



联合国
粮食及
农业组织

Food and Agriculture
Organization of the
United Nations

Organisation des Nations
Unies pour l'alimentation
et l'agriculture

Продовольственная и
сельскохозяйственная организация
Объединенных Наций

Organización de las
Naciones Unidas para la
Alimentación y la Agricultura

منظمة
الغذية والزراعة
للأمم المتحدة

PROGRAMME COMMITTEE

Hundred and Twenty-seventh Session

Rome, 4-8 November 2019

Progress review on antimicrobial resistance (AMR), including review of Voluntary Code of Conduct

Executive Summary

- This document is presented in response to the request by the 125th Session of the Programme Committee to report on progress on the objectives of the FAO Action Plan, in line with the Global Action Plan to combat Antimicrobial Resistance. The document also provides updates on progress on inter-agency work and outlines future activities for the management of antimicrobials in food and agriculture.

Guidance sought from the Programme Committee

- The Programme Committee is invited to take note of the progress made and to provide guidance as appropriate including on the update of the FAO Action Plan.

Queries on the substantive content of this document may be addressed to:

Mr Berhe Tekola
Director
Animal Production and Health Division (AGA)
Contact: +39 06 57053371

*This document can be accessed using the Quick Response Code on this page;
an FAO initiative to minimize its environmental impact and promote greener communications.
Other documents can be consulted at www.fao.org*
NB380e



PC 127

Background

1. The 39th Session of the FAO Conference (June 2015) adopted Resolution [4/2015](#)¹ on Antimicrobial Resistance (AMR) which recognized that AMR posed an increasingly serious threat to public health and sustainable food production, and that an effective response should involve all sectors of government and society.
2. Subsequently, the 41st Session of the FAO Conference (June 2019) adopted Resolution [6/2019](#)² on AMR which acknowledged and welcomed FAO's efforts in addressing AMR as a One Health issue and agreed on the need to further support these efforts through extra budgetary resources.
3. AMR-related activities are implemented by FAO under the umbrella of the FAO Action Plan on AMR (2016-2020) which addresses four major focus areas:
 - a) improve awareness on AMR and related threats
 - b) develop capacity for surveillance and monitoring of AMR and AMU (antimicrobial use) in food and agriculture
 - c) strengthen governance related to AMU and AMR in food and agriculture
 - d) promote good practices in food and agricultural systems and the prudent use of antimicrobials

I. Global progress

4. Since the presentation of the progress report on AMR to the 125th Session of the Programme Committee (November 2018), National Governments, with the support of the tripartite organizations WHO, FAO, and OIE, have taken actions to advance the implementation of the Global Action Plan on AMR.
5. Since 2016, in order to monitor and review progress of the Global Action Plan, the tripartite agencies conduct an annual country survey on advances in tackling AMR across all sectors. The results of the 159 responses in the last survey round of 2018/19 provide a robust source of evidence to assess progress at the country level on a number of key areas.³
6. Although reported progress by countries cannot be solely attributed to activities of FAO or the tripartite organizations, the implementation of FAO's Action Plan on AMR has supported changes at the country level. Relevant findings of the country survey are included in the report on the implementation of FAO's Action Plan on AMR in Section III.
7. Based on the latest survey round (2018/19), countries reported advances in the development and implementation of National Action Plans (NAP) on AMR, with a total of 117 countries having developed NAPs (up from 79 countries in 2016/17). Currently, however, only 75 countries have functional multi-sectoral coordination mechanisms in place, notwithstanding there has been an increase from 30 countries in 2016/17.
8. Furthermore, the survey findings indicate that 47 countries have a national surveillance system for AMR resistance in food of animal and plant origin (up from 33 countries in 2016/17). An additional 36 countries are undertaking some form of data collection, although facing challenges regarding the use of standardized approaches, national coordination and/or quality management. Considering the complexity of data generation and gathering, this is an encouraging figure although actions to strengthen national surveillance systems need to continue.

