



WOAH Annual Report on Antimicrobial Agents Intended for Use in Animals



Dr. Delfy Góchez,
Data Management Officer – AMU
Antimicrobial Resistance and Veterinary Products Department

CAMEVET

San Salvador, 9-11 November 2022

1924

Creation:
Office International des
Epizooties
(OIE)



2003

New name:
World Organisation
for Animal Health
(OIE)

2021-25

Seventh Strategic Plan

2022

New acronym for the
organisation: **WOAH**
(Eng.) - OMSA (Fr. & Sp.)

301
Reference Centres

182
Members

90
Partner organisations

For each WOAHA Member:

- 1 National Delegate to WOAHA
- 8 National Focal Points on specific subject matter, including one on Veterinary Products including **AMR**

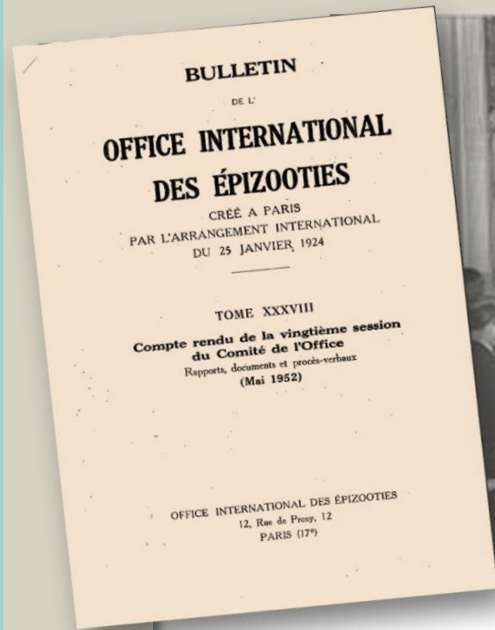
Headquarters in
Paris
160 staff

12
Regional offices
80 staff





1952 – 20th OIE Session

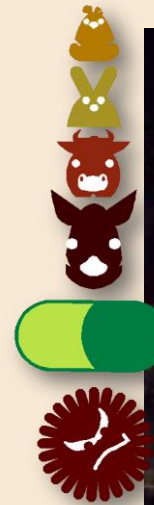


— 776 —

2° Le praticien ne doit pas utiliser les antibiotiques au gré de sa fantaisie, mais en suivant les règles qui ont été fixées par l'expérience.

L'utilisation des antibiotiques contre des germes insensibles à leur action ou particulièrement résistants, l'emploi de doses trop faibles ou pendant un temps trop bref entraînent des dépenses inutiles, peuvent faire apparaître des germes résistants, retardent d'autant la mise en œuvre d'un traitement efficace et conduisent à des échecs qui nuisent à une méthode qui, lorsqu'elle a été judicieusement et correctement appliquée, a permis de sauver nombre de vies humaines et animales.

2013 – 1st Global Conference on Antimicrobial Resistance (AMR)



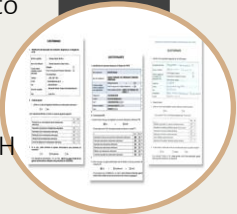
OIE Members agreed to collect harmonised AMU data in animals with the view to submit them to the OIE and to establish a global database



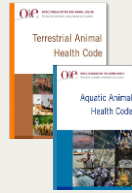
85% Participation
(152 Member Countries)

2012 - Survey on the implementation of Chapter 6.9 of the Terrestrial Animal Health Code

Some of the objectives were: To determine what actions are needed and to help the OIE to develop its strategy regarding AMU
To prepare the 1st WOAH Global Conference on AMR



2013 - 1st Global Conference on AMR



2014 – WOAH AMU Template

Created by the experts of the OIE ad hoc Group on AMR – based on Chapters 6.9 and 6.3 of the Terrestrial and Aquatic Codes, respectively.

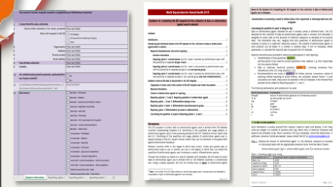


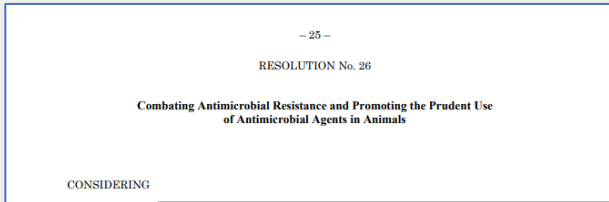
2014 – National Focal Points for Veterinary Products (FPVP)

Documents were discussed with WOAH National FPVP in the Americas; Europe; and Asia, Far East and Oceania regions; Africa was asked by email.



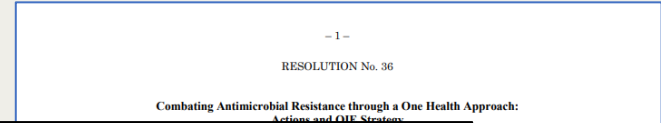
1st Round Launched in 2015





Resolution 26 “Combating AMR and Promoting the Prudent Use of Antimicrobial Agents in Animals”

- The OIE develops a procedure and standards for data quality for **collecting data annually** from OIE Member Countries on the use of antimicrobial agents in food-producing animals with the aim of **creating an OIE global database...**

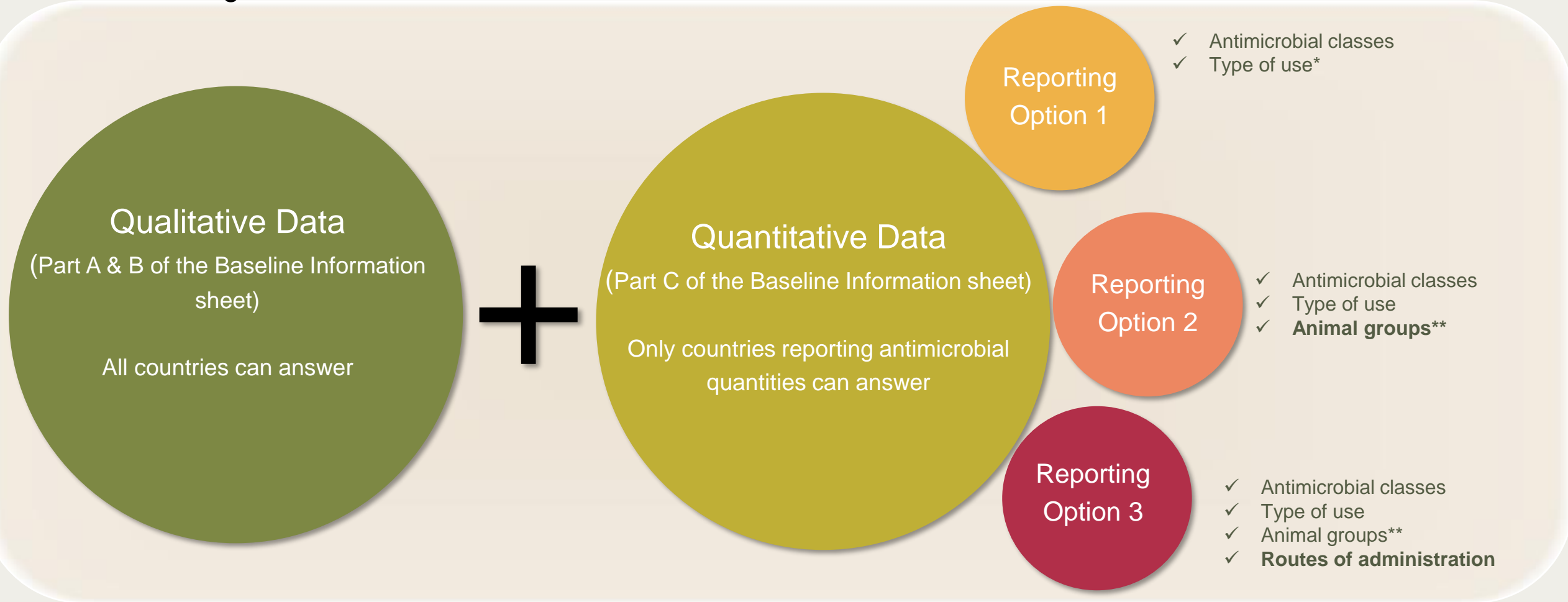


Resolution 36 “Combating AMR through a One Health Approach: Actions and OIE Strategy”

- The OIE actions to be compiled and consolidated within the OIE Strategy on antimicrobial resistance include:
 - **The establishment and the management of a database for the collection of data on the use of antimicrobial agents in animals as well as the development of interpretation indicators**



The sections of the WOAH Template named 'Reporting Options' 1, 2 and 3, collect the quantities of antimicrobial agents intended for use in animals.



* Type of use: veterinary medical use or growth promotion

**For the purposes of the WOAH database, animal groups means: 'terrestrial food-producing animals', 'aquatic food-producing animals' or 'companion animals'



Based on WOAH Standards

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8 Rounds



6 Reports Published



157 Members Participated in the 6th Round

Terrestrial Animal Health Code

- Chapter 6.9. Monitoring of the quantities and usage patterns of antimicrobial agents used in food-producing animals

Aquatic Animal Health Code

- Chapter 6.4. Monitoring of the quantities and usage patterns of antimicrobial agents used in aquatic animals

0 500 1000 1500 2000 2500 km



WOAH's Report on Antimicrobial Agents Intended for Use in Animals



1



4



2



5



3



6



Result of the Round



Regional Information



Animal Biomass



Antimicrobial Quantities Focused on One Year



Trends on Time



OIE Annual Report on Antimicrobial Agents Intended for Use in Animals: Methods Used

Dely Góchez^{1*}, Margot Raicok¹, Jorge Pinto Ferreira¹, Morgan Jeannin¹, Gerard Moulin¹ and Elisabeth Erlacher-Vindel¹

¹Antimicrobial Resistance and Veterinary Products Department, World Organisation for Animal Health (OIE), Paris, France, ²Agence nationale de Sécurité Sanitaire, Alimentation, Environnement, Travail (ANSES), Fougères, France

For over two decades, the World Organisation for Animal Health (OIE) has engaged in combatting antimicrobial resistance (AMR) through a One Health approach. Monitoring of antimicrobial use (AMU) is an important source of information that together with surveillance of AMR can be used for the assessment and management of risks related to AMR. In the framework of the Global Action Plan on AMR, the OIE has built a global database on antimicrobial agents intended for use in animals, supported by the Tripartite (World Health Organization (WHO), Food and Agriculture Organization of the United Nations (FAO) and OIE) collaboration. The OIE launched its first annual data collection in 2015 and published the Report in 2016. The second Report, published in 2017, introduced a new methodology to report quantitative data in the context of relevant animal populations, and included for the first time an annual analysis of antimicrobial quantities adjusted for animal biomass on a global and regional level. A continuing annual increase of countries participating in the data collection demonstrates the countries' engagement for the global development of monitoring and surveillance systems in line with OIE international standards. Where countries are not yet able to contribute their quantitative data, their reports also highlight the barriers that impede them in data collection, analysis and/or reporting. The OIE Reports show annual global and regional estimates of antimicrobial agents intended for use in animals adjusted for animal biomass, as represented by the quantitative data reported by countries to the OIE. The OIE advises caution in interpretation of estimates made in the first few years of reporting recognizing some important limitations faced by countries as they develop their monitoring systems. The OIE remains strongly committed to supporting its Members in developing robust and transparent measurement and reporting mechanisms for AMU.

Keywords: antimicrobial resistance (AMR), antimicrobial use (AMU), report, methods/methodology, surveillance, monitoring

INTRODUCTION

The World Organisation for Animal Health (OIE) has worked actively for more than two decades on veterinary products, including antimicrobial agents, and developed a coherent strategy for its activities in this area (1). Monitoring of antimicrobial use (AMU) is an important source of information that, together with surveillance of AMR, can be used for the assessment

Comparison of different biomass methodologies to adjust sales data on veterinary antimicrobials in the USA

Ece Bulut^{1*} and Renata Ivanek¹

¹Department of Population Medicine and Diagnostic Sciences, College of Veterinary Medicine, Cornell University, Ithaca, NY, USA

*Corresponding author. E-mail: eb643@cornell.edu

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Objectives: The United States (US) FDA, European Surveillance of Veterinary Antimicrobial Consumption (ESVAC), Public Health Agency of Canada (PHAC) and World Organisation for Animal Health (OIE) established methodologies that characterize antimicrobial sales for use in food animals by adjusting the sales by animal biomass. Our aim was to review and compare these methodologies on US-specific data.

