

# CAP SPECIFIC OBJECTIVES

*...explained*

– Brief No 9



## Health, Food & Antimicrobial Resistance

*This is part of a series of Briefs summarising the facts and addressing the policy relevance around the 9 proposed specific objectives of the future CAP.*

### KEY MESSAGES

- ✓ *Some of the key challenges facing EU agriculture include improving the response to society's demands on food and health, including safe, nutritious and sustainable food, reducing food waste, and improving animal health and welfare.*
- ✓ **Antimicrobial resistance (AMR)** *is a challenge for which the CAP is called to respond and support Community action. A sense of urgency related to AMR warrants increased attention regarding the use of antimicrobials in animal husbandry.*
- ✓ *AMR is a serious public health threat. It is responsible for an increasing number of deaths, both in the EU and globally, a significant economic burden (healthcare costs and productivity losses), and an unknown cost to animal production.*
- ✓ *The safety of the food chain is indirectly affected by the welfare of animals, particularly those farmed for food production, due to the close links between animal welfare, animal health and food-borne diseases.*
- ✓ *The future CAP, in synergy with the new EU regulations on veterinary medicinal products and on medicated feed and with research, can support farmers and the Member States in the fight against AMR.*

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*Disclaimer: The contents of the publication do not necessarily reflect the position or opinion of the European Commission.*

# 1. Facts and evidence about AMR

Since antimicrobials were discovered back in 1928 (the first being penicillin), they have significantly improved human and animal health, helping to fight certain diseases that were previously deadly. However, over time, antimicrobials have become "victim of their own success" having been used in an excessive or inappropriate way to such an extent that they have led to a globally recognized challenge to public health, referred to as Antimicrobial Resistance (AMR).

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## *What lies behind the acronym AMR?*

*Antimicrobial resistance refers to the ability of microorganisms, such as bacteria, fungi, viruses and protozoans, to become increasingly resistant to an antimicrobial to which they were previously susceptible. AMR is a consequence of natural selection and genetic mutation. Such mutation is then passed on conferring resistance.<sup>1</sup>*

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AMR implies a reduced effectiveness of antimicrobials (or even incapacity) in treating human and animal diseases. Without effective action to reverse current trends, we may face a return to the pre-antibiotic era, with simple wounds and infections causing significant harm or even death and routine medical procedures becoming very high risk.

AMR is already a serious public health threat. It is estimated to be responsible for 33,000 deaths per year in the EU alone<sup>2</sup> and 700,000 deaths per year globally.<sup>3</sup> If effective action is not taken, then globally AMR deaths could reach millions and, by 2050, AMR could potentially cause more deaths than cancer currently causes. As concerns the economic burden, in the EU alone, it is estimated that AMR costs EUR 1.5 billion annually in healthcare costs and productivity losses.<sup>4</sup> The cost of AMR in animal production is hardly known.

### *a. Better understanding AMR*

During the preparatory process and the broad public consultation, which led to the presentation of the legal proposals for the Future of CAP, AMR emerged as a challenge which the Future CAP is called to respond to by supporting Community action.<sup>5</sup>

The comprehensive impact assessment of the Future CAP<sup>6</sup> includes the reflections of the workshop on food and related issues. It concluded that a sense of **urgency** related to antimicrobial resistance **warrants increased attention to the use of antimicrobials** in animal husbandry.<sup>7</sup>

In addition, a deeper understanding of AMR development and its transmission is needed, notably the linkages of the 3 reservoirs (human, animal and environment) within and between which AMR can develop and spread. Action is also needed in order to maintain the effectiveness of antibiotics for treating sick animals.

## 2. Challenges of AMR in farmed animals

Important amounts of antimicrobials are used in animal husbandry, especially in intensive farming. This entails the risk of the emergence of AMR, in particular when antimicrobials are used for preventive treatment to groups of animals via feed and drinking water. Although evidence of public health emergencies linked to antibiotics use in farmed animals is much less important than emergencies due to such use in human health care, limiting the use of antimicrobial agents in animal production should be considered as one step in the multi-faceted approach to lowering the AMR development.

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### ***What are the trends for antibiotic use in animal husbandry?***

*The overall sales of veterinary antimicrobials across 25 European countries (including non-EU countries) have decreased by more than 20% between 2011 and 2016. This downward trend confirms that European Union guidance and national campaigns promoting prudent use of antibiotics in animals to fight antimicrobial resistance are having a positive effect.*

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According to the 2018 report of the European Surveillance of Veterinary Antimicrobial Consumption project (ESVAC) published by the European Medicines Agency, the overall sales of veterinary antimicrobials across 25 European countries (including non-EU countries) have decreased by more than 20% between 2011 and 2016.<sup>8</sup>

Table 1 (next page) reflects this downward trend seen over the last few years and confirms that European Union guidance and national campaigns promoting prudent use of antibiotics in animals to fight antimicrobial resistance are having a positive effect. From 2011 to 2016, a significant decrease in sales per population correction unit (PCU) was registered in some of the Member States with the highest selling total volumes (Italy, Germany and France), but there are also 'outliers' (see table).