¹ [C 2015/REP](#)

² [C 2019/REP](#)

³ <https://amrcountryprogress.org/>

II. Progress in implementation of the FAO Action Plan on AMR

A. Focus Area 1 - Improve Awareness on AMR and Related Threats

9. The latest available survey data indicates that while a large share of countries implement awareness-raising activities, only 34 countries have nation-wide campaigns targeted to animal health, plant health, food production, food safety and environment sectors. Notably, 23 countries do not implement any significant awareness-raising activities and 77 countries do so on a limited scale.⁴

10. FAO contributes to achieving improved awareness on AMR and related threats to food and agriculture sectors by providing evidence and knowledge as global public goods which countries and other actors can integrate into national awareness-raising activities. These include training materials, technical publications, videos and guidelines to design effective awareness campaigns based on stakeholder assessments.

11. FAO also directly participates in global awareness campaigns such as the World Antibiotics Awareness Week (WAAW) (18-24 November 2019), as well as other international commemorations and key national, intergovernmental and sectoral meetings. The Organization also leverages its network of decentralized offices to set up national multi-stakeholder consultation working groups to share information, increase collaboration and coordinate activities on AMR.

12. Particular actions related to awareness raising include the development and implementation of a survey to assess knowledge, attitudes and practices in eight countries in Africa and Asia and the Pacific. In the latter, FAO has facilitated the introduction of a *studium generale* on AMR at six veterinary medicine faculties. In Latin America and the Caribbean, FAO has trained technical and communication staff of official health services on modern risk communication methodologies for AMR.

B. Focus Area 2 - Develop Capacity for Surveillance and Monitoring of AMR and Antimicrobial use in Food and Agriculture

13. Although countries are making progress with regard to monitoring of AMR and AMU in food of animal and plant origin, the establishment of national surveillance systems remains a challenge. Only 47 countries reported having a functioning national system in place to monitor AMR in food of animal and plant origin, and 53 countries to having the necessary laboratory and data reporting capacities for the surveillance of AMR in animals in 2018/19.

14. To address the challenges related to the monitoring and surveillance of AMR, FAO supports the strengthening of laboratory capacities at the country level. This area is of particular relevance, considering that 58 countries reported that laboratories performing antimicrobial susceptibility testing were not included in the national AMR surveillance system.

15. FAO has developed and deployed an [Assessment Tool for Laboratories and AMR Surveillance System \(FAO-ATLASS\)](#), with the aim of assisting countries in assessing their national surveillance system and laboratory diagnostic capacity for AMR detection. Since 2016, FAO-ATLASS has been implemented in 27 countries⁵ with over 100 laboratories and will continue to be rolled out.

⁴ Data refers to the 2017/18 survey round, as the 2018-19 survey does not distinguish sector specific awareness-raising campaigns.

⁵ 2016: Cambodia, Ghana; 2017: Kenya, Senegal, Tanzania, Zambia, Zimbabwe, Cambodia*, Indonesia, Lao PDR, Myanmar, Philippines, Thailand, Viet Nam; 2018: Sudan, Ethiopia, Senegal*, Indonesia*, Singapore, Viet Nam*, Armenia, Belarus, Kyrgyzstan Republic; 2019: Ghana*, Tanzania*, Zimbabwe*, Bangladesh, Bhutan, Maldives, Nepal, Papua New Guinea, Thailand*, Tajikistan, Sri Lanka. (* refers to follow up missions).

16. In addition, FAO has strengthened countries' laboratory capacities through trainings⁶, the development of laboratory procurement⁷ and the provision of training materials on AMR/AMU surveillance, monitoring and laboratory methods at the regional and country level.

17. The FAO Regional Office for Asia and the Pacific is developing a series of guidelines for the surveillance of AMR in healthy animals, diseased animals, aquaculture and food producing environments, as well as on AMU. Prior to this, the guidelines for regionally harmonized surveillance of AMR in healthy animals intended for food consumption will be published during WAWW in November 2019.

18. FAO has supported countries in piloting AMR surveillance activities in the agriculture sector to generate AMR data, mostly of which were focused on food-borne bacteria from healthy animals intended for food consumption.

19. FAO is also developing a data platform for antimicrobial resistance related to food and agriculture, contributing to the Tripartite Integrated Surveillance System on AMR/AMU platform (TISSA).