Methods: Annual antimicrobial sales for cattle, swine, chickens and turkeys in the USA between 2016 and 2018 were adjusted by the FDA, ESVAC, PHAC and OIE methodologies. To better understand the advantages and disadvantages of the four methodologies, their biomass denominators were compared regarding the level of detail accounted for in the estimated US livestock biomass, their ability to observe trends in animal biomass within a country and practicality in biomass estimation for comparing antimicrobial sales across countries.

Results: The four methodologies resulted in substantially different estimates of biomass-adjusted antimicrobial sales for use in US food animals. The 2018 estimates were the highest with the ESVAC methodology (314.7 mg of active antimicrobial ingredient/kg of animal biomass), followed by PHAC (191.5 mg/kg), FDA (127.6 mg/kg) and OIE (111.5 mg/kg). The animal weight parameters used in each methodology had the most impact on the biomass-adjusted sales estimates.

Conclusions: In regard to the estimation of the animal biomass, no methodology was found to be perfect; however, the FDA methodology had the best resolution in characterizing the US livestock biomass while the OIE methodology was best for biomass estimation for global monitoring of antimicrobial sales for use in food animals.

Introduction

Antimicrobial resistance is a global health crisis.¹ While emergence and spread of antimicrobial resistance is a complex multicausal evolutionary phenomenon, antimicrobial use in food animals is a contributor to this crisis and a potential source of antimicrobial-resistant infections in humans.^{2,3} Current evidence shows that antimicrobial-resistant organisms can be transferred from food animals to humans through direct contact,^{4,5} the food chain^{6–8} and the environment,^{9,11} and shared between food animals and humans.^{12–16} The expanding human population is becoming more reliant on animals for food, which induces large-scale intensive farming operations and expands antimicrobial use in food animals. This adds to the ongoing problem of overuse and inappropriate use of antimicrobials in food animals and increases the health risks in humans from resistant organisms.^{17–19}

In response to the global public health crisis of antimicrobial resistance, several countries have introduced restrictions on the use of antimicrobials in food animals. For example, use of veterinary antimicrobials for growth promotion was outlawed, prohibited or voluntarily withdrawn in the EU, Canada and the USA.^{20–22} Currently, antimicrobials are only approved for use in food animals to treat, control and prevent disease in these countries (and member countries of the EU).

In addition to the restrictions in the use of antimicrobials, monitoring antimicrobial use in animals also supports the fight against antimicrobial resistance.²³ Monitoring antimicrobial use can be used to assess whether the regulations aimed at antimicrobial use are successful, help determine whether there is an excessive use of antimicrobials, guide future policies, provide a general understanding of veterinary antimicrobial use over time and, most importantly, help study the association between antimicrobial use

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From OIE standards to responsible and prudent use of antimicrobials: supporting stewardship for the use of antimicrobial agents in animals

Jorge Pinto Ferreira^{1*}, Dely Góchez^{2*}, Morgan Jeannin¹, Mduzuzi Welcome Magongo³, Camille Loi¹, Karen Bucher¹, Gerard Moulin² and Elisabeth Erlacher-Vindel¹

¹World Organisation for Animal Health (OIE), Paris, France, ²French agency for veterinary medicinal products, French agency for food, environmental and occupational health safety, Fougères, France

*Corresponding author. E-mail: d.góchez@oie.int

The global action plan (GAP) on antimicrobial resistance (AMR) advocated the development of national action plans on AMR and the implementation of plans aimed at preventing, combating and monitoring AMR. The World Organisation for Animal Health (OIE)'s strategy on AMR and the prudent use of antimicrobials is aligned with the GAP and recognizes the importance of a One Health approach. This paper reviews the policies, tools and strategies that the OIE has in place to support its Members, envisioning an increased awareness of them and ultimately an increased implementation of the OIE standards. The OIE standards are endorsed by vote of all the 182 Members and are recognized by the World Trade Organization (WTO). The OIE List of Antimicrobial Agents of Veterinary Importance, which includes specific recommendations on the use of antimicrobial agents, is also of particular importance for antimicrobial stewardship. OIE's antimicrobial use (AMU) data collection started in 2015 and has been developed in particular to measure trends in AMU. An annual report is published as an output of this data collection. An AMU IT database system is being developed. The OIE provides assistance to its 182 Members to strengthen the implementation of OIE standards via its support of good governance, the Performance of Veterinary Services (PVS) Pathway, PVS Veterinary Legislation Support Program and training of veterinarians and veterinary paraprofessionals. In parallel, the OIE Observatory is a recent initiative, specifically targeting the monitoring of the implementation of the OIE standards. Cooperation agreements between the OIE and intergovernmental organizations and non-governmental organizations are instrumental for the increase of the dissemination and implementation of the OIE standards and guidelines.

1. Introduction

In the framework of the global action plan on antimicrobial resistance (GAP) adopted in 2015, all countries, through the decisions of the WHO World Health Assembly, the FAO Conference and the World Assembly of OIE Delegates, agreed to support the development of national action plans (NAPs) on antimicrobial resistance (AMR) in line with the GAP and to implement policies and plans aimed at preventing, combating and monitoring AMR.^{1–3}

Harmonization, through the implementation of international standards, provides a common approach⁴ and a point of reference for more consistent development and decision-making,⁵ and enables reporting on progress while achieving the objectives of the GAP.

While recognizing the importance of and need for animal disease prevention, the focus of this paper is on the World Organisation for Animal Health (OIE) support for implementation of stewardship by Members regarding the responsible and

prudent use of antimicrobials. It was written as part of the authors' routine work with the purpose of describing a summary of the standards, tools and activities that the OIE makes available for its Members regarding AMR and antimicrobial use (AMU). The overall goal is to provide a higher awareness of them, and ultimately an increased implementation of the OIE AMR/AMU standards, envisioning a better stewardship of antimicrobials, as a common global good.

The activities and outputs of international organizations are sometimes not well known by different stakeholders. To counteract this, our paper outlines the OIE AMR/AMU standards, what they mean and how they can support Members to quantify their AMU and control AMR. It then provides a brief explanation on how the OIE evaluates the performance of veterinary services. The final sections focus on the OIE Observatory (on the implementation of the standards), and finally on the OIE List of Antimicrobial Agents of Veterinary Importance, and its recommendations—important stewardship guidance. The final section features some of the positive consequences that can take place

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<https://doi.org/10.3389/fvets.2019.00317>

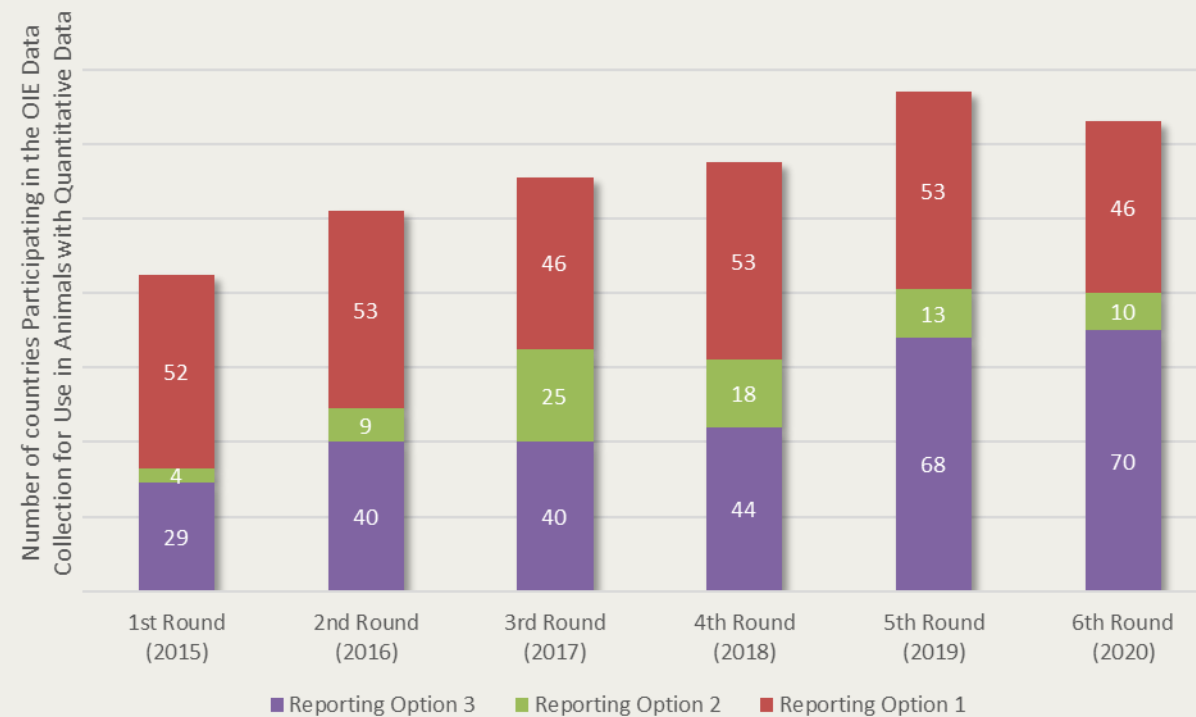
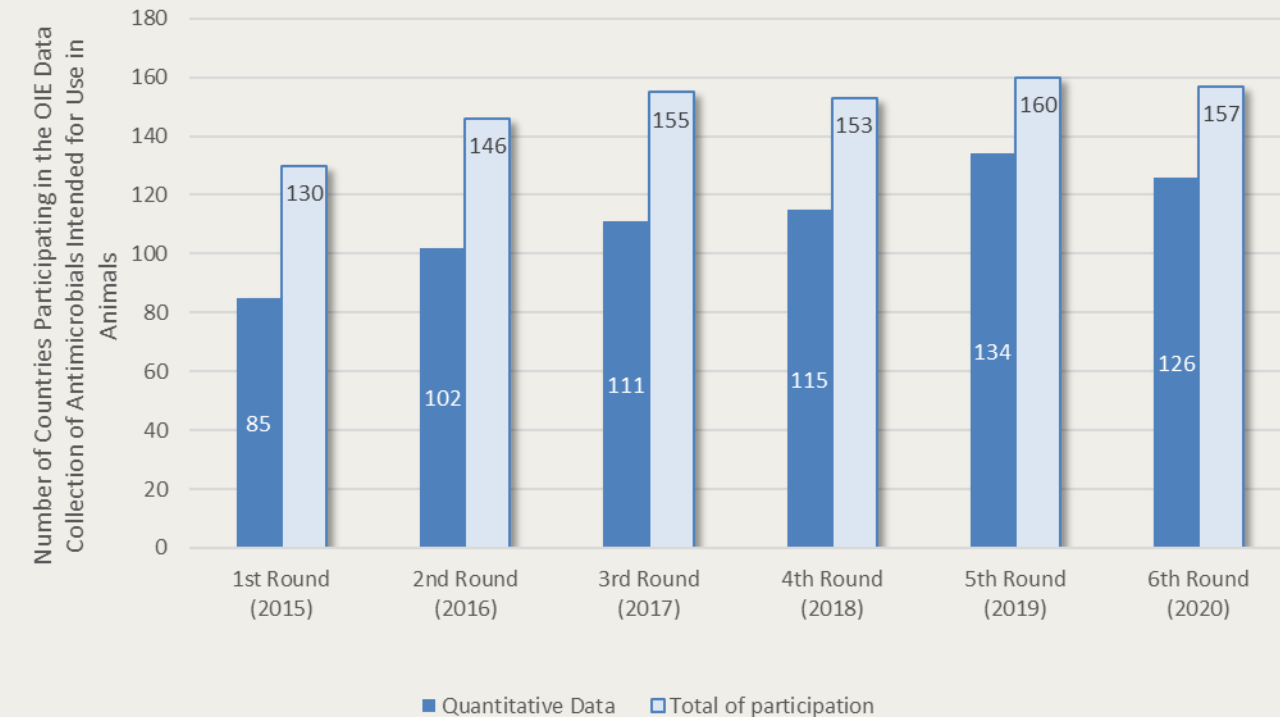
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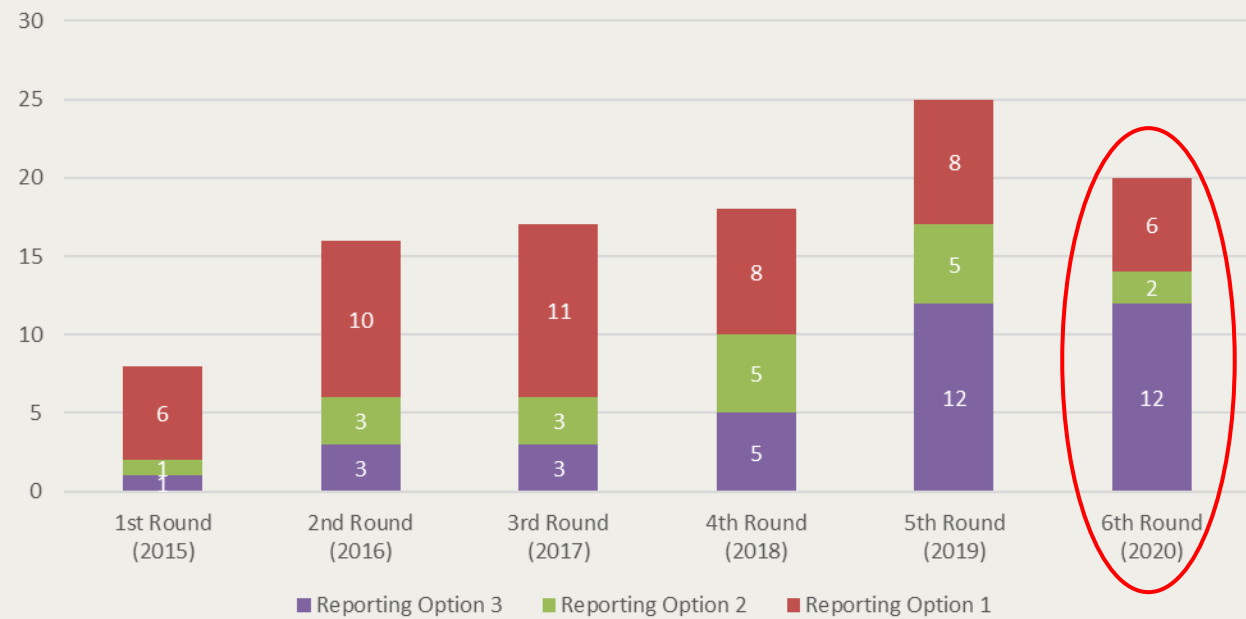
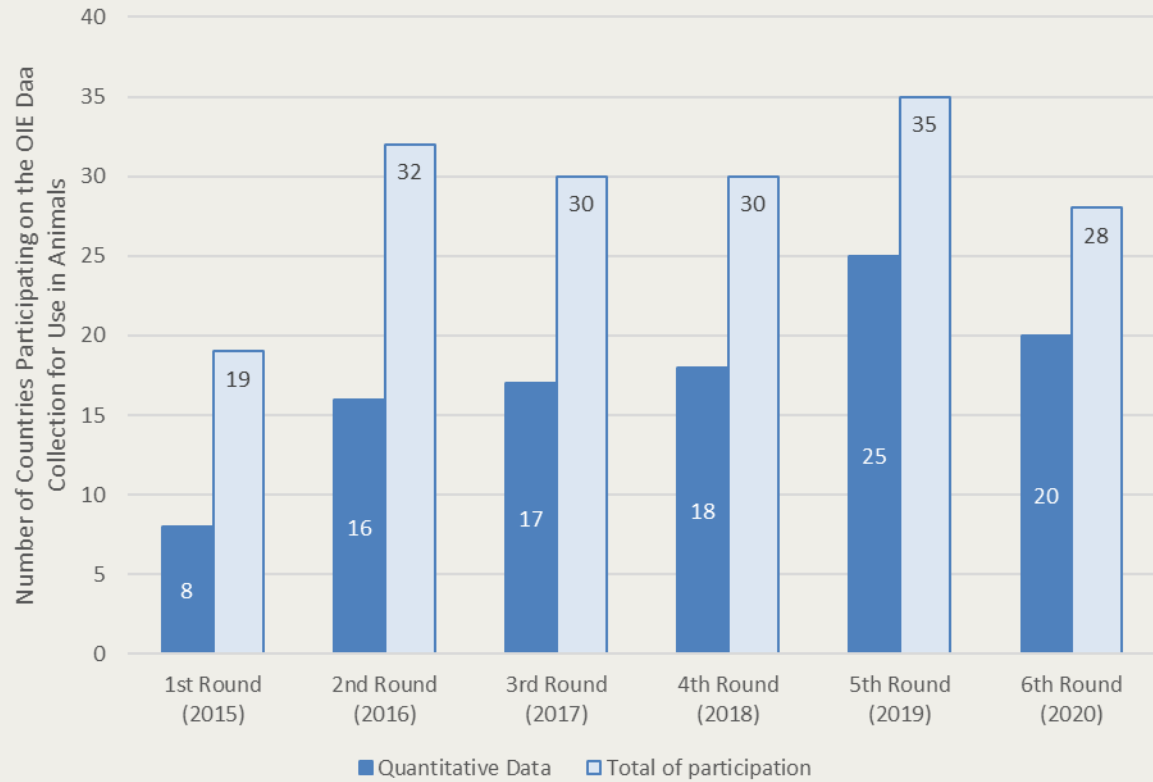
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KEY FIGURES

