



BANGKOK DECLARATION ON ANTIMICROBIAL RESISTANCE FOOD SYSTEMS AND FARMING



FEBRUARY 2019

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Bangkok Declaration on Antimicrobial Resistance, Food Systems and Farming

Introduction:

In most countries, antibiotics are greatly overused and misused in livestock farming, overwhelmingly for growth promotion or for routine disease prevention and control. The increasing industrialization of livestock farming, poor husbandry standards with low levels of animal health and welfare, and the drive to increase productivity and lower food prices are all reasons for the global increase in farm antibiotic use. It has recently been estimated that 73% of all antibiotics are now used in livestock.

There is far greater potential for large and rapid reductions in antibiotic use in farming than in human medicine. Even in Europe, where controls on farm antibiotic use are often tighter than elsewhere, some countries use up to 100 times more antibiotics per unit of livestock than other countries, whereas the differences in human medicine are only three or four-fold. Furthermore, in many low- and middle-income countries (LMICs), farm antibiotic use is very poorly regulated.

There is now an urgent need for strong action in all parts of the world to contain the emergence and spread of antimicrobial resistance (AMR) from animal sources. Governments must take firm regulatory action to address antibiotic misuse and commit adequate resources to support a shift to more sustainable farming practices. The European Union will be banning preventative mass medication on January 28, 2022, and the WHO is calling for similar action around the world, but the US, industry groups and organizations like FAO and OIE do not support this change.

Governments must mobilize technical and financial support for National Action Plan and program implementation, monitor country progress and ensure sustained political commitment to addressing AMR. To address the One Health challenge of antimicrobial resistance, governments, funders and industry must commit to effective innovation of both new technologies, like vaccines and diagnostics, and of sustainable practices for agriculture. Civil society has a key role to play to turn the rising tide of drug-resistant infections by catalyzing change, mobilizing support and resources for implementation, and ensuring accountability of our food system.

While the AMR problem is global, the key contributing factors and preparedness to contain the AMR crisis tend to vary with the local context in different country settings. For example, aiming to reduce meat consumption may not be a useful proposition for a country with low per capita intake of meat and plans to address undernutrition and malnutrition through animal protein. Whereas industrialized country markets have registered success in curbing antimicrobial use in food production through procurement and the labeling of food, the significant role and share of the market not within the reach of the informal economy and wet markets may require different strategies. Therefore, while acknowledging that food-animal production practices in LMICs are influenced by global trends, all solutions and measures proposed must take LMIC context and concerns into account. For instance, all interventions suggested must consider the costs, both real and perceived, for farmers during the transition to production of safer food.

In December 2018, nearly 40 civil society representatives convened from around the world for a three-day conference, “Globalizing Food Campaigns: Sharing Strategies to Address Antimicrobial Resistance” in Bangkok, Thailand. These deliberations build upon the work of the Antibiotic Resistance Coalition (ARC), which brought together in 2014 a One Health alliance of civil society groups with a shared set of principles in the [Antibiotic Resistance Declaration](#). Based on the discussions held during the Bangkok meeting, civil society groups agreed on the following Declaration to guide global action to address AMR through agriculture and food systems globally.

I. Addressing antibiotic misuse:

ARC declaration (2014):

- *The preservation of effective antibiotics for human health should take priority over their use for commercial gain in food production. A disproportionately high amount of antibiotics is used in animals, particularly in the industrial production of food animals. Antibiotics should only be used for treating animals when indicated by a genuine therapeutic need and based on antibiotic therapeutic guidelines.*
- *Antibiotics considered critically important for humans must not be used for animals, except in specific circumstances in order to save life or prevent serious suffering.*
- *Regulations should be instituted and enforced to ensure antibiotics are marked with appropriate warnings and clear distinctions between human and animal use, so as to help control and monitor antibiotic consumption.*
- *Governments should initiate regulatory measures to control the environmental pollution that allows the spread of antibiotic resistant genes across soil, water and air. Environmental movements have an important role in supporting and mobilizing actions towards limiting such pollution.*

1. **Antibiotics are routinely overused and misused in livestock farming all around the world. The preservation of effective antibiotics for human health should take priority over their use for commercial gain in agriculture.**
 - 1.1. A large majority of farm antibiotic use is for growth promotion or for preventative group treatments (prophylaxis). In addition, highest-priority critically important antibiotics (HPCIA) for human medicine (fluoroquinolones and 3rd and 4th generation cephalosporins), and the last-resort antibiotic colistin are frequently misused in animals, even when other treatments are available.
 - 1.2. In many countries, veterinarians who prescribe antibiotics are also permitted to sell the medicines to the farmers, creating an incentive to overprescribe.
 - 1.3. In some LMICs, animal feed and veterinary products containing antibiotics are not properly labelled, and farmers may be unintentionally giving antibiotics to their animals.
 - 1.4. Antibiotics remain important for the treatment of diseased animals, but should not be used to support poor animal husbandry and intensive and unhygienic conditions for raising livestock.
2. Governments must urgently take **regulatory action** to end routine farm antibiotic use.