20. In collaboration with the OIE, FAO has supported data collection on the use of antimicrobials, ensuring the quality of the data in the food and agriculture sector. A survey targeting field veterinarians, feed mills and veterinary pharmacies to identify the use of antimicrobials in each of the countries was developed by the FAO Regional Office for Europe and Central Asia and will be implemented in five countries⁸ in late 2019.

21. In support of the global network on AMR, ten institutions⁹ have been identified to become FAO AMR Reference Centres in support of Member Nations' implementation of the FAO Action Plan on AMR, with one already designated and four to be designated by the end of 2019. In addition, four institutions¹⁰ were selected as candidates for FAO Reference Centers on Aquaculture Biosecurity and technical advisory groups for AMR and AMU were established in South East Asia, South Asia and East Africa.

22. The country self-assessments evidence that there is a substantial data gap with respect to AMR in the environment sector and FAO has contributed to filling this knowledge gap with the identification of alternative screening methods¹¹ based on nuclear techniques for studying environmental horizontal gene transfer.

23. With regard to AMR in the aquaculture and fisheries sector, FAO has published [*The performance of antimicrobial susceptibility testing programmes relevant to aquaculture and aquaculture products*](#), and provided specific capacity building training workshops on fish waste management, antimicrobial residues analysis and antimicrobial susceptibility testing in fisheries and aquaculture products.

C. Focus Area 3 - Strengthening Governance Related to AMU and AMR in Food and Agriculture

24. NAPs on AMR are currently operational, with the inclusion of monitoring arrangements, in 78 out of the 117 countries that have developed NAPs to date. The animal health (terrestrial and aquatic) sector is actively involved in the development and implementation of the NAPs in 151 countries; food production sector is involved in 86 countries; food safety sectors in 118 countries; plant health sectors in 66 countries; and environment sectors in 94 countries.

⁶ Training was provided in Cambodia, Ethiopia, Philippines, and Zimbabwe.

⁷ Procurement was developed in Sudan, Tanzania and Zimbabwe.

⁸ Armenia, Belarus, Kazakhstan, Kyrgyzstan, Tajikistan

⁹ Institutions specific for AMR from: France, Denmark, Germany, Mexico, New Zealand, Russian Federation, Senegal, Thailand, United Kingdom and United States of America.

¹⁰ Institutions on aquaculture and biosecurity from: China, India, United Kingdom and United States of America.

¹¹ FAO & IAEA. Antimicrobial movement from agricultural areas to the environment: The missing link. A role for nuclear techniques. Rome, FAO.

25. FAO support to Member Nations in developing and operationalizing multi-sector ‘One-Health’ NAPs to combat AMR is provided through the Organization’s stepwise approach tool “Progressive Management Pathway”. The tool has been piloted in four countries¹², with planned pilots in additional countries in Latin America, Central Asia and North Africa.¹³ The AMR PMP will also be launched during the WAAW in November 2019.

26. FAO has refined [a methodology for performing situation analysis of the risk of AMR in food and agriculture sectors](#) in order to provide a risk-based prioritization of sectors, which is essential for the allocation of resources for activities within the NAPs. This methodology is being piloted in four countries in Latin America¹⁴ and will also be deployed in other regions.

27. FAO is supporting the strengthening of legal frameworks to combat AMR. Laws or regulations on the prescription and sale of antimicrobials for animal use are in place in 107 countries. Furthermore, FAO’s Development Law Service (LEGN) has developed a methodology to assess national legislation relevant for AMU and AMR in the food and agriculture sectors, including legal areas on the regulation of antimicrobials, on minimizing the contamination of food and the environment, and on minimizing the need to use antimicrobials. The relevant legal instruments for analysis spans across legislation on veterinary medicinal products, feed, food safety, environment, water and waste. To date, the methodology has been applied in 18 countries of Africa¹⁵, Asia¹⁶ and Central Asia¹⁷, and will be implemented in five countries in Latin America¹⁸ before the end of 2019. OIE provided input that was incorporated into the refining of the methodology and has collaborated with FAO in piloting a joint mission to the Philippines to conduct the first VLSP (Veterinary Legislation Support Programme).