The large differences in sales per PCU among Member States (ranging from 12 mg/PCU to 453 mg/PCU) suggest that lower levels could be achieved, and there is no evidence to date of significant animal health problems arising from the decrease in antimicrobials use in the related countries.

A further reduction of the use of antibiotics in farmed animals would require cost/benefit assessments as well as investments to improve the husbandry system (e.g. improvements in biosecurity, reducing the density of animals in the holdings, changing the management through appropriate training, or stewardship of antimicrobial use). Improvement and development of vaccines and alternatives to antibiotics would also offer solutions to prevent diseases or cure them with minimal or no use of antibiotics.

**Table 1 - Sales of veterinary antimicrobial agents**

	in mg/PCU					
	2011	2012	2013	2014	2015	2016
AT	54	55	57	56	51	46
BE	175	161	157	158	150	140
BG	104	99	116	83	122	155
HR				147	102	93
CY	408	397	426	392	434	453
CZ	83	80	82	80	68	61
DK	43	44	45	44	42	41
EE	66	56	62	68	65	64
FI	24	24	24	22	20	19
FR	117	103	95	107	70	72
DE	211	205	179	149	98	89
EL					57	64
HU	192	246	230	193	211	187
IE	49	58	57	48	51	52
IT	370	341	302	360	322	295
LV	35	41	37	37	38	30
LT	42	39	37	36	35	38
LU		44	54	41	35	36
MT						
NL	114	75	70	68	64	53
PL	120	132	151	141	139	129
PT	161	157	187	202	134	208
RO				39	101	85
SK	44	43	63	66	54	50
SI	43	37	22	33	26	30
ES	249	242	317	419	402	363
SE	14	14	13	12	12	12
UK	51	66	62	62	57	45

*Note: Sales of active ingredient, of veterinary antimicrobial agents marketed mainly for food-producing animals, in mg/PCU (population correction unit).*

*Source: DG AGRI elaboration based on ESVAC report.*

### 3. Policy questions linked to AMR

#### a. The response of the EU

The EU was quick to recognize the importance of tackling AMR, as the 2001 Community strategy against AMR shows. This policy was reinforced with the 2011 Commission action plan.<sup>9</sup>

A new and comprehensive EU action plan, 'One Health', on AMR was adopted on 29 June 2017, building on the previous plan, its evaluation, the feedback received on a European Commission roadmap on AMR, and an open public consultation.<sup>10</sup>

This new One Health action plan against AMR will support the EU and its Member States in delivering innovative, effective and sustainable responses to AMR. Its **overarching goal is to preserve the possibility of effective treatment of infections in humans and animals**. It provides a framework for continued, more extensive action to reduce the emergence and spread of AMR and to increase the development and availability of new effective antimicrobials inside and outside the EU.

The **key objectives** of the One Health action plan are built on **three main pillars**:

- Making the EU a **best practice region**;
- Boosting **research**, development and **innovation**; and
- Shaping the **global agenda**.

The new plan contains more than 75 concrete actions with EU added value that the Commission will develop and strengthen as appropriate in the coming years for a more integrated, comprehensive and effective approach to combating AMR. The EU is not alone in recognizing the threat of AMR and in addressing this issue at the highest political level. Many countries outside of the EU, as well as international organizations, are tackling this issue.<sup>11</sup> International cooperation is a key element of the AMR action plan. All these actions are important in themselves, but they are also interdependent and need to be implemented in parallel in order to achieve the best outcome.

*b. Use of veterinary antimicrobials in EU animal husbandry*

Already in 2006, the EU banned the use of antibiotics as feed additives for growth promotion. Thus, antibiotics are currently only allowed for disease prevention or for disease treatment subject to veterinary prescription. Registers on the use of pharmaceutical agents on farms are obligatory under the Regulation on General Hygiene (Regulation (EC) No 853/2004) and are integral to cross-compliance (a set of rules all farmers who receive area and animal-based CAP subsidies need to respect and comply with). Antimicrobials can only be used by the farmer on prescription by a veterinarian. Preferably, the farmer and the veterinarian should create a farm specific health plan, aiming at disease prevention. In some Member States, a central register exists for the recording of prescriptions by veterinarians.