- 2.1. Governments must enforce bans on use for growth promotion and for purely preventative group treatments. Metaphylactic group treatments, where all of the animals in a group are treated even though only some of them have been diagnosed as infected, should be limited to exceptional cases where there is a risk of disease spread, and alternatives are not available. Use of HPClAs should be limited to the treatment of individual sick animals where sensitivity testing shows alternative treatments are unlikely to work. And no use of the last-resort antibiotic colistin should be permitted in livestock.
- 2.2. All animal feeds and veterinary products containing antibiotics should be **labelled** as such.
- 2.3. The 2017 **WHO guidelines** on the use of medically important antibiotics in food-producing animals call for a ban on the use of antibiotics important for human medicine for growth promotion and disease prevention. In 2018, the European Union also adopted legislation to end the overuse of antibiotics in farming by banning purely preventative mass medication of groups of animals from 2022 onwards. Such steps must be coupled with efforts to find, develop and enable the use of alternatives to antimicrobials in agriculture, particularly in resource-limited settings.
- 2.4. Feeds and veterinary products no longer meeting the respective countries' policies on antimicrobial use must be recalled from the market.
- 2.5. Governments must **restrict pharmaceutical companies' rights to market** and advertise products for use in food production, banning the promotion of antimicrobials directly to farmers and food animal producers, especially in LMICs.
- 2.6. **Veterinarians** permitted to prescribe antibiotics should not be permitted to profit from selling the medicines.
- 2.7. In some settings, efforts to **increase veterinary and implementation capacity including laboratory support** should be targeted along with enforcement of regulations.
- 2.8. Regulation is not sufficient in all settings due to a lack of veterinarians, testing laboratories and implementation capacity, but it can play an important role in all countries and serve as a baseline for further action.

II. Sustainable agriculture

ARC declaration (2014):

- *Antibiotic use for mass disease prevention must not substitute for good animal husbandry and welfare. Farm practices such as overcrowding, unhygienic conditions, inappropriate diets, and early weaning requiring routine antibiotic administration, must be prohibited.*
- *To help secure effective antibiotics for the future, the role of veterinarians should be delineated, to guide infection prevention and discourage non-therapeutic use of antibiotics.*
- *The Codex Alimentarius, the joint WHO and FAO international food standards, should develop new sets of standards for antibiotic use in food animals which take into account not only residues in food, but also antibiotic resistance.*
- *FAO and OIE should prioritize efforts to ensure radical reductions of antibiotic use in food production and processing, and not shy away from the far-reaching implications this may have on the industrial agriculture model of food production.*

1. **Antibiotic misuse is linked to poor farming systems**, and the link between intensive farming and high antibiotic use needs to be emphasized.
 - 1.1. The stress associated with intensive, indoor, large-scale production can lead to an increased risk of livestock contracting and transmitting disease. High pathogenic loads and rapid transmission of disease can lead to routine reliance on antibiotic group treatments.
 - 1.2. Husbandry practices aimed solely at increasing productivity can harm animal health and welfare and result in higher levels of antibiotic use. For example, very early weaning of piglets can result in frequent diarrhoea and high levels of antibiotic treatment or treatment with zinc oxide, which also selects for resistance to medically important antibiotics.
 - 1.3. Highly productive breeds may have poor disease resistance and require higher levels of antibiotic use. Very fast-growing broilers are more prone to disease than slower-growing breeds and generally require more antibiotic treatments. Highly productive sows can be unable to provide sufficient milk to their high number of piglets. Dairy cows have been selected for very high levels of milk production, resulting in more mastitis and feet problems requiring antibiotic treatment.
2. **A transition to more sustainable farming systems is required.**
 - 2.1. Antibiotic use for mass prophylaxis (disease prevention) must not substitute for good animal husbandry and welfare. In some intensive farming systems, significant cuts in antibiotic use can be achieved without significantly altering husbandry, through reliance on alternatives like coccidiostats. However, much larger and more sustainable reductions are achievable in less intensive systems with higher levels of animal health and welfare.