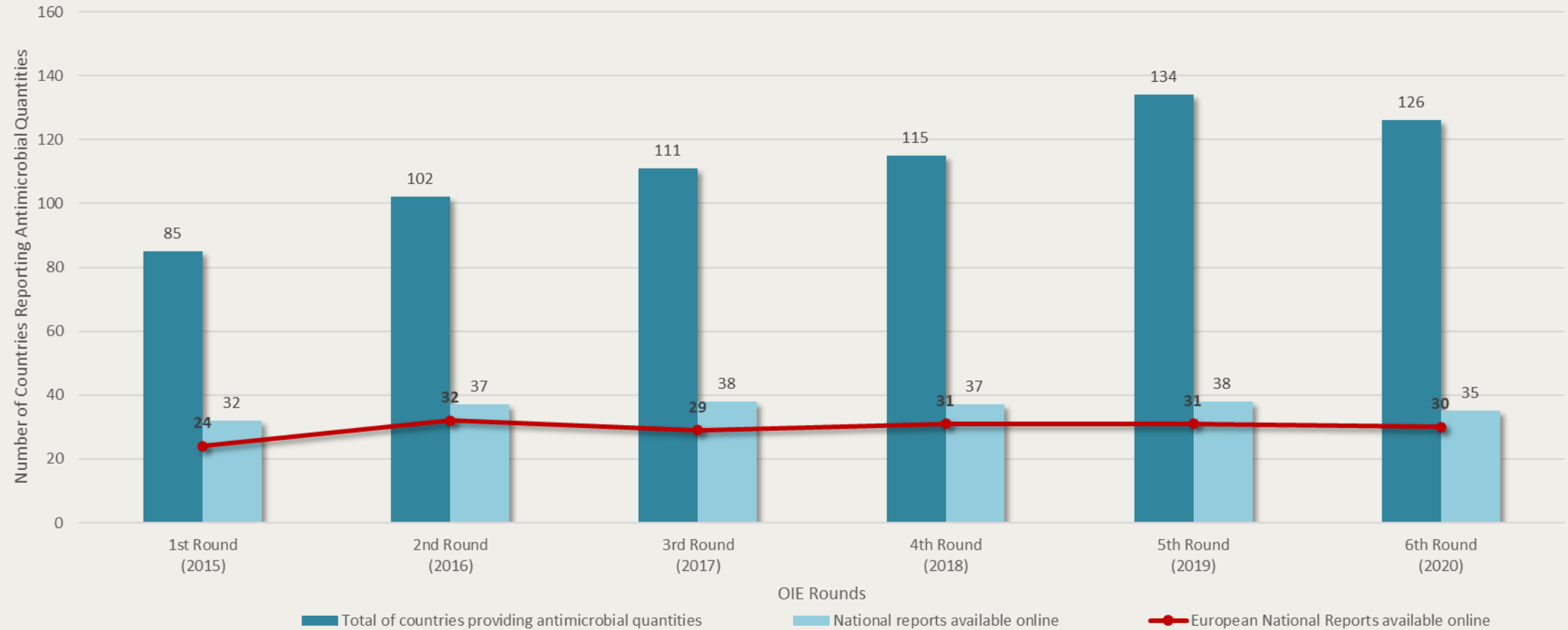


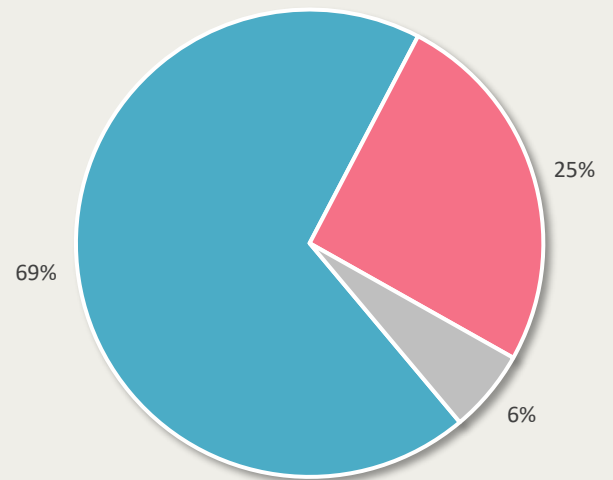




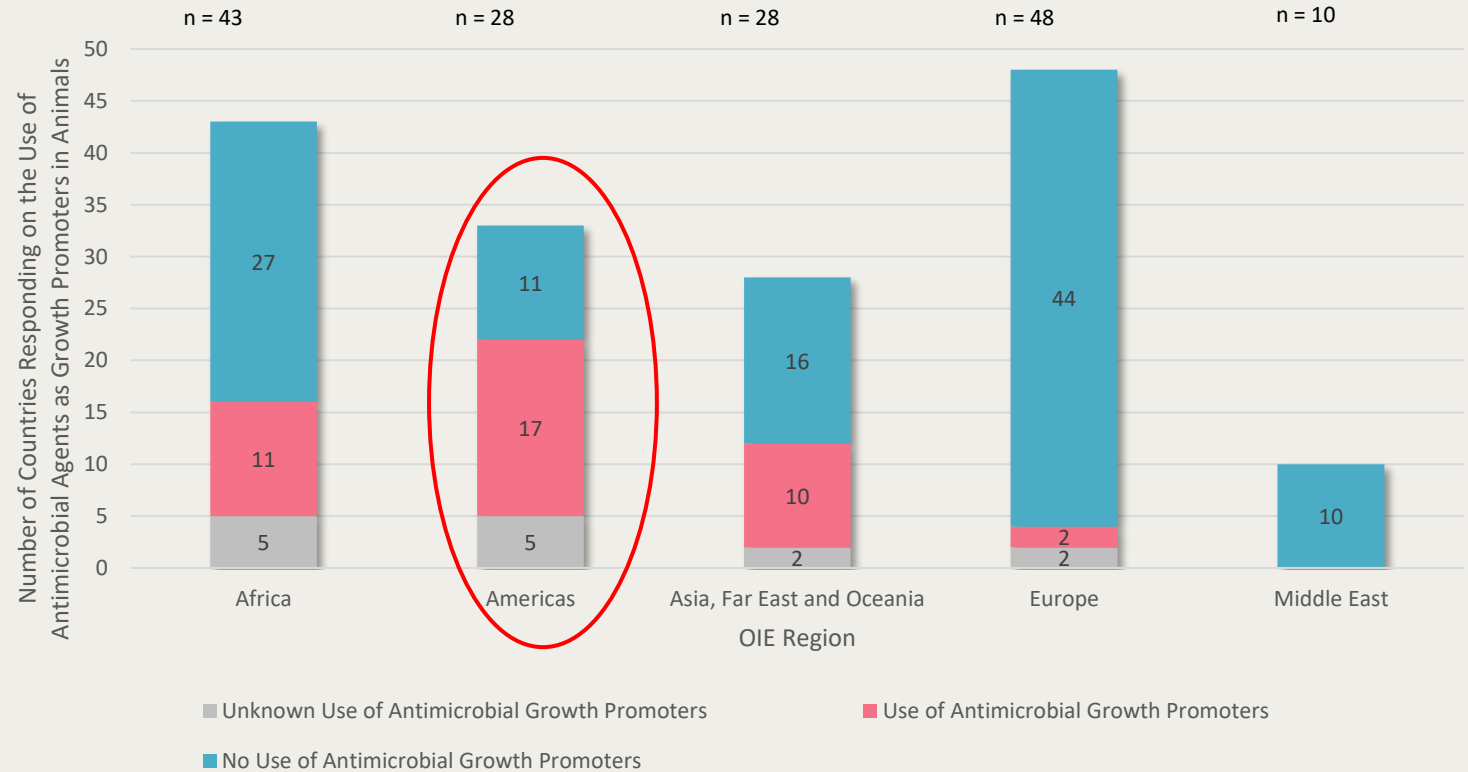


Number of Countries Participating in All Rounds of WOAAH Data Collection with National Reports Available online



