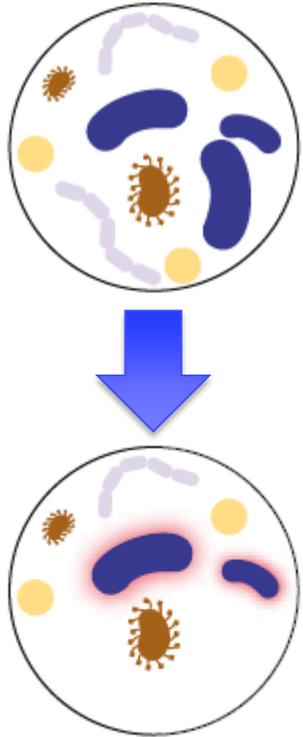


Antibiotics are the foundation of modern medicine, enabling surgery and cancer treatments. They are most valuable as “fire extinguishers”.



Source: John Wrex. Image source: Stanford Medicine, The Telegraph.

Bacteria develop resistance through selective pressures, such as the administration of an antibiotic. Susceptible bacteria die off, while other bacteria survive due to mutations.



- Applying selective pressure – e.g. natural competition, or antibiotic use – leads to the development of resistance (selection for resistance)
- Susceptible bacteria die off
- Other bacteria survive through adaptive mutations in their DNA which confer resistance to the mode of action of the selective pressure (defence / resistance mechanisms)

Global AMR Risk Exacerbated by Animal Agriculture

Risks are not priced into today's markets.
Yet these risks are becoming severe, with increasingly forceful
policy responses needed.
**The animal protein industry
is particularly exposed.**



Animal agriculture accounts for the majority of global antibiotic use, but this use is highly inefficient from a biological perspective

Up to **80%** of all antibiotics are given to animals

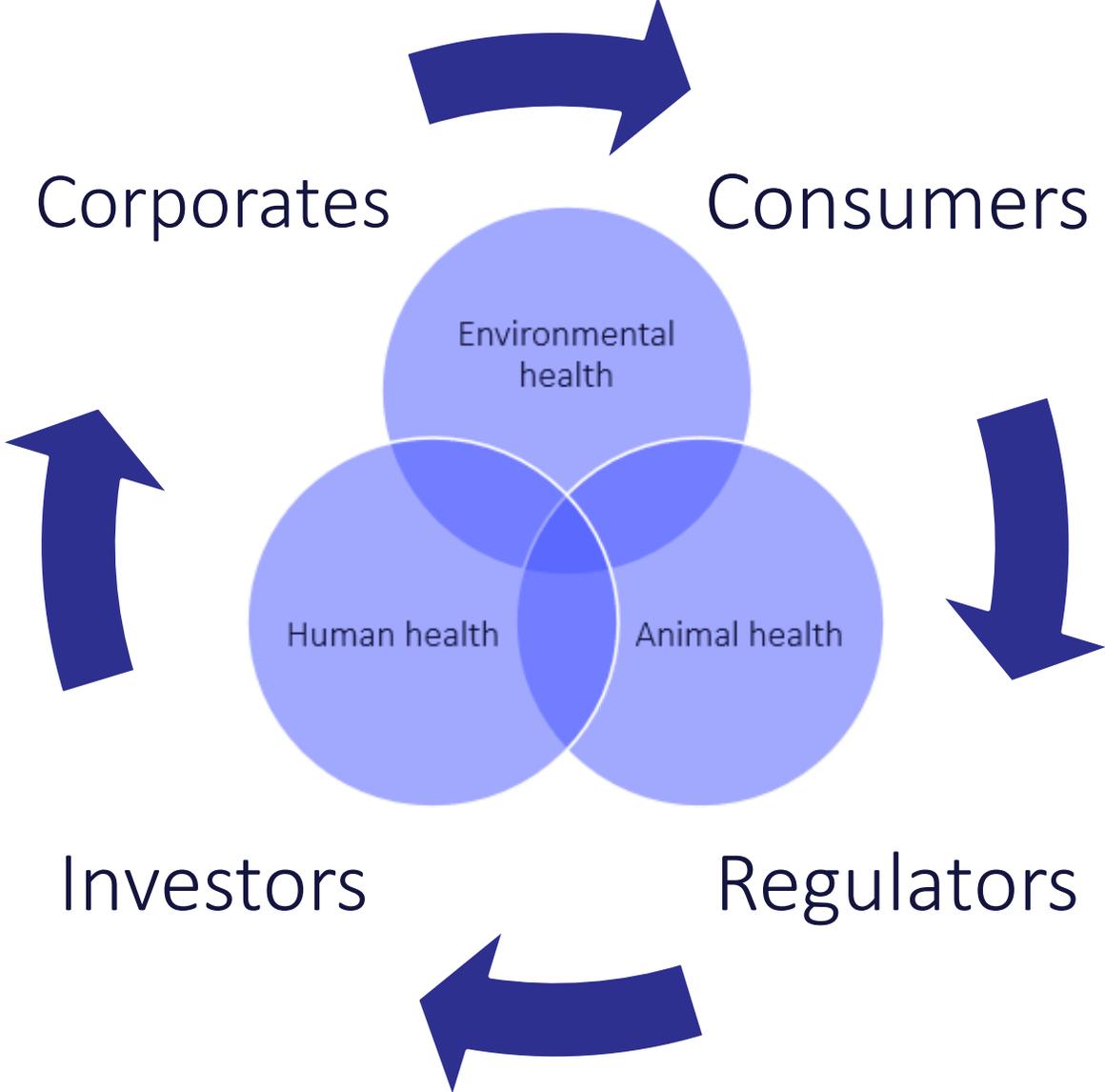
Antimicrobial use in livestock is forecast to **jump 67% by 2030**