The **new EU regulations** on veterinary medicinal products and on medicated feed were adopted end 2018. They lay down a wide range of concrete measures to fight antimicrobial resistance and to promote the prudent and responsible use of antimicrobials:

- The Regulation on **medicated feed** introduces *inter alia* a ban of preventive use of antimicrobials via medicated feed, restrictions for the prescription of medicated feed with antimicrobials, compulsory measures to avoid cross-contamination and the setting of science based maximum limits for antimicrobials in non-target feed.
- The proposed regulation on **veterinary medicinal products (VMP)** introduces a ban on the preventive use of antibiotics in groups of animals, a reinforced ban on the use of antimicrobials for promoting growth and increasing yield, restrictions on metaphylactic use of antimicrobials, the possibility of restricting the use of certain antimicrobials in animals that are reserved to treat human infections, compulsory data collection on sales and use of antimicrobials. It also aims to stimulate the development of new antimicrobial VMPs.

The new rules will apply three years after they enter into force (early 2019). The EU animal farming sector will have to take the necessary steps to implement the rules and measures relating to this new legislative framework.

*c. A growing attention to the use of antimicrobials in agriculture*

For the preparation of the proposals for modernising and simplifying the Common Agricultural Policy post 2020, a specific workshop with external experts/stakeholders and staff of various Directorates General of the Commission took place in May 2017 to discuss and gather evidence on food-related issues. On this occasion, it emerged that the current CAP is already relatively well aligned with food safety standards, but the sense of urgency related to the anti-microbial resistance warrants increased attention to the use of antimicrobials in agriculture.<sup>12</sup>

At the workshop, it was suggested that best practices should be exchanged and applied. The Farm Advisory Service could play an important role in synergy with national reduction plans. Moreover, farmers should be encouraged and incentivised to develop farm health plans with their veterinarian.

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***Animal welfare and reduction of antibiotic use in animal husbandry***

*The safety of the food chain is indirectly affected by the welfare of animals, due to the close links between animal welfare, animal health and food-borne diseases. Stress factors and poor welfare can lead to increased susceptibility to disease among animals. This can pose risks to consumers, for example through common food-borne infections like Salmonella, Campylobacter and E.Coli.<sup>13</sup> Promoting good animal husbandry and feeding regimes, which support animal health and welfare, can contribute to a reduction in antimicrobial consumption.*

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Systems, developed to measure and benchmark usage both at the farm-level and the prescribing veterinary practitioner, have critically contributed to those Member States who have made substantial progress at reducing antimicrobial usage in farmed animals. There have been a number of other changes, including a shift away from the use of critically important antimicrobials and antimicrobials for preventive use, and the requirement of a single prescribing veterinarian per farm.

In order to measure the further progress towards the common CAP objective to "improve the response of EU agriculture to societal demands on food and health, including safe, nutritious and sustainable food, food waste, as well as animal welfare" and, more in particular, on the AMR issue, the legal proposals for the future CAP contain a set of indicators to be monitored, including the sales/use of antimicrobials in food producing animals. Furthermore, as a mandatory topic for the Farm Advisory Services, it was added that Member States shall provide farmers with training of "farm practises preventing the development of antimicrobial resistance".

*d. Examples of Research and Innovation projects addressing AMR*

The Focus Group on how to reduce the use of antibiotics in pig farming was launched by the European Commission in 2013 as part of the activities under the European Innovation Partnership for Agricultural Productivity and Sustainability (EIP-AGRI)<sup>14</sup>.

The group identified three main interrelated areas for the reduction of antibiotic use:

- Better animal health and welfare to reduce the need for antibiotic use, through improvement of biosecurity, management, husbandry, facilities, and training of personnel, veterinarians and advisors.
- Specific alternatives to antibiotics including vaccination, feeding approaches and breeding.
- Changing attitudes, habits and human behaviour (farmers, agri-advisors and veterinarians), and improving the dissemination of information.

Innovative technological solutions and research initiatives can be successful if they reach out to the field and include experts from different disciplines and backgrounds. It is key to motivate stakeholders such as farmers, advisors and veterinarians to adopt better biosecurity, management and other practices that help reduce the need for antibiotic treatments.

One way to do this is by showing that applying new measures can be economically beneficial. The provision of information and improving the education of farmers and veterinarians can help to adjust attitudes and create beneficial change in the long-run. Both the current and the future CAP, with its various types of interventions, are relevant tools in promoting actions aimed at reducing antibiotic use in livestock farming.

