The use of anti-microbials in animal production

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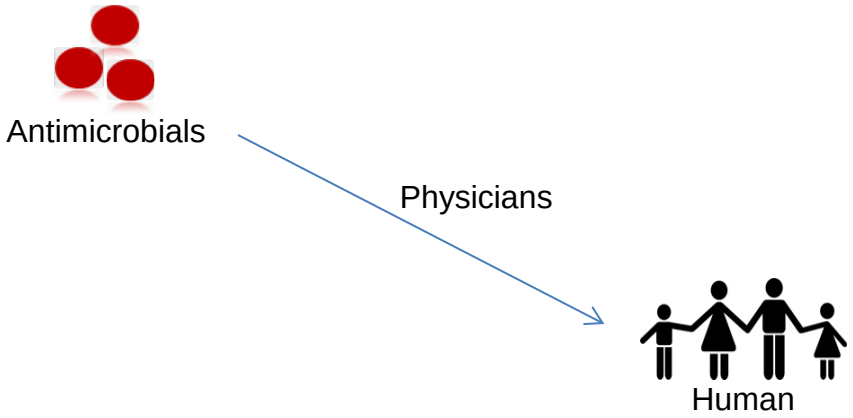
Antimicrobials

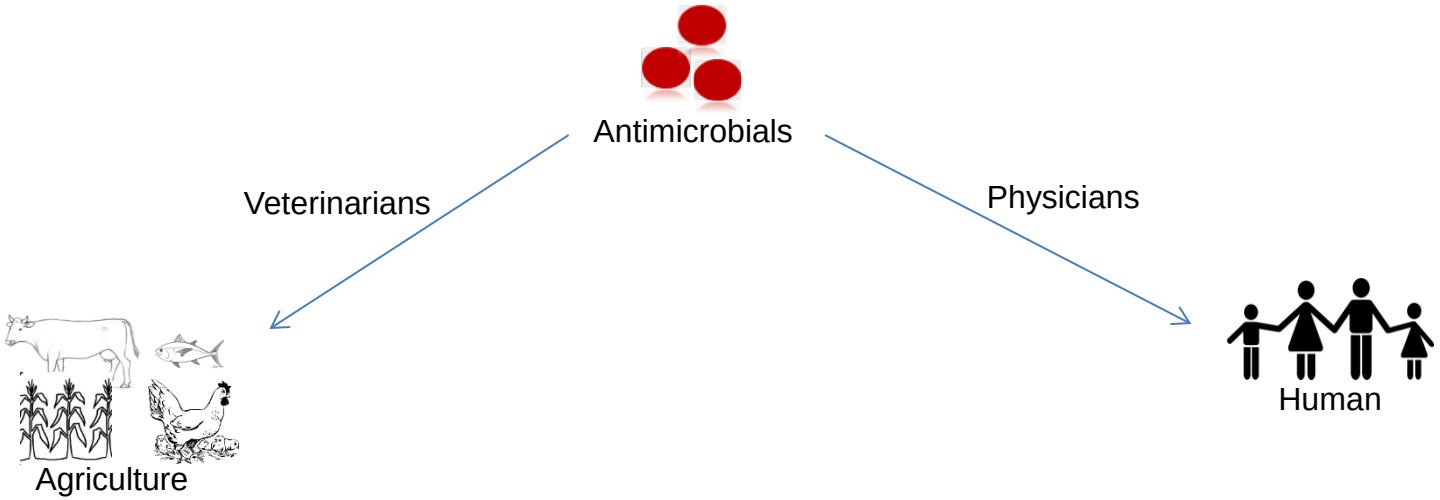
Antimicrobials

Antimicrobial are **essential** drugs used to treat infections caused by microorganisms in animals and humans.