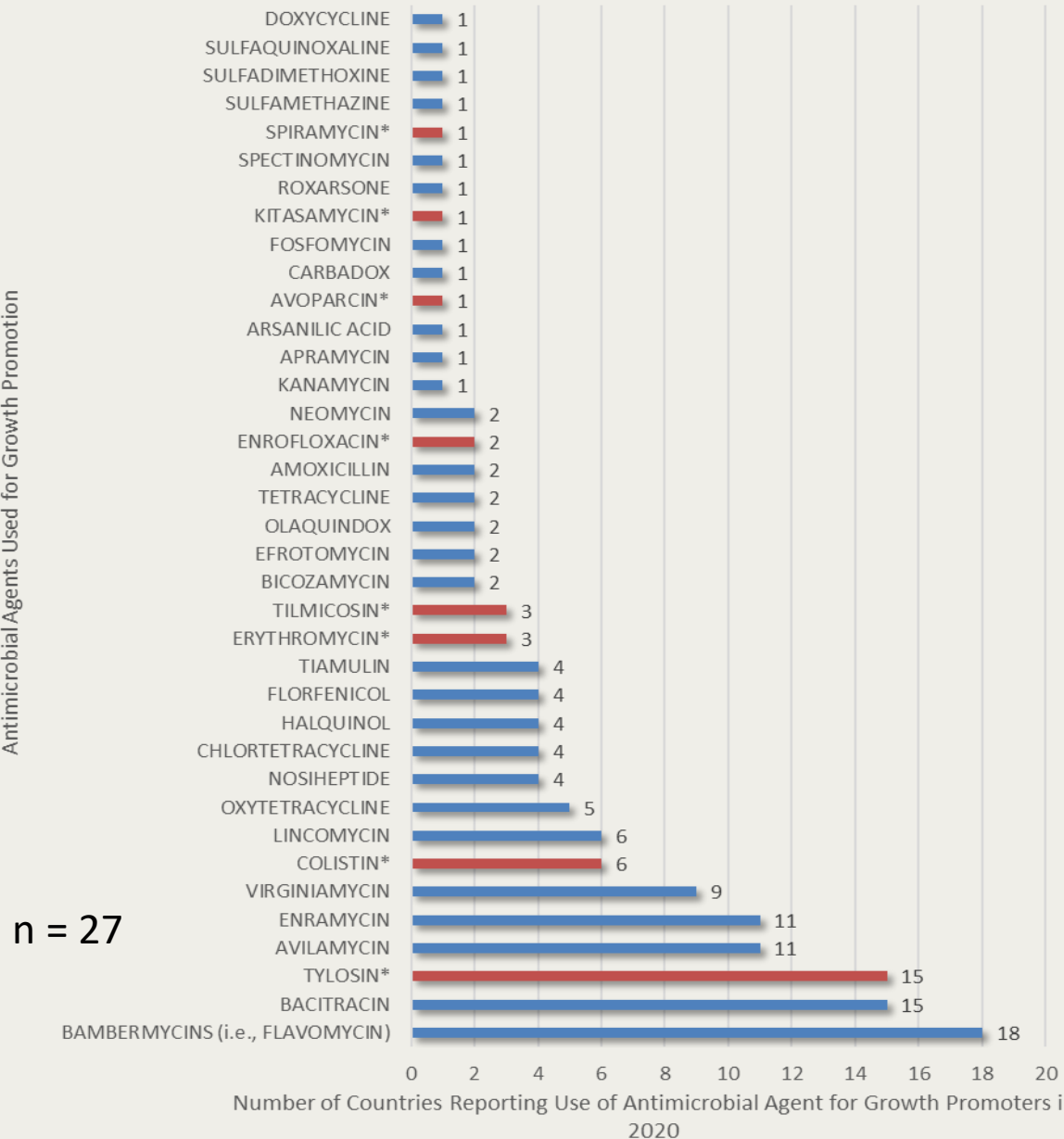


- No Use of Antimicrobial Growth Promoters
- Use of Antimicrobial Growth Promoters
- Unknown Use of Antimicrobial Growth Promoters

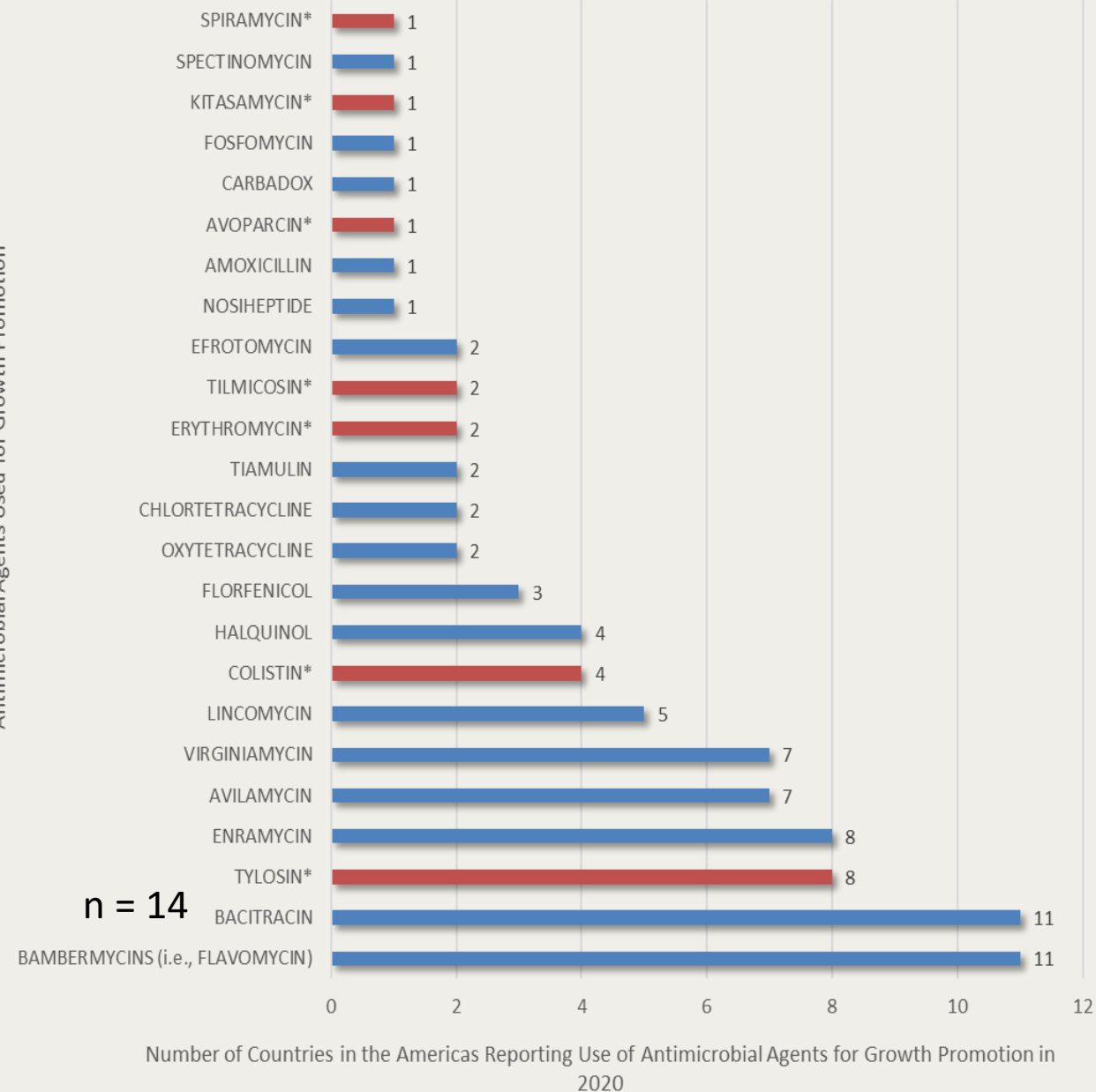


Antimicrobial Agents Used for Growth Promotion in Animals in 27 Countries in 2020

Antimicrobial Agents Used for Growth Promotion



Antimicrobial Agents Used for Growth Promotion



* The classes in the WHO category of Highest Priority Critically Important Antimicrobials should be the highest priority for Countries when phasing out the use of antimicrobial agents as growth promoters.