- 2.2. The farming and medication practices promoted by large corporations and integrators, that in many countries dominate production of food animals, should be specially monitored to bring about changes in how antibiotics are used.
 - 2.3. Farming systems that are unable to achieve a sustainable reduction in antibiotic use to very low levels should be phased out. Farm practices such as overcrowding, unhygienic conditions, inappropriate diets and breeds, and early weaning requiring routine antibiotic administration must be discouraged or prohibited.
 - 2.4. Animal husbandry practices that reduce stress, disease incidence and antibiotic use should be encouraged. This should include later weaning, less intensive husbandry, provision of straw, enriched housing, outdoor raising, slower-growing broilers and reduced stocking densities.
3. Strategies to **support the transition** to more sustainable farming methods are needed.
 - 3.1. There is a need for **increased capacity building** to enable the transition to sustainable agriculture, particularly in LMICs. Creating a network of trained veterinarians or similar workforce can help plug the gaps in universal access to veterinary services. In low-resource settings with few veterinarians, other professionals must be trained appropriately to maintain adequate oversight. Collaborative communities connecting farm practitioners should support knowledge dialogues among those working under similar conditions and among people with different areas of expertise. A global and national facility for providing expert advice tailored to LMIC context could be set up to compensate for a lack of trained personnel.
 - 3.2. **Global and national funding is needed to support country-level transition of** agricultural livelihoods to animal husbandry and aquaculture practices less reliant on the use of antimicrobials. With the growing intensification of food production, a financial support mechanism could help small-scale farmers make the necessary transition to achieve a more sustainable farming system, less reliant on antibiotic use. The productivity of farming systems may be lower during the transition towards a more sustainable model, so farmers need to be convinced and supported in making the transition and sustaining change. Establishing insurance schemes could address fears about productivity losses associated with the withdrawal of routine antibiotic use. Market-altering mechanisms are needed to ensure sustainable change and promote supply chains for responsibly raised livestock and fish.
 4. **Antimicrobial misuse and overuse on farms lead to the spread of antimicrobial residues, resistant bacteria and other AMR determinants through the environment.** The environmental aspect of AMR needs to be considered when advocating for sustainable food production models.
 - 4.1. **Governments** should ensure that all food-animal farms, slaughter houses, fish, meat and dairy-processing units, animal-feed manufacturing units, and veterinary-care units are registered. They should also develop guidelines for siting, biosecurity and land

application of manure as well as Standard Operating Procedures (SOPs) and standards for antibiotic residues in waste.

- 4.2. The government should encourage less risky waste management approaches such as in cases where sewage or manure is used as bio-fertilizers. These could include, for example, biogas generation, proper litter and manure composting before land application and preventing the use of poultry litter in aquaculture. Governments should also ensure that safe disposal practices are adopted for unused antibiotics and that programs for drug take-back across the supply chain are weaved into existing producer-responsibility programs.
- 4.3. A major part of antibiotic pollution could be best addressed by **eliminating antibiotic misuse** in the first place. Towards this, private players engaging in intensive food-animal production should focus on eliminating antibiotic misuse in addition to ensuring an AMR-centric approach to waste management.
- 4.4. **Improper waste management or antibiotic disposal** (e.g., discharge of untreated effluent from pharmaceutical manufacturing industries or disposal of unused antibiotics from farms, factories and domestic settings) can pave the way for entry of antibiotic residues in the larger external environment and contaminate the input water for aquaculture and agriculture farms. Therefore, appropriate waste management at all other sources which are manufacturing or using antibiotics should also be ensured.
- 4.5. **Greater disclosure** by antibiotic and feed manufacturers, retailers and food animal producers on the amount of antibiotics sold, procured, used and discharged as effluent would enable better assessment of antibiotics in the environment and of the contributions of different sectors. Standards and guidelines that help harmonize testing methods, analysis and reporting across different sectors, sub-sectors and geographies should be formulated.
- 4.6. Research efforts should focus on **environmental risk assessments** that can serve as a basis for evidence-based regulations and on strategies to remove antibiotic residues from environmental discharge.