28. Furthermore, FAO legal experts are identifying AMR-relevant legislations and policies within and across countries in [FAOLEX](#)¹⁹ and are creating a new subset of records that are relevant for AMR. The new subset of data will facilitate access and understanding of the different legal areas relevant for AMR in different countries. With the aim of bringing together countries in the region to share their experiences and seek opportunities to collaborate on harmonized approaches in legislation that can better address the issue of AMR; three regional workshops on legislation relevant for AMU and AMR were organized for West African countries and for the Southern African Development Community.

29. Various coordination mechanisms were created at regional level, including a sub-regional One Health AMR platform among 10 Francophone countries, Regional Economic Communities and the Tripartite; as well as an interagency coordination mechanism among regional organizations in East Africa (FAO, OIE, WHO, AU-IBAR, Africa CDC, East African Community, IGAD, Mott Macdonald, International Livestock Research Institute, World Animal Protection, USAID and US-CDC).

D. Focus Area 4 - Promoting Good Practices in Food and Agriculture Systems and the Prudent Use of Antimicrobials

30. Countries reported weak development and implementation of good health, management and hygiene practices to reduce the use of antimicrobials and minimize development and transmission of AMR in animal production. The majority of countries were either not undertaking any systematic efforts to improve good production practices (12 countries) or only had some activities in place (95 countries); similar patterns were reported for the food processing sector. This is, therefore, an area where progress needs to be accelerated in the coming years.

¹² Ghana, Belgium, Tajikistan, Kenya

¹³ St Kitts & Nevis, Tunisia, Kyrgyzstan, Lao PDR

¹⁴ Bolivia, Ecuador, Peru, Uruguay

¹⁵ Ethiopia, Ghana, Kenya, South Sudan, Tanzania, Zambia, Zimbabwe

¹⁶ Bangladesh, Cambodia, Laos PDR, Philippines, Vietnam

¹⁷ Armenia, Belarus, Kyrgyzstan, Kazakhstan, Tajikistan, Ukraine

¹⁸ Bolivia, Ecuador, Guatemala, Peru, Uruguay

¹⁹ FAOLEX is a comprehensive database of national legislation and policy in all areas under FAO’s mandate.

31. FAO launched a [new AMR case study series](#), which aims at supporting countries to learn from one another and to share experiences on the responsible use of antimicrobials. The first one published in 2019 focuses on [Tackling antimicrobial use and resistance in pig production: Lessons learned in Denmark](#).
32. Different modalities of stakeholder assessment studies (qualitative and quantitative e.g. KAP) have been completed in ten countries²⁰ across different stakeholders, mainly involving farmers and veterinarians, as well as extension workers distributing antimicrobials. A report of the KAP+ study [Towards a bottom-up understanding of antimicrobial use and resistance on the farm: A knowledge, attitudes, and practices survey across livestock systems in five African countries](#) has already been published.
33. FAO is collaborating with the OIE in Bangladesh on developing prudent AMU guidelines for aquaculture/fisheries through a collaborative workplan with WorldFish, after having conducted two field missions to perform a rapid assessment of the production system and to identify key challenges from farmers' perspectives.
34. FAO issued a call for guidance on good practices across various sectors; all documents received (over 350) have been reviewed. Based on a scoring system, over 50 relevant good practices guidelines have been compiled in a repository that will be made available to all FAO member countries.
35. Various guidelines and publications are currently under development or being finalized with regard to: aquaculture and fisheries, including guidelines for management of deadstock in aquaculture; apiculture; risk based fish inspection and management of waste from fish processing plants, including: Responsible Management of Bacterial Diseases in Aquaculture; Good biosecurity practices for important aquaculture species (carp, tilapia and shrimp); and FAO Technical Guidelines for Responsible Fisheries 5.8: Prudent and Responsible Use of Veterinary Medicines in Aquaculture. In addition, a publication on "Animal nutrition strategies and options to reduce the use of antibiotics in animal production (swine, poultry and ruminants)" will also be published shortly. Furthermore, FAO has selected over 50 relevant good practices guidelines which have been compiled in a repository that will shortly be made publicly available.
36. With regard to apiculture, FAO is partnering with the *Istituto Zooprofilattico Sperimentale* of the Ministry of Health of Italy to gather global baseline information on bee health and antimicrobial use via an [online survey](#), which was launched in 2019 in ten languages. Guidelines for a proper use of antimicrobials in apiculture is being finalized and will be published in 2020, which adapts the Progressive Management Pathway (PMP) as an aide to good beekeeping practices.
37. The Codex Alimentarius Commission re-established the ad hoc Intergovernmental Task Force on AMR (TFAMR) to revise the existing Codex Code of Practice to minimize and contain AMR, as well as to develop new guidance for countries on surveillance of the food production environment (including crops) on foodborne AMR and to deliver scientific advice to the ad hoc Task Force on AMR. In this regard, an expert meeting was held at FAO in June 2018. A FAO/WHO Expert Meeting was held in January 2019 on Carryover in Feed and Transfer from Feed to Food of Unavoidable and Unintended Residues of Approved Veterinary Drugs.
38. The 14th Session of the Commission on Phytosanitary Measures (CPM 14) (April 2019) noted and conveyed appreciation for the discussion on the use of antimicrobials and AMR in respect of plant health as an important topic to monitor. CPM 14 supported the work of the International Plant Protection Convention (IPPC) Secretariat with regard to maintaining a watching brief on the contribution of plant health actions on AMR, through the FAO task force and further suggested that a CPM recommendation on AMR be developed in relation to plant health.