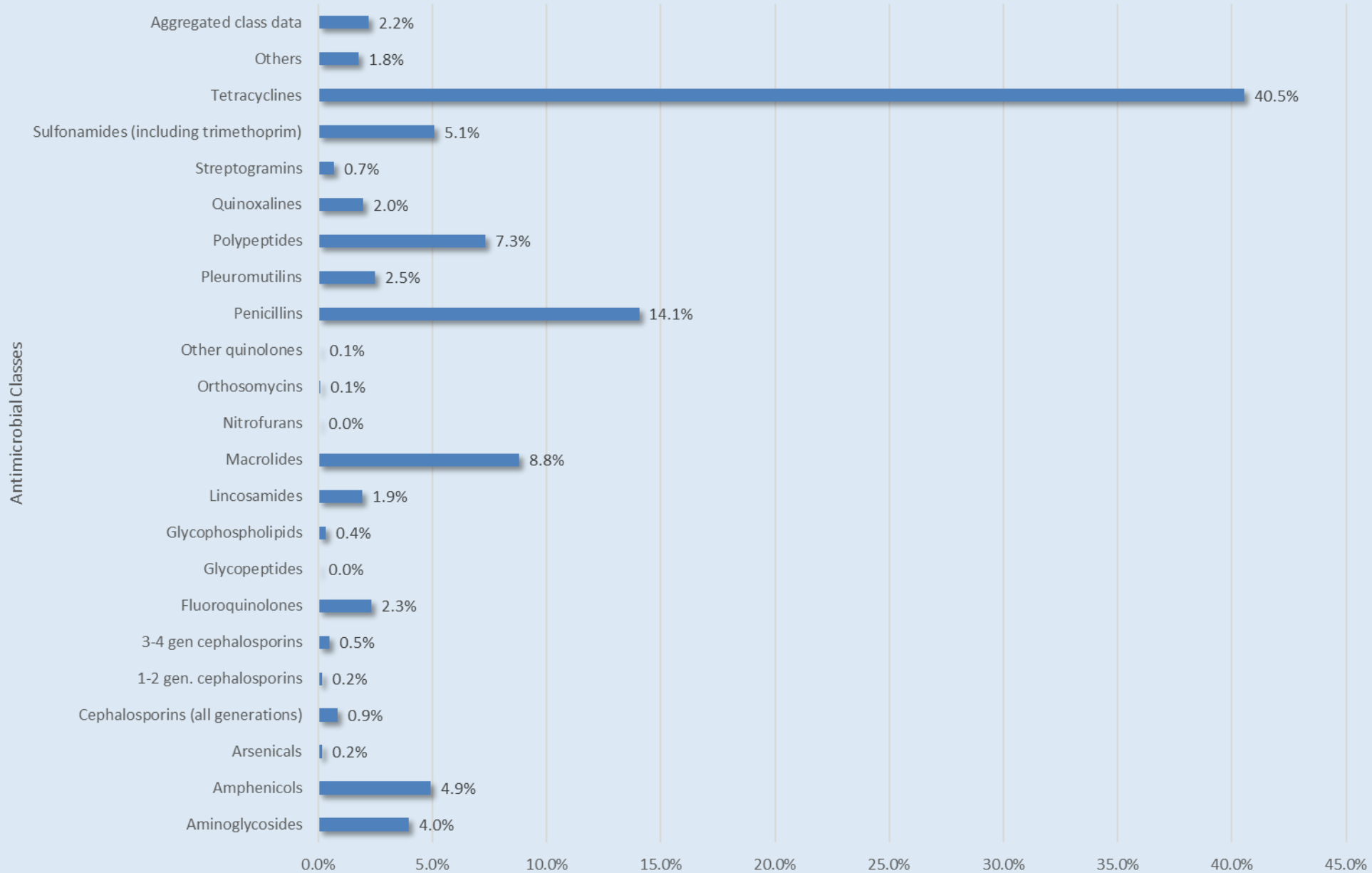


2018 Analysis of Antimicrobial Quantities (109 Countries)

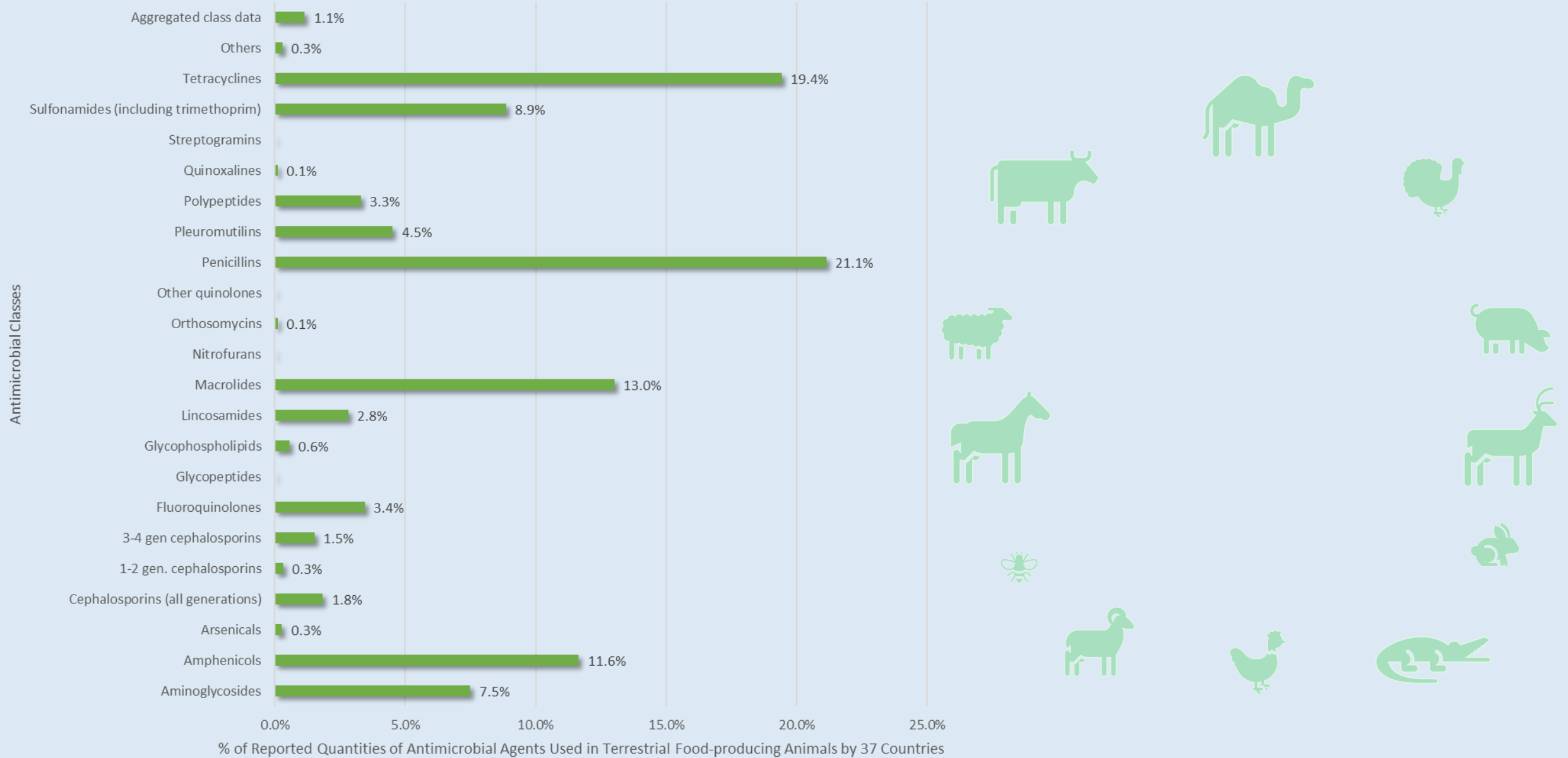


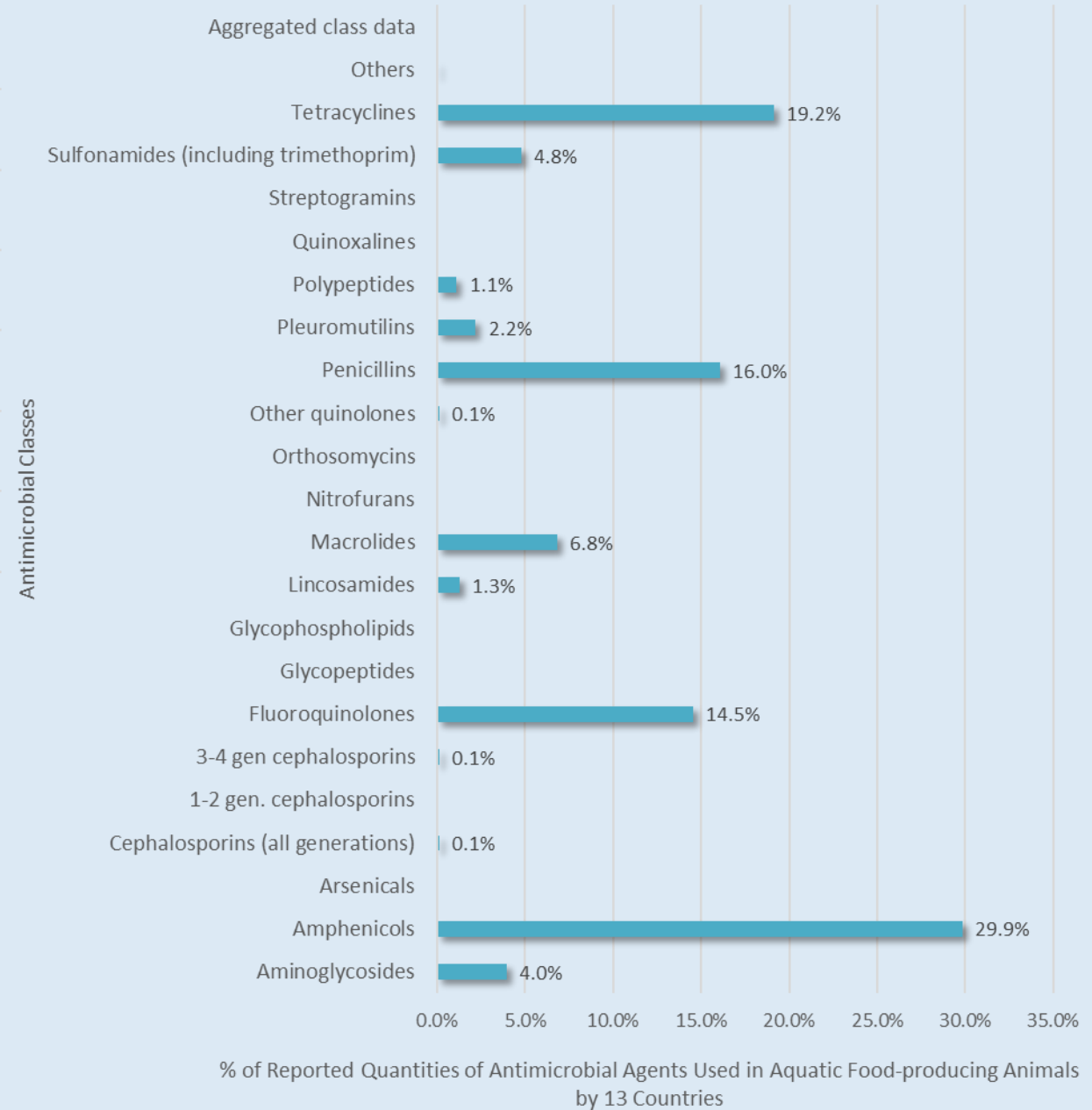
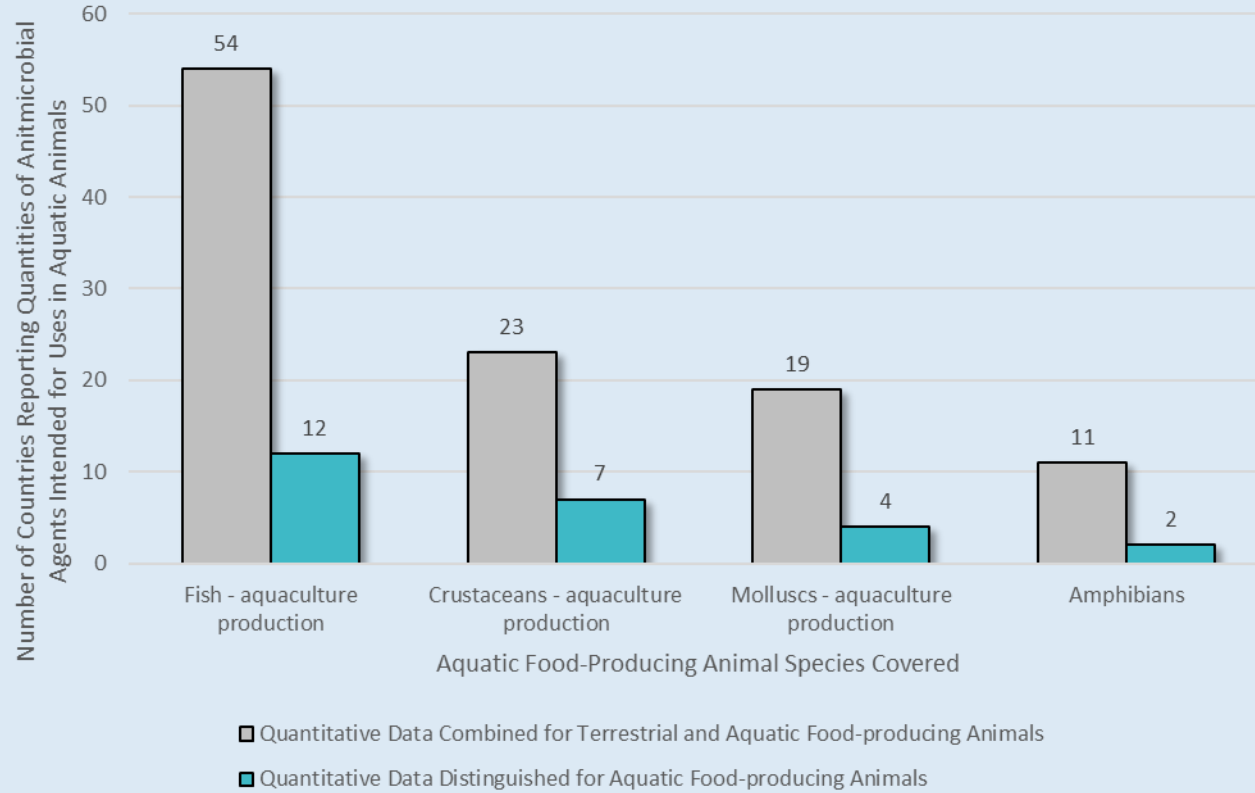


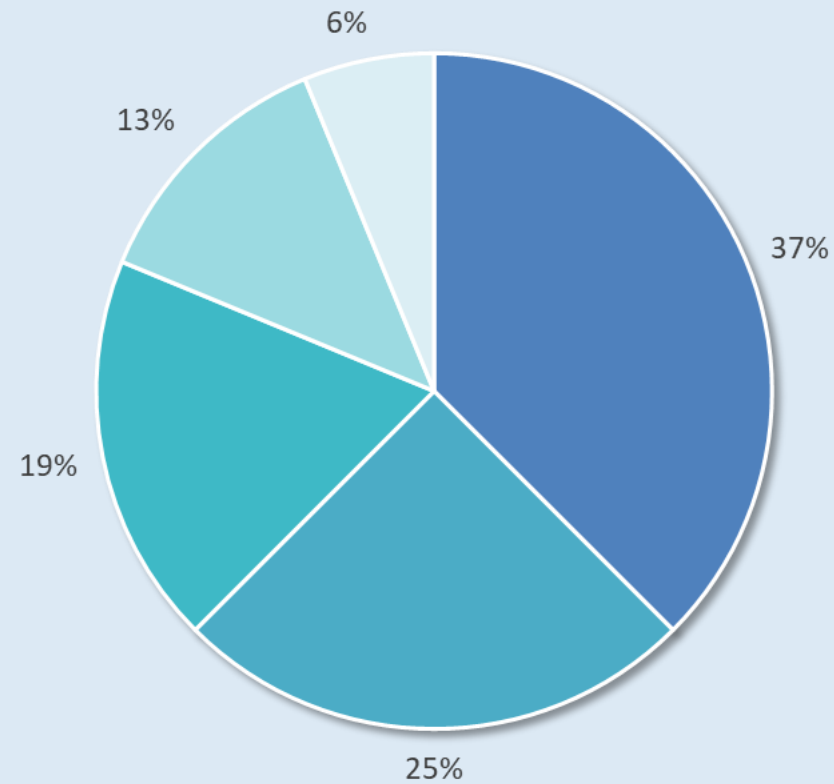
Proportion of antimicrobial classes reported for use in animals by 109 Countries in 2018