III. Procurement

ARC Declaration (2014):

- *Food produced without routine use of antibiotics and without antibiotic residues should be labelled through reliable, certified schemes to facilitate consumer choice. Food produced with routine use of antibiotics must be clearly labelled, until effective prohibition of such antibiotic use can be introduced.*
- *Food produced without antibiotics in animal feed, or routinely used in any other way for its production, should be a pre-requisite in all public procurement of food. Hospitals should take a leadership role in procuring food produced without routine use of antibiotics, as doing so is consistent with their core health mission.*
- *Civil society and consumer movements should target the supply chain by exposing and boycotting corporations that produce or provide food with routine use of antibiotics.*

1. **Companies and governments should establish procurement policies** that meet WHO guidelines*. Policies should be documented publicly, phased in over a reasonable time frame, and include third-party verification.
 1. *Medically important antibiotics used only for the treatment of sick animals. No use allowed for growth promotion or routine disease prevention purposes. Limited use to treat a diagnosed illness or outbreak.
2. **Procurement, particularly by the public sector**, can powerfully shape how food products are sourced and raised without the routine use of antibiotics. Consumer groups can ask those institutions in a position to procure, such as schools, hospitals, restaurants, grocery chains, the military, railways and airlines, for 1) public commitment to source food products raised without the routine use of antibiotics; 2) clear timelines for following through on this public commitment; and 3) agreement to independent, verifiable audit of compliance with such commitment. The recent improvements in antibiotic policies by big food chains in North America should be applied throughout their global markets and in LMICs. Depending on the country context, these restaurants or retail food outlets may not command as significant share of the market, and so the effective reach of these campaigns will vary in different settings.
3. Procurement and supply chain policies must include **environmentally preferable purchasing criteria** to guide manufacturers, producers, suppliers, and distributors to be accountable to responsible antimicrobial use and associated pollution. As an example within the healthcare sector, Health Care Without Harm has shown how a virtual global network of hospitals and health systems can work to achieve measurable improvements in greening the practices of these institutions through the “Global Green and Healthy Hospitals” project.
4. Consistent with the regulatory guidance established under the Codex Alimentarius Commission, standards for **antibiotic labelling to consumers** should be established for food animal products to increase consumer awareness and enable consumers to leverage their demand to shape the market. The labelling standards should contain unambiguous and strict limitations on preventative use and ban growth promotion. Preventative use should be limited to individual treatment, as allowing for therapeutic use of antibiotics in food-animals should not compensate for poor animal husbandry. Labeling should be simple, mandatory and reflect adherence to this standard. Standard labels can also enable traceability of meat products.
5. All **feed used in food animal production should also be labelled** as containing antibiotics or being free of antibiotics. All veterinary products, if containing antimicrobial agents, should be clearly labeled as “antibiotics” in the local language instead of just listing their individual ingredients. Medicated feed for therapeutic use should be labelled as such, including a clear indication of the drug withdrawal period to prevent antibiotic residues in meat. Countries

should implement strong National Regulations for quality control and appropriate use of medicated feed in animal agriculture.

IV. Monitoring for accountability

ARC Declaration (2014):

- *All countries should participate in a global surveillance system that promotes and supports infrastructure and periodic survey data to assess animal antibiotic use and resistance patterns in farm animals and foods.*

1. The **critical data** to collect includes:
 - Antibiotic production, sales, price, volume exported or imported in trade and consumption by sector (human/animal), species (e.g. aquaculture, poultry), purpose (treatment, metaphylactic, prophylactic, growth promotion), class, and farming system (intensive, extensive, organic, etc.)
 - Amount and class of antibiotics used per company
 - Antibiotic resistant bacteria in animals
 - Antibiotic residues and resistant bacteria in meat
 - Antibiotic residues and resistant bacteria in waste of farms and processing units (and fate of unused antibiotic)
 - Progress vis-à-vis antibiotic reduction targets
2. **Aggressive targets for reductions** in antimicrobial use should be set. Some countries have already achieved large reductions in just a few years. Setting easy-to-achieve targets could slow down progress, so targets must be ambitious. National Action Plans (NAP) are ambitious, so expectations should be set accordingly.
3. **Rather than a “one size fits all” approach, both indicators and programs could lay out a series of stepping stones**, with expectations growing as local infrastructure and capacity do and as external technical and financial support is received. These stepping stones would take into account the country’s stage of development, level of resources, and local context such as the size of the livestock industry. By offering a tiered approach, lower resourced countries might participate in the global reporting system at an earlier stage. By setting country-level targets for AMR reduction, governments working with different assets and resources might chart different pathways to the same goals. Flexibility in adapting the modalities of tackling AMR to the local context is key.
4. There is a need for governments and intergovernmental organizations to support and promote **data transparency**, which makes benchmarking, the setting of meaningful targets, and monitoring for accountability feasible. Making the data publicly available would allow for analysis, comparison, and accountability from these findings. At the country level, non-transparency sometimes results not from lack of capacity to collect such data, but from a wish to prioritize commercial confidentiality. Public health concerns should override concerns over

commercial confidentiality, and all collected data on antimicrobial use must be publicly disclosed. Providing information may be a burden on companies and governments but is critical for civil society to hold them accountable.