The project PROHEALTH<sup>15</sup>, funded by the European Union, on animal health and welfare addresses the challenge of pig and poultry production diseases. Among other recommendations, PROHEALTH research suggests that stakeholders should be encouraged to adopt on-farm sensor technologies and data analytics to facilitate earlier response to diseases, thus helping to contain them before they become a problem. An example of an informative tool available for farmers is Biocheck, the risk-based scoring system to evaluate the quality of on-farm biosecurity<sup>16</sup>.



## Endnotes

<sup>1</sup> Antimicrobials are active substances of synthetic or natural origin which kill or inhibit the growth of microorganisms. Used in every-day medicine (e.g. urinary tract infections, surgery and care of premature babies), they are vital to preventing and treating infections in humans and animals.

[https://ec.europa.eu/health/amr/sites/amr/files/amr\\_action\\_plan\\_2017\\_en.pdf](https://ec.europa.eu/health/amr/sites/amr/files/amr_action_plan_2017_en.pdf)

<sup>2</sup> <https://ecdc.europa.eu/en/news-events/33000-people-die-every-year-due-infections-antibiotic-resistant-bacteria>

<sup>3</sup> [https://amr-review.org/sites/default/files/160525\\_Final%20paper\\_with%20cover.pdf](https://amr-review.org/sites/default/files/160525_Final%20paper_with%20cover.pdf)

<sup>4</sup> [https://ecdc.europa.eu/sites/portal/files/media/en/publications/Publications/0909\\_TER\\_The\\_Bacterial\\_Challenge\\_Time\\_to\\_React.pdf](https://ecdc.europa.eu/sites/portal/files/media/en/publications/Publications/0909_TER_The_Bacterial_Challenge_Time_to_React.pdf)

[https://read.oecd-ilibrary.org/social-issues-migration-health/stemming-the-superbug-tide\\_9789264307599-en#page5](https://read.oecd-ilibrary.org/social-issues-migration-health/stemming-the-superbug-tide_9789264307599-en#page5)

<sup>5</sup> <https://ec.europa.eu/agriculture/sites/agriculture/files/consultations/cap-modernising/summary-public-consul.pdf>

<sup>6</sup> <http://ec.europa.eu/transparency/regdoc/rep/10102/2018/EN/SWD-2018-301-F1-EN-MAIN-PART-1.PDF>

<sup>7</sup> [https://ec.europa.eu/agriculture/sites/agriculture/files/events/2017/cap-have-your-say/food-workshop/summ\\_en.pdf](https://ec.europa.eu/agriculture/sites/agriculture/files/events/2017/cap-have-your-say/food-workshop/summ_en.pdf)

<sup>8</sup> [https://www.ema.europa.eu/documents/report/sales-veterinary-antimicrobial-agents-30-european-countries-2016-trends-2010-2016-eighth-esvac\\_en.pdf](https://www.ema.europa.eu/documents/report/sales-veterinary-antimicrobial-agents-30-european-countries-2016-trends-2010-2016-eighth-esvac_en.pdf)

<sup>9</sup> [http://ec.europa.eu/health/amr/sites/amr/files/amr\\_factsheet\\_en.pdf](http://ec.europa.eu/health/amr/sites/amr/files/amr_factsheet_en.pdf)

<sup>10</sup> [https://ec.europa.eu/health/amr/sites/amr/files/amr\\_action\\_plan\\_2017\\_en.pdf](https://ec.europa.eu/health/amr/sites/amr/files/amr_action_plan_2017_en.pdf)

<sup>11</sup> FAO <http://www.fao.org/antimicrobial-resistance/en/>

OIE <http://www.oie.int/en/for-the-media/amr/international-collaboration/>

WHO <https://www.who.int/antimicrobial-resistance/en/>

OECD <http://www.oecd.org/els/health-systems/antimicrobial-resistance.htm>

<https://ec.europa.eu/agriculture/sites/agriculture/files/events/2017/cap-have-your-say/170706-matthijs.pdf>

<sup>13</sup> <https://www.efsa.europa.eu/en/topics/topic/animal-welfare>

<sup>14</sup> [https://ec.europa.eu/eip/agriculture/sites/agri-eip/files/eip-agri\\_fg3\\_pig\\_antibiotics\\_final\\_report\\_2014\\_en\\_0.pdf](https://ec.europa.eu/eip/agriculture/sites/agri-eip/files/eip-agri_fg3_pig_antibiotics_final_report_2014_en_0.pdf)

<sup>15</sup> [www.fp7-prohealth.eu](http://www.fp7-prohealth.eu)

<sup>16</sup> <http://www.biocheck.ugent.be/index.php>