% of Reported Quantities of Antimicrobial Agents Used in Animals by 109 countries

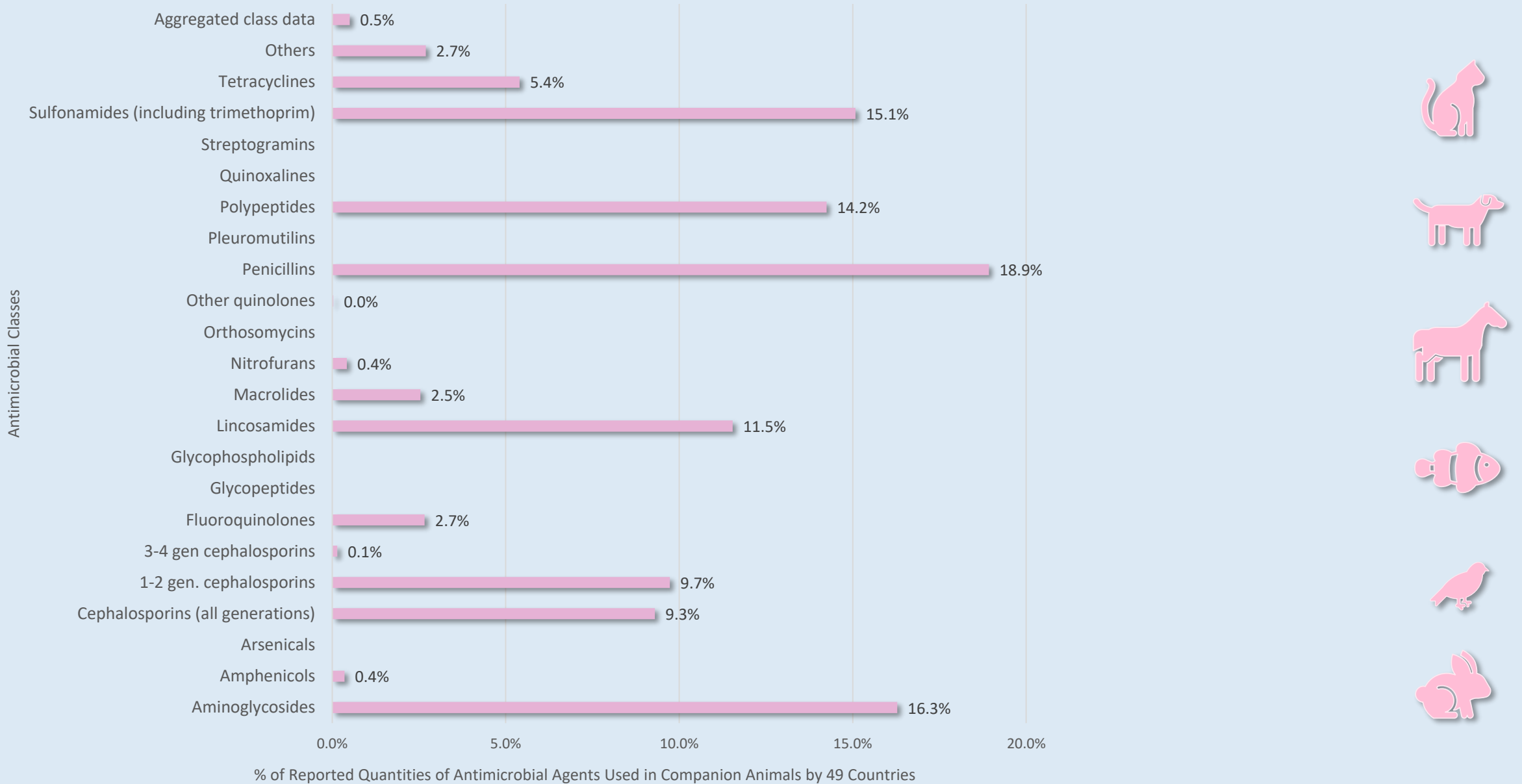


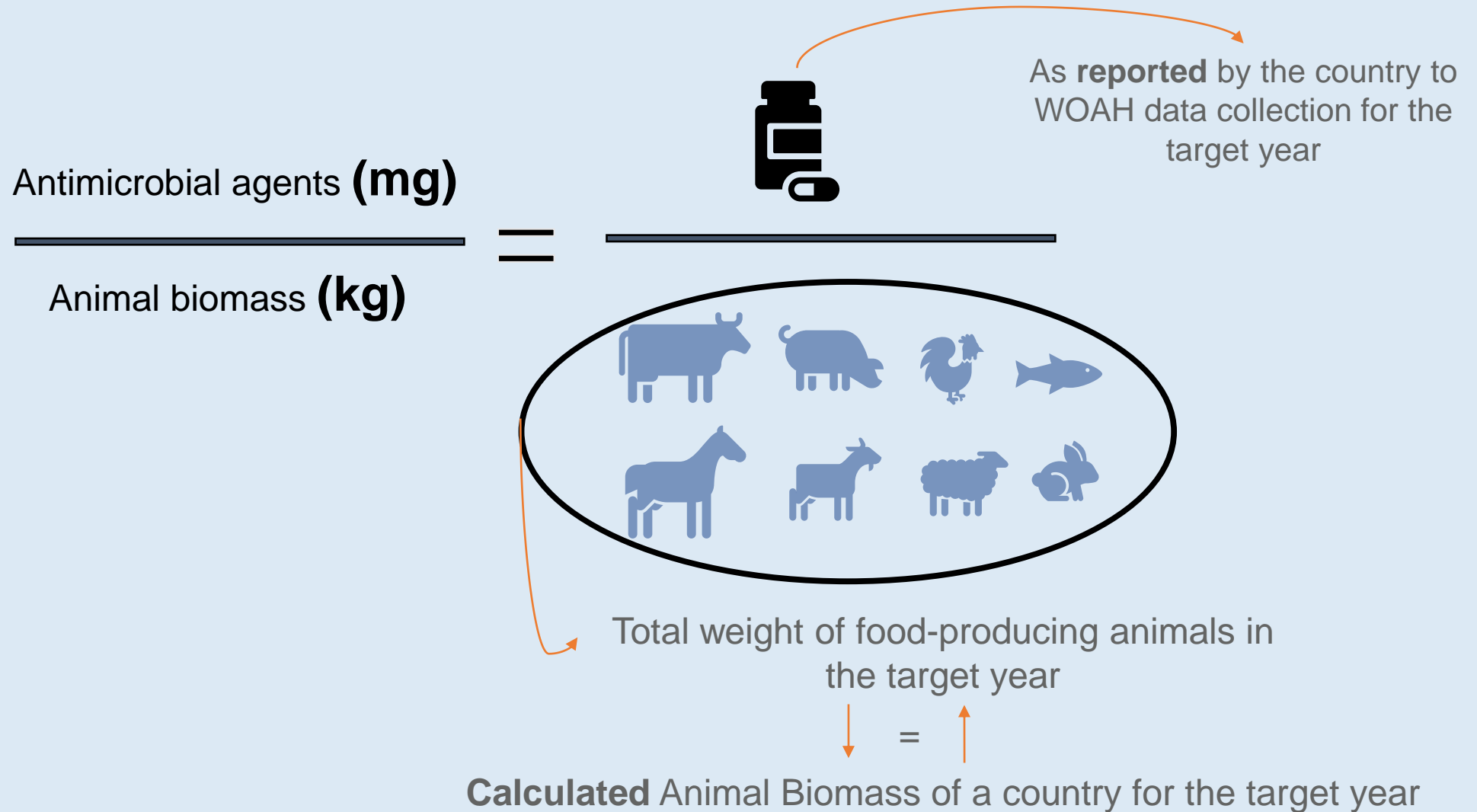


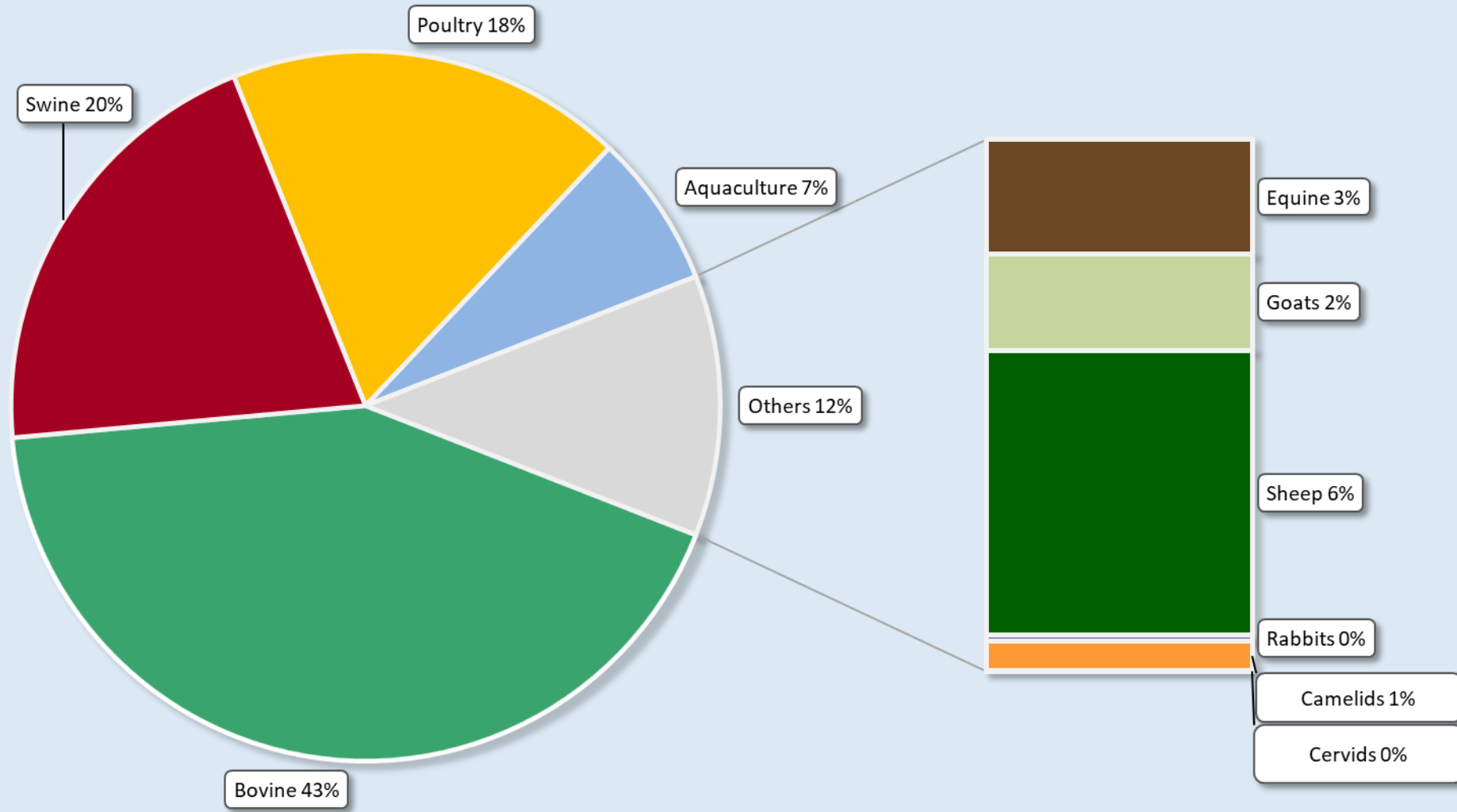


n = 14

- Insignificant aquaculture production or use of antimicrobials
- Lack of coordination/cooperation between national authorities and with private sector
- Absence of authorised antimicrobial products for aquaculture
- Antimicrobials banned for aquaculture
- Antimicrobials are used in aquatic animals non-intended for consumption