5. There is a need for a **harmonized system** to measure and compare antimicrobial use across different systems (hospitals, communities, plant and animal agriculture) and across countries. **Scorecards** can serve as a powerful tool for accountability, enabling civil society, professional societies, governments, intergovernmental organizations and other groups to perform cross-country and stakeholder comparisons. The use of scorecards for key procurers of food products can help motivate data transparency and also public accountability for effective stewardship of antimicrobials in the food production process. The successful model provided by the Chain Reaction Antibiotics Scorecard, which rates the top U.S. restaurant chains on their antibiotic policies and practices, could be applied to other corporations, hospitals, hotels, schools and public-sector networks. Scorecards could be expanded to include details such as amount, types and classes of antibiotics used, antibiotic used per kilogram of meat, use of Highest Priority Critically Important Antibiotics, Critically Important Antibiotics and medically important antibiotics, purpose of use (treatment, metaphylactic, prophylactic, growth promotion), and routes for use (feed, water, injectables).
6. **Trade data** on antimicrobials could help target the biggest importers and exporters of antimicrobials for food production and of food animal products for a targeted response. The trade of food animal products is concentrated into the hands of a few countries, both on the export and on the import sides. Therefore, the impact of AMR-related trade restrictions by importing countries on the adoption of more sustainable food production deserves further analysis.

V. Linking AMR to other global priorities and movements

1. AMR ties into various **ongoing global movements**. Mainstreaming AMR into broader universal health coverage, sustainable development, food system and environment agendas is key, both to scaling and to sustaining efforts to address AMR. The impact of antibiotic use in agriculture and of intensive agricultural systems on climate change and planetary health cannot be neglected. Antibiotic discharge and residue mitigation should be considered in shaping environmental discharge regulations. The link between high meat consumption and non-communicable diseases should also be highlighted, as should the link between high meat consumption and greenhouse gas emissions.
2. Antibiotic access and resistance play important roles in achieving the **Sustainable Development Goals**. Tackling AMR is a priority that can and should be addressed in SDG2 (Zero Hunger), but also in SDG12 (Ensure sustainable consumption and production patterns), thereby considering reduction of food waste and changes in the food production model. AMR-specific indicators, both in healthcare and food-production systems, should be integrated with the Sustainable Development Goals.
3. On the consumer side, AMR should be incorporated into movements advocating for **sustainable healthy diets** by promoting “fewer but better” meat products, farming systems that ensure fair

prices for farmers and adequate labor conditions for food workers, and agricultural systems with high animal welfare standards. It is estimated that antimicrobial consumption will increase by 67% by 2030, two thirds of which is due to an increase in the number of animals raised for food production. Decreasing the demand for animal products in the appropriate country settings (mostly high- and middle-income countries) can therefore both improve diets for health reasons and decrease antimicrobial use.

4. Meeting the **food security** goals of SDG 2 does not necessarily imply increasing production of all food system models. Increasing industrial farming for animal production is not sustainable. According to the European Food Safety Authority and the European Medicines Agency, “The stress associated with intensive, indoor, large scale production may lead to an increased risk of livestock contracting disease.” These European agencies say that some intensive farming systems rely on routine antimicrobial use, and therefore may be “unsustainable in the absence of antimicrobials”. According to the UK Review on Antimicrobial Resistance, growth promotion and preventative treatments are “particularly prevalent in intensive agriculture, where animals are kept in confined conditions”. Instead of further intensification, more sustainable food-production practices are the solution, not the challenge, to achieving adequate food security and concurrently lowering antimicrobial use in this sector.
5. To enable civil society to do its part, intergovernmental organizations and funders should support a **Civil Society Challenge Facility for AMR**, independently administered, financed with public sector monies, and capable of enabling global, regional and local as well as cross-sectoral action to tackle antimicrobial resistance.