Up to **75%** of antibiotics used in aquaculture may be lost into the surrounding environment

Up to **80%** of consumed antibiotics are **excreted** through urine and faeces

Major waste flows including wastewater, manures and agricultural run-off contain antibiotic residues and antibiotic-resistant bacteria

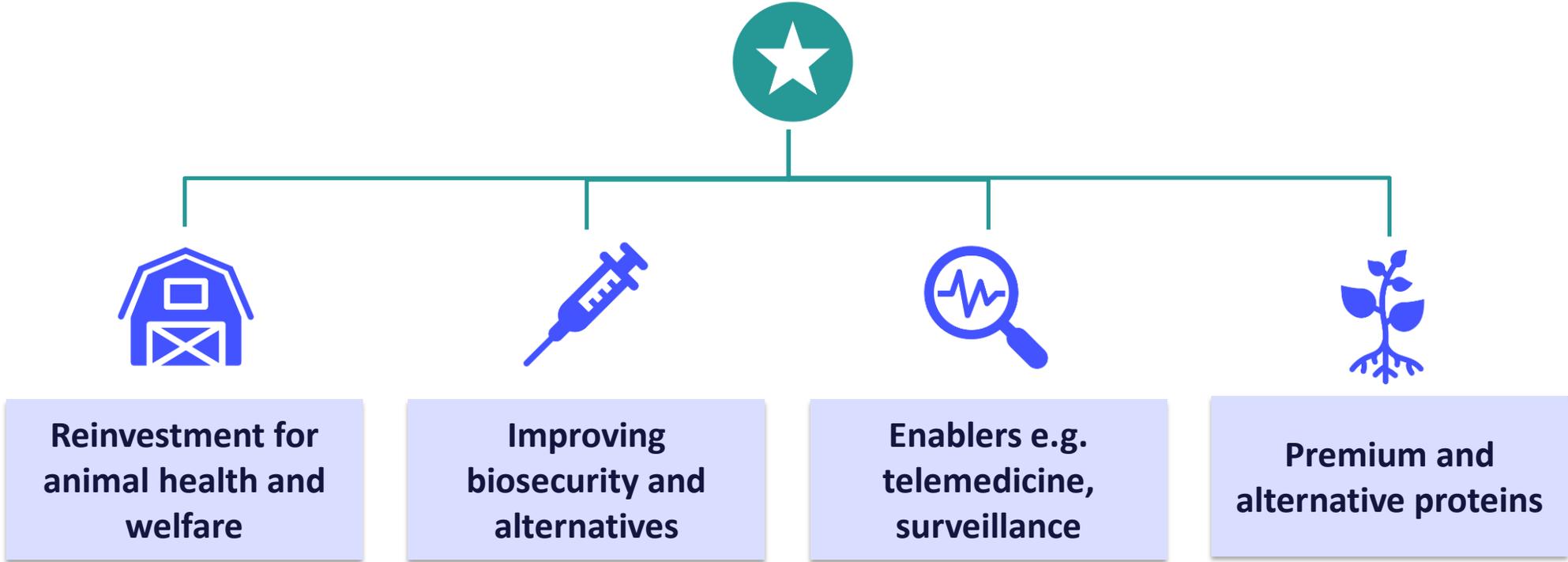
Growing global recognition of AMR has given rise to coordinated stewardship initiatives under the “One Health” approach that integrates human, animal and environmental areas