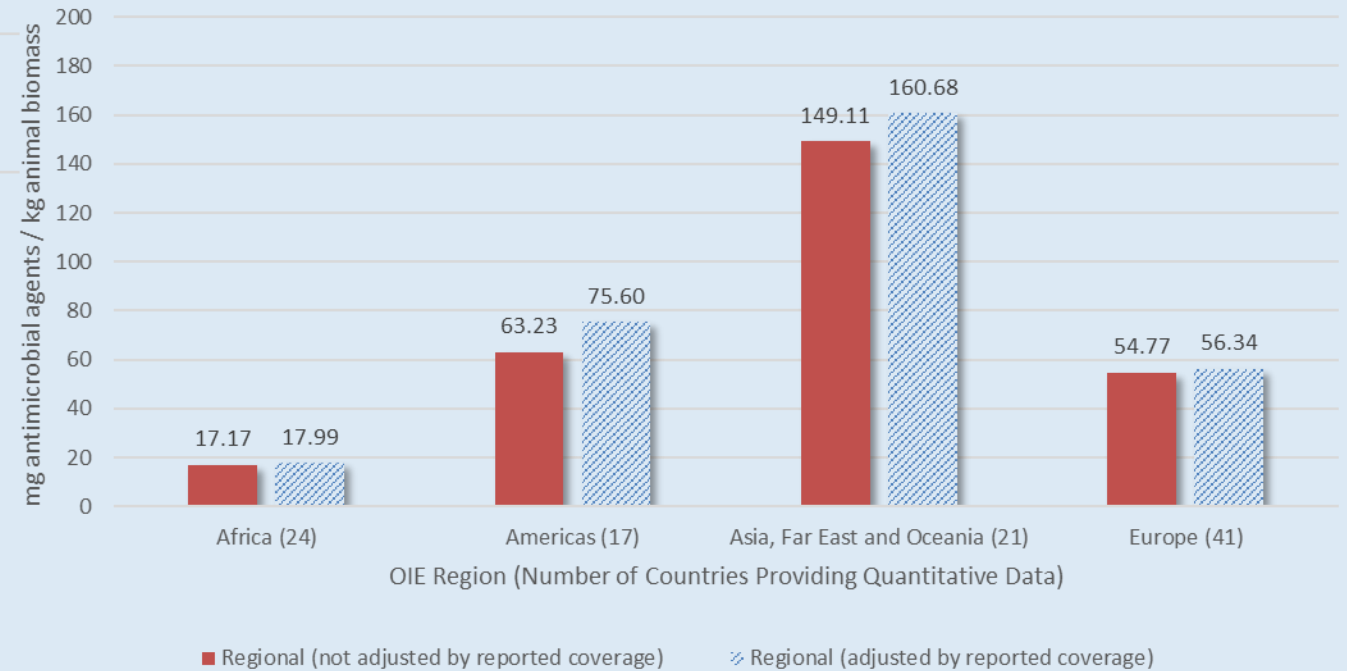
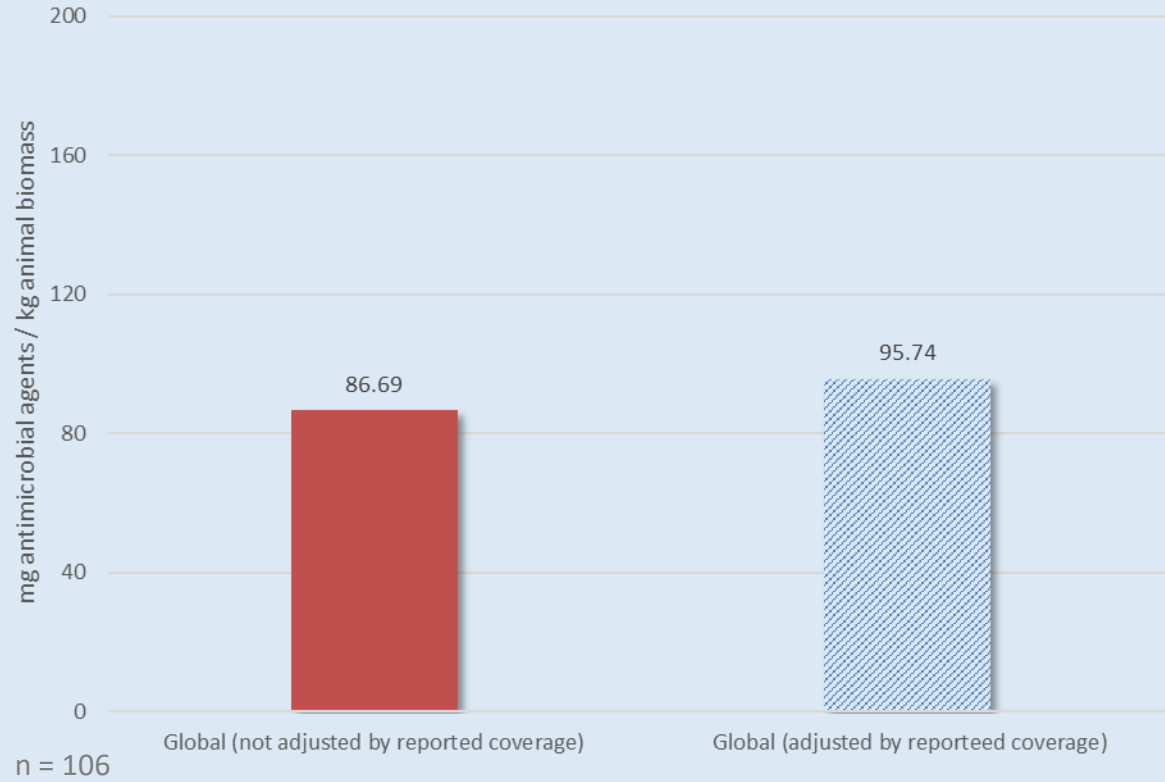








Quantities of Antimicrobial Agents Intended for Use in Animals Based on Data Reported by Countries for 2018, Adjusted by Animal Biomass (mg/kg)



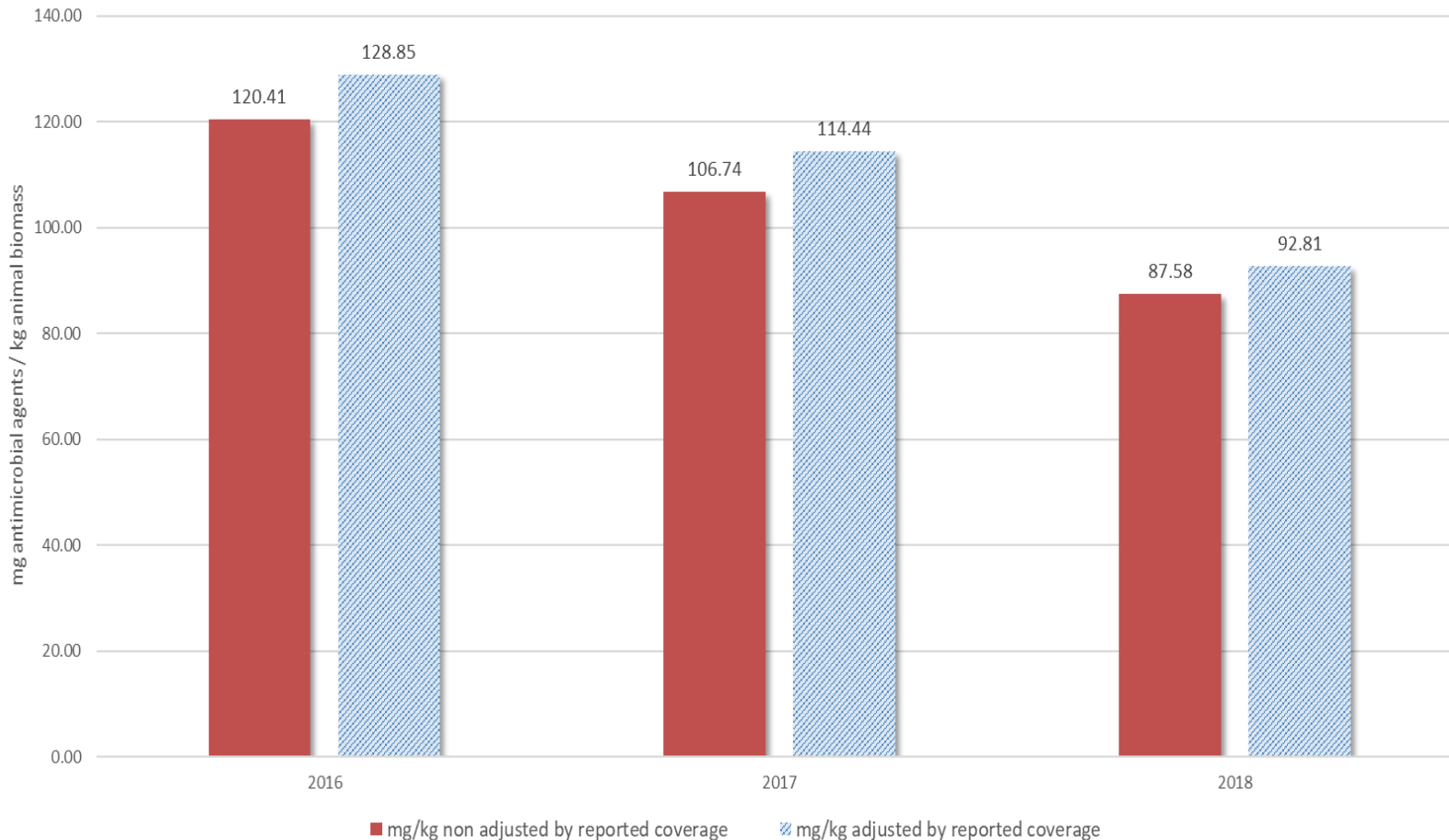


Trends from 2016 to 2018 (72 countries)






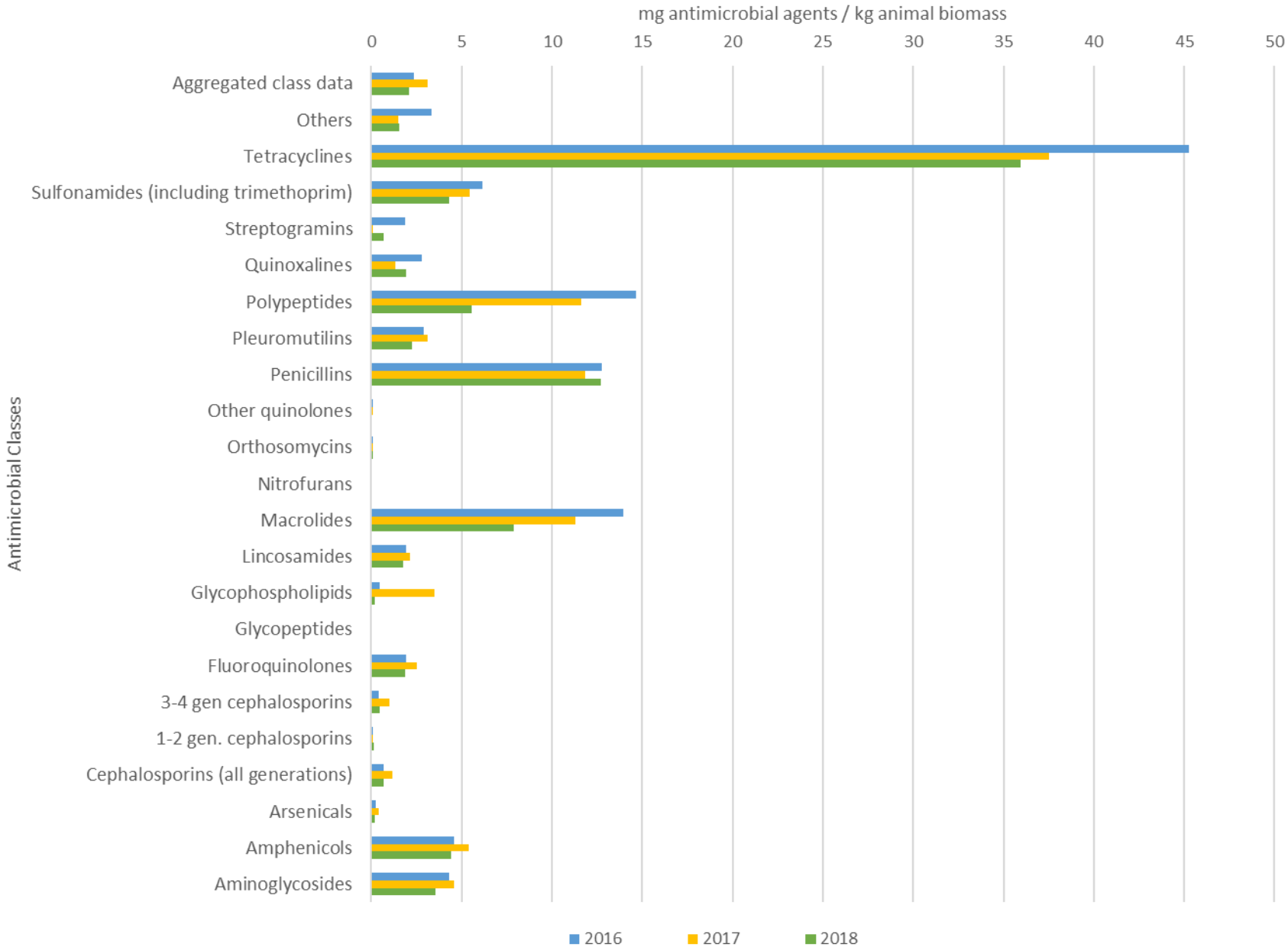
Trends on Time for the Global Quantities of Antimicrobial Agents Intended for Use in Animals Based on Data Reported by 72 Countries from 2016 to 2018, Adjusted by Animal Biomass (mg/kg)