²⁰ Cambodia, Laos PDR, Philippines, Sudan, Ethiopia, Kenya, Tanzania, Ghana, Zambia and Zimbabwe

III. Multisectoral collaboration: FAO/OIE/WHO tripartite partnership and others

39. Following the signature of the Tripartite MoU, FAO, OIE, WHO, in collaboration with the United Nations Environment Program (UNEP) developed a concrete Tripartite Work Plan on AMR (2019-2020) in support of the Global Action Plan on AMR (GAP) and subsequently endorsed at the Tripartite Executive Meeting in Rome (February 2019).

40. A specific Multi Partner Trust Fund for AMR (MPTF) was established and launched in June 2019. The AMR MPTF is a strategic, inter-agency, and multi-partner initiative inviting countries, foundations, financial institutions, and the private sector to leverage the required funding to implement the Tripartite Work Plan.

41. To strengthen the tripartite collaboration and support the implementation of MPTF, a Tripartite Joint Secretariat was established, for which FAO has nominated a liaison officer who will serve as key focal point, coordinating joint actions and the delivery of Tripartite Work Plans on AMR among the Tripartite.

42. FAO, together with the OIE, have been providing support to the Geneva based Secretariat of the [ad-hoc Inter-Agency Coordinating Group on AMR \(IACG\)](#), and participated in the [IACG Report](#) which was submitted to the UN Secretary-General in April 2019 and which included 14 recommendations focusing on progress in countries, innovation, collaboration, investment and global governance.

IV. Main challenges identified

43. FAO is learning from the results of the implementation of the current Action Plan, which will come to an end in 2020, and the lessons learned will be reflected in the new Action Plan to be drafted which will consolidate current achievements and provide continuity in tackling the risk of AMR.

44. AMR Governance is an area where short term progress is difficult to observe, as evaluating current legislation, drafting and implementing policies or passing new laws is a lengthy process affected by complex issues outside the AMR arena.

45. While evidence (data generation, collection and analysis) is at the very root of the success in tackling AMR, it is also one of the most technically complex goals and requires considerable effort and resources also in the other three areas (awareness, governance and practices). FAO's work on AMR has so far successfully balanced those efforts and resources among the four areas to build on the production of quality data; FAO Member Nations may wish to main this balanced approach in the future planning of AMR work.

V. Guidance sought from the Programme Committee

46. The Programme Committee is invited to take note of the progress made and to provide guidance as appropriate including on the update of the FAO Action Plan.