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Opportunities

Key opportunities within animal protein supply chain and broader economy



Animal Welfare & AMR

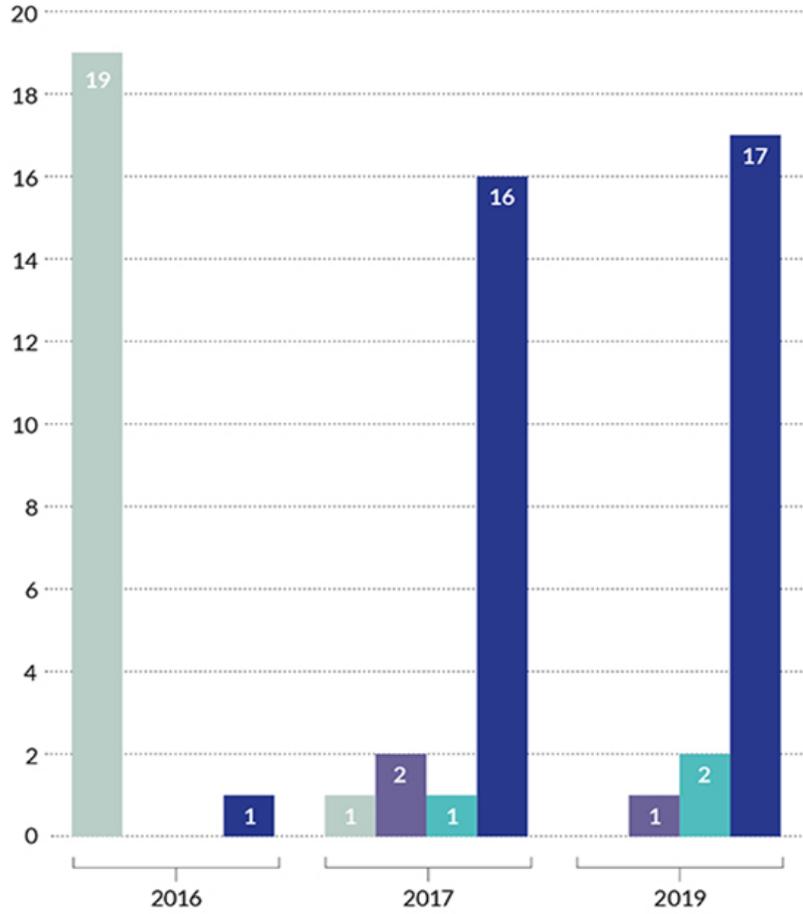
- Antibiotics are the foundation of both modern medicine, and industrial animal agriculture: enabling crowded, stressful and unsanitary conditions
- These conditions weaken their immune systems and the close proximity through confinement result in a higher risk of AMR
- High animal welfare standards are crucial to mitigate the risk of AMR



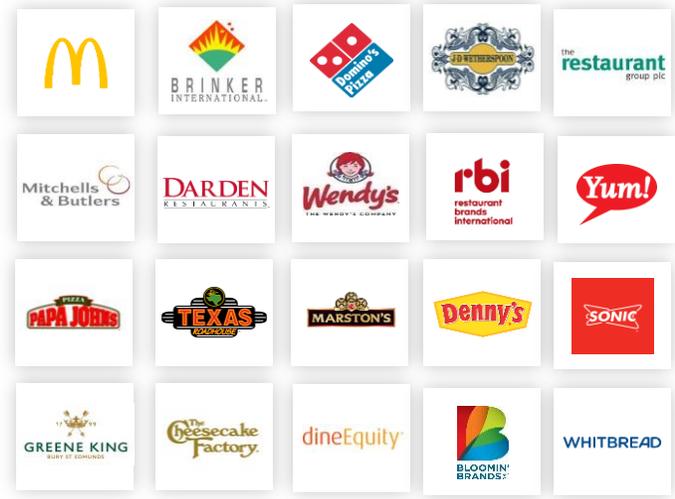
Corporate practices are changing through investor engagement

Antibiotic use policy development in 20 global fast food companies over three years

- No policy
- Policy under-development
- Internal policy only
- Publicly available policy



74 investors
\$4.9 trillion in combined assets



*Contact: teni.ekundare@fairr.org
Senior Manager, Investor Outreach*

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