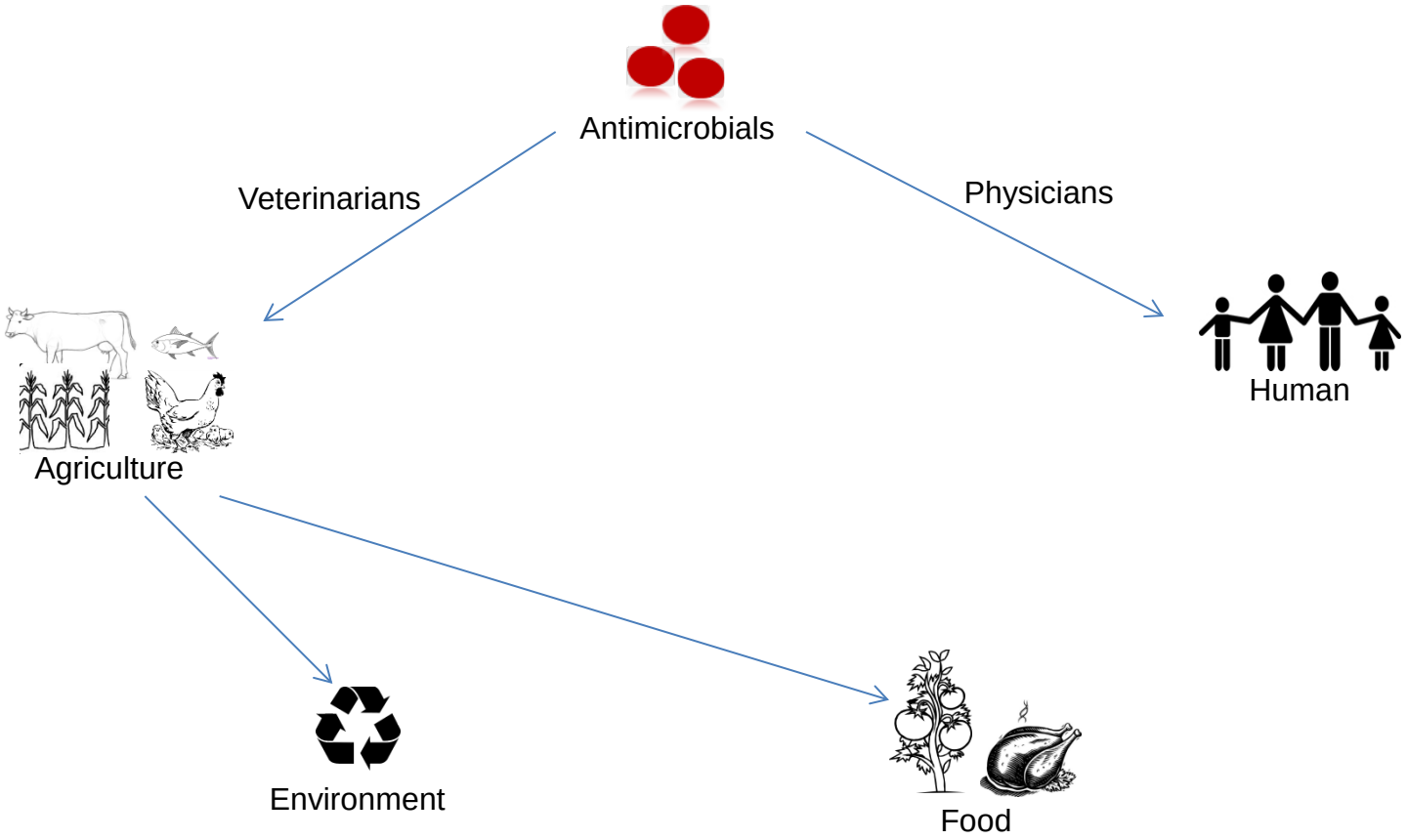
Antimicrobial usage



Antimicrobial usage

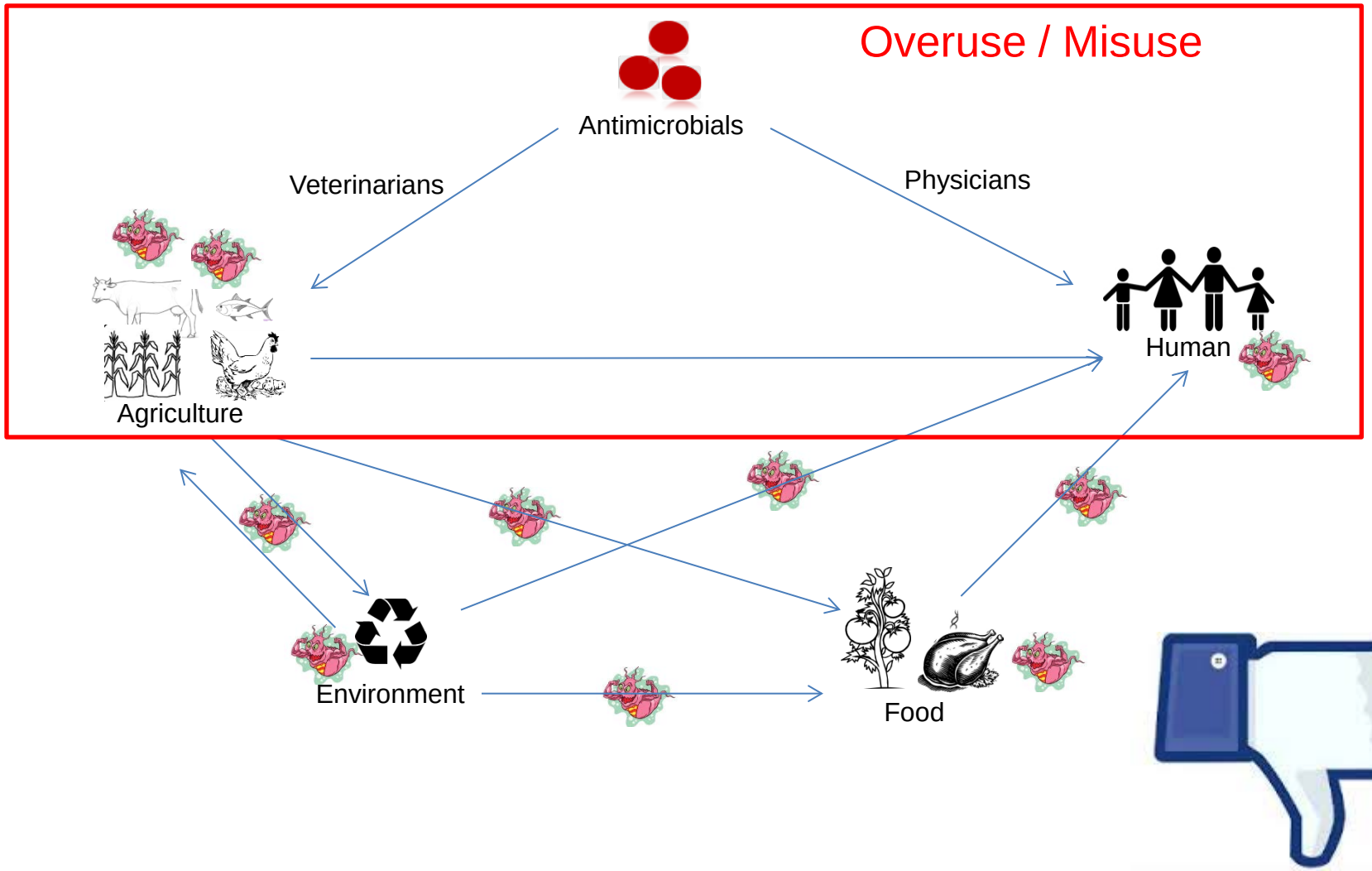


Antimicrobial usage

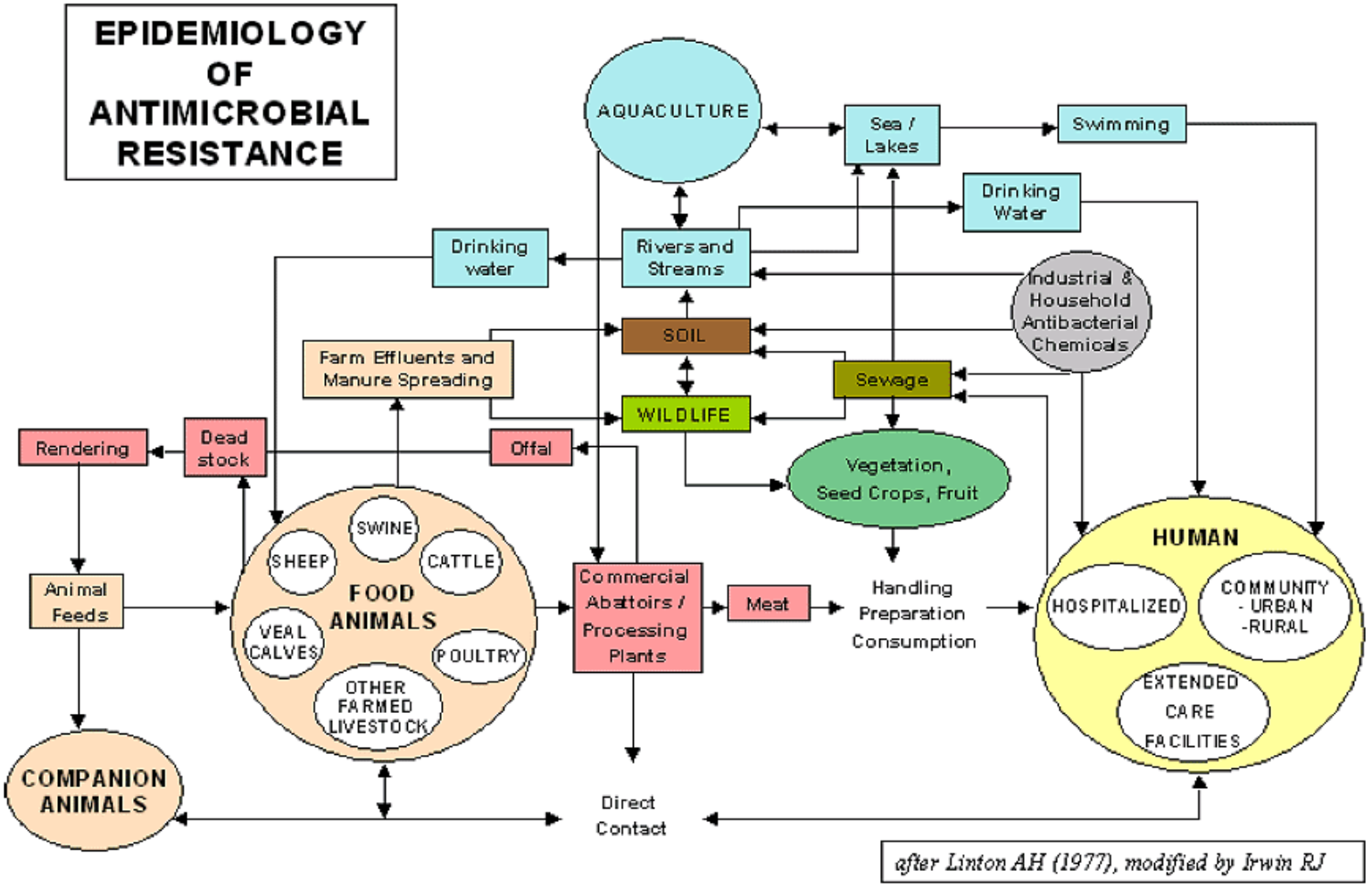


Antimicrobial use


drug-resistant pathogens



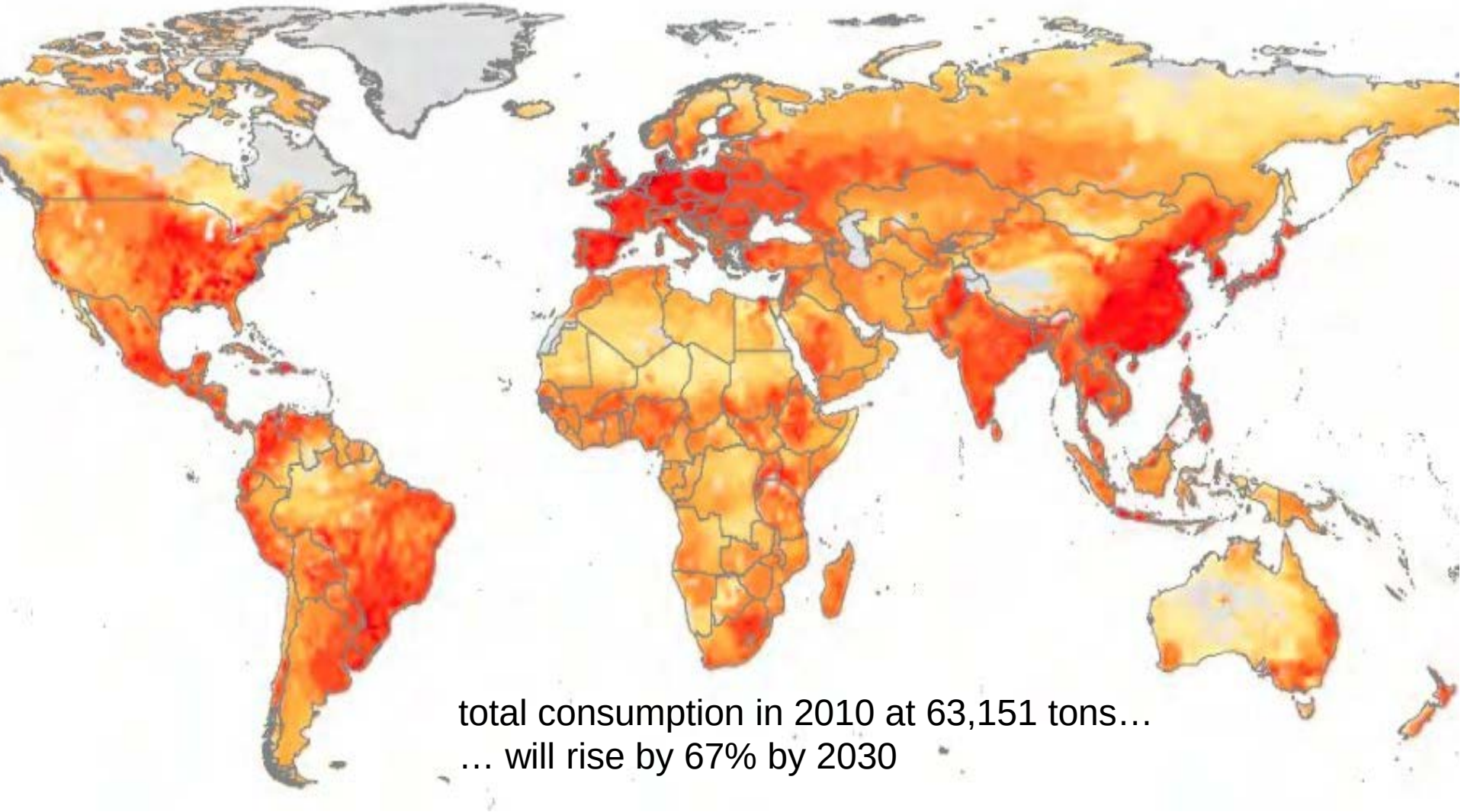
A Complex Problem



Impact pathways

- Through work with animals and their products (workers) – large, high certainty
- Through animal products (consumers) – probably low on average, large in low and mid income countries
- Through the environment (everyone) – probably large, but very variable

Global map of antimicrobial consumption * in livestock



total consumption in 2010 at 63,151 tons…
… will rise by 67% by 2030

*Consumption in milligrams per 10 km^2

Source: Global trends in antimicrobial use in food animals

Livestock sector growth

- 70 % more animal products by 2050, driven by income growth, population, urbanization
- Recent “peak meat” in developed countries
- Strong growth in emerging countries
- Africa starting its own livestock revolution
- Rapid intensification in pigs, poultry, dairy