An overall decrease of 27% in the mg/kg. From the 72 Countries, the following situations were observed.

- A decrease in mg/kg in 46 Countries: 31 reporting a decline greater than 10% and 15 ranging between 1% and 10%.
- An increase in mg/kg in 26 Countries: 20 reporting an increase greater than 10% and six ranging between 1% and 10%.

 Trends over Time for the Antimicrobial Classes Reported by 72 Countries from 2016 to 2018, Adjusted by Animal Biomass (mg/kg)*



*For each antimicrobial class, the summed antimicrobial quantities reported (in mg) in all OIE Regions are divided by the total animal biomass (in kg)



ANIMUSE and Future Perspectives

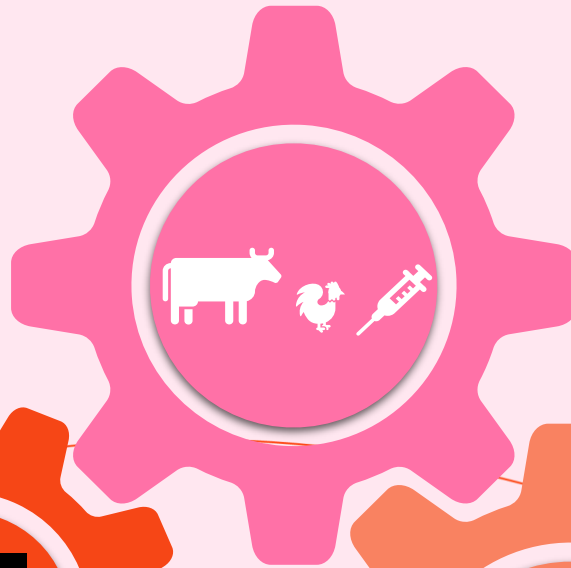


SUMMARY: Future of the Database Collection - ANIMUSE



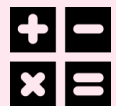
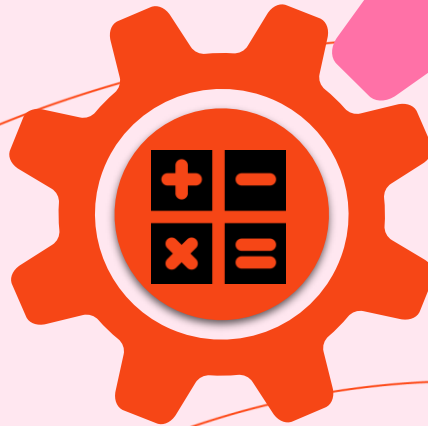
Species Level Reporting

The future OIE Database System (not current) will allow Countries to report at species level



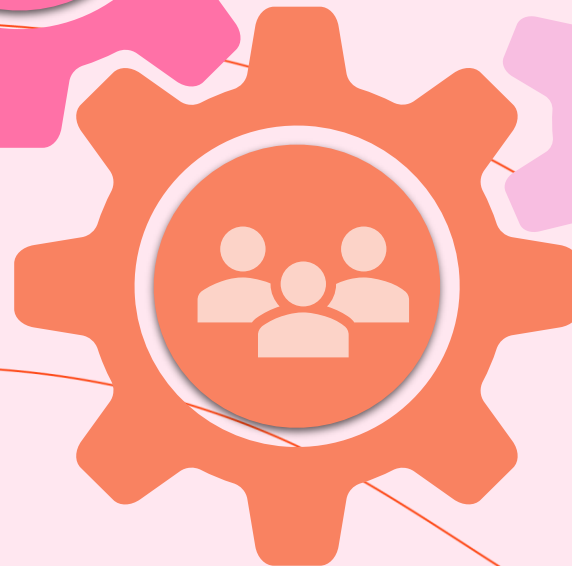
OIE-WAHIS Integration

The integration of OIE-WAHIS will provide an analysis of the antimicrobial quantities (mg) adjusted by animal biomass (kg)



Calculation Module

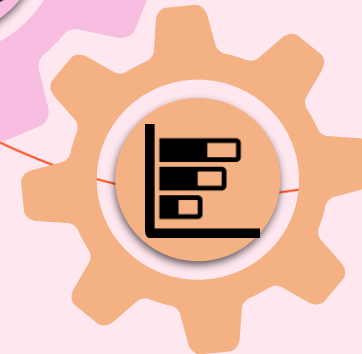
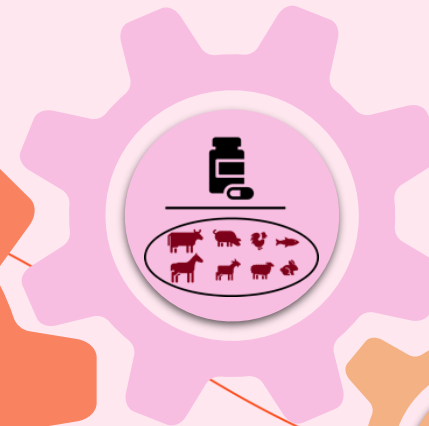
Formulas will be integrated in the System allowing Countries to calculate and report quantities thus improving the accuracy of data



Data Ownership



Countries will have access to their own data which they can analyse and make informed decisions



Business Intelligence Reporting

The system will be integrated with a Business Intelligence tool allowing faster and accurate data analysis and reporting



Animal Antimicrobial Use **ANIMUSE**

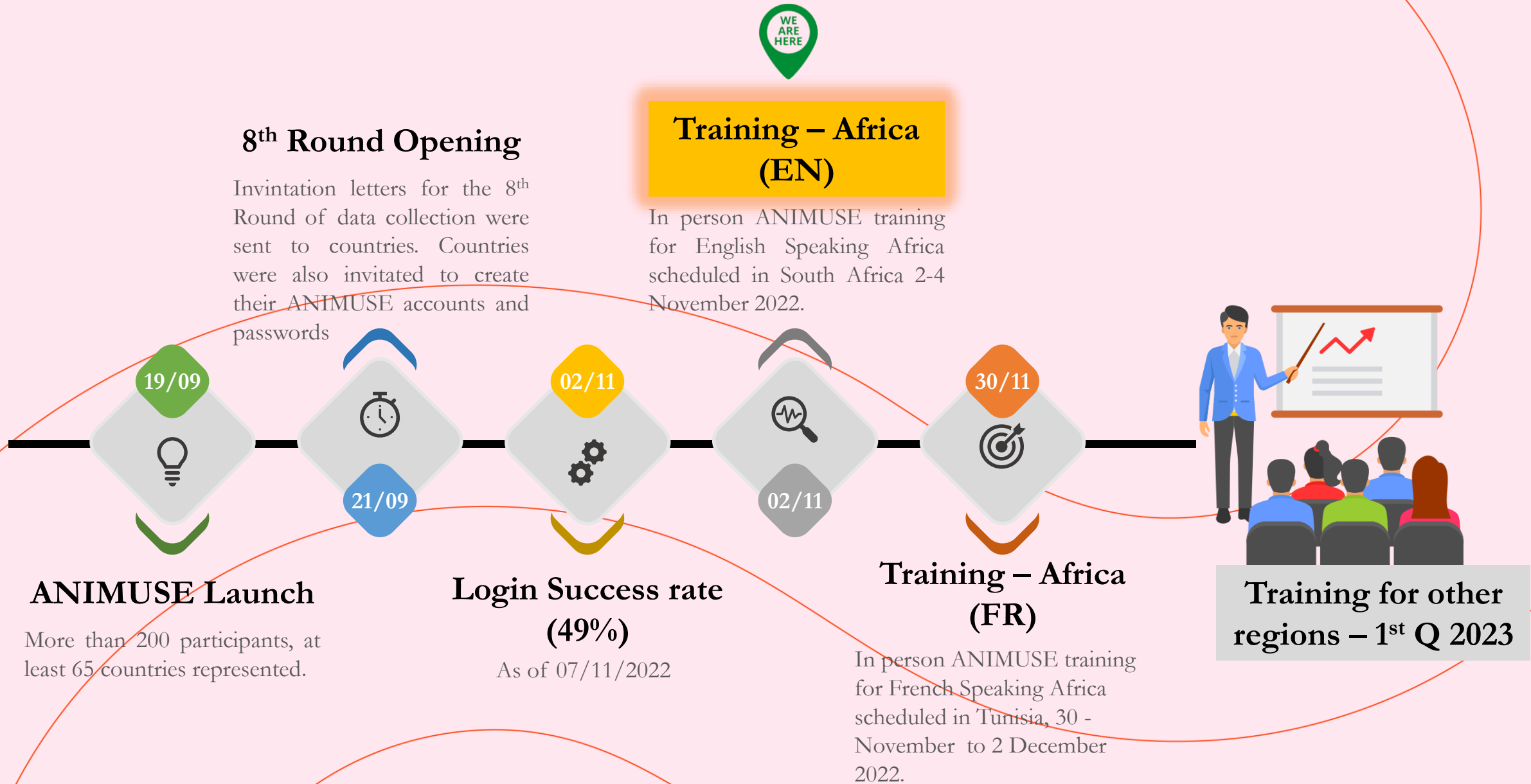


COMMUNICATION



TRAINING MATERIAL







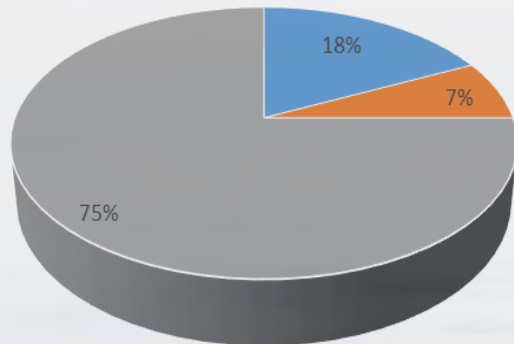
Field Level AMU Data Collection : Background



❖ Recommendation n°4 of the 2nd OIE Global Conference on Antimicrobial Resistance – October 2018, To further develop the OIE data collection on Antimicrobial Agents Intended for Use in Animals, converting the current spreadsheet format to a database system, able to accommodate data submissions by animal species, and its connection to the World Animal Health Information System (WAHIS) and also allowing addition of data from field studies.

- Identifying Countries planning or conducting AMU monitoring at field level
- Make sure WOAH Focal Points for Veterinary Products have access to the results of those fields studies

Involvement of WOAH FPVP



■ Yes ■ NO ■ Unknown

SPECIES CONCERNED BY THE DIFFERENT PROJECTS

■ Cattle ■ Swine ■ Poultry ■ Others ■ Companion animals ■ Fish ■ Aquaculture-other





Thank you



For any question, contact us at antimicrobialuse@woah.org