Structural Changes

- Highest growth in monogastrics (poultry)
- Up-scaling of operational size in production
- Sector vertical integration
- Geographic concentration (close to consumption, close to feed supply)

Requirements for industrial livestock production

- Surplus feed – nitrogen fertilizer
- Uniform animal genetics
- Reduced disease pressure

Use of anti-microbials in animal production

- Therapeutic – treat disease
- Prophylactic – prevent disease risk
- As growth promoter (sub-therapeutic use)

- Estimates* of the global average annual consumption of antimicrobials per kilogram of animal produced:
  - 45 mg·kg−1 for cattle
  - 148 mg·kg−1 for chicken
  - 172 mg·kg−1 for pigs
- Estimated increase in use by 67%, from 63,151 ± 1,560 tons to 105,596 ± 3,605 tons

* Van Boeckel et al., 2015

Antimicrobial Resistance = Cross-cutting issue and a Global Threat

Public - importance of public understanding of the threat. Raise awareness

Physicians - Misuse of antibiotic prescription by clinicians (prescribing antibiotics for minor illnesses) and in hospitals;

Veterinarians - overuse and misuse of antimicrobials in food animals

Farmers - The use of preventive antibiotic in animal farm as a substitute of a good hygiene and health on factory farms. Antibiotics as a less expensive prevention system.

Policies - Need for national policy to contain antimicrobial resistance

Private sector - Lack of accurate information on the use of antibiotics

Academia – more scientific evidence that antibiotics use in animal feed will eventually harm humans

- ✓ Coordinated interventions

International/intergovernmental Organizations - joint international effort to control this threat

FAO :
Draft Resolution on AMR to be presented to the 39th Conference in June 2015 for adoption

WHO :
Draft Global Action Plan on AMR to be presented at International Health Conference in May 2015

OIE* :
Draft resolution on AMR to be presented at the annual General Assembly in May 2015

*intergovernmental organization

Status Report on AMR to 39th FAO conference (6 to 13 June 2015)

- Recognizes AMR as a cross-sectoral, multi-stakeholder issue that requires multi-agency efforts (FAO, WHO, OIE, others)
- Food security implications (core mandate of FAO) – trade-offs between different objectives
- Problem more pronounced in intensive production systems

Suggested FAO Response

- Develop step-wise, progressive management pathway (PMP) to assist Member Countries to set targets, improved management of AMR risks and antimicrobial use, in line with the GAP on AMR
- FAO has established strong and effective collaboration on AMR within the framework of the FAO/OIE/WHO tripartite agreement and with other public and private sector organizations
- Create a dedicated body of work will support and enhance the contribution of the livestock and fishto sustainable food and agriculture, global food security and health, equity and growth

Issues

- **Scientific evidence Vs precautionary principle** / approach might be applied in cases when the scientific evidence is not conclusive enough to determine a level of protection but there is a necessity to take measures for the purposes of protecting public health, safety, or the environment* - '*better safe than sorry*'.

- **Antimicrobials usage** in livestock has been the subject of debate about the appropriateness of using these important drugs **in animal feeds** - Ethical issues. Or use as **preventive** antibiotic in animal farm as a substitute of a good hygiene and health on factory farms. Antibiotics as a less expensive prevention system.

- **Trade and economic interests.** Lowering or banning sub-therapeutic (or preventative) antimicrobial use in animal production could have serious economic effects on the livestock. *What about **developing countries**?*

- Developing of **new drugs** Vs limiting the sue those existing

- The importance of **public understanding** of the threat.

*Trans Atlantic Consumer Dialogue TACD

Need for urgent action

- ✓ increase awareness amongst all stakeholders involved (political, public)
- ✓ strengthen national monitoring and surveillance of antimicrobial resistance in agriculture, food and environment
- ✓ to support the development of sustainable food production systems and promote good animal husbandry management, biosecurity and biosafety
- ✓ encourage and support research
- ✓ Support policy making processes that use a “One Health” approach