



Food and Agriculture
Organization of the
United Nations

FAO Action Plan on AMR and AMR eLearning

FAO AMR elearning course: Understanding AMR in food and agriculture



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FOOD

Global demand for food is estimated to increase **more than 70% by 2050**.

INTENSIFICATION

Intensification of animal and crop production is increasing the use of antimicrobials.

current PROBLEMS

AMR DRIVERS

Misuse and overuse of antimicrobials are among the main drivers for the development of AMR.

FOOD ANIMALS

73% of all antimicrobials sold are used in animals raised for food.

ENVIRONMENT

Residues of antimicrobials used in production may **spread into the environment** contaminating soil and water.

Consequences



TREATMENT

AMR is reducing the effectiveness of antimicrobials compromising the treatment of infectious diseases.

10 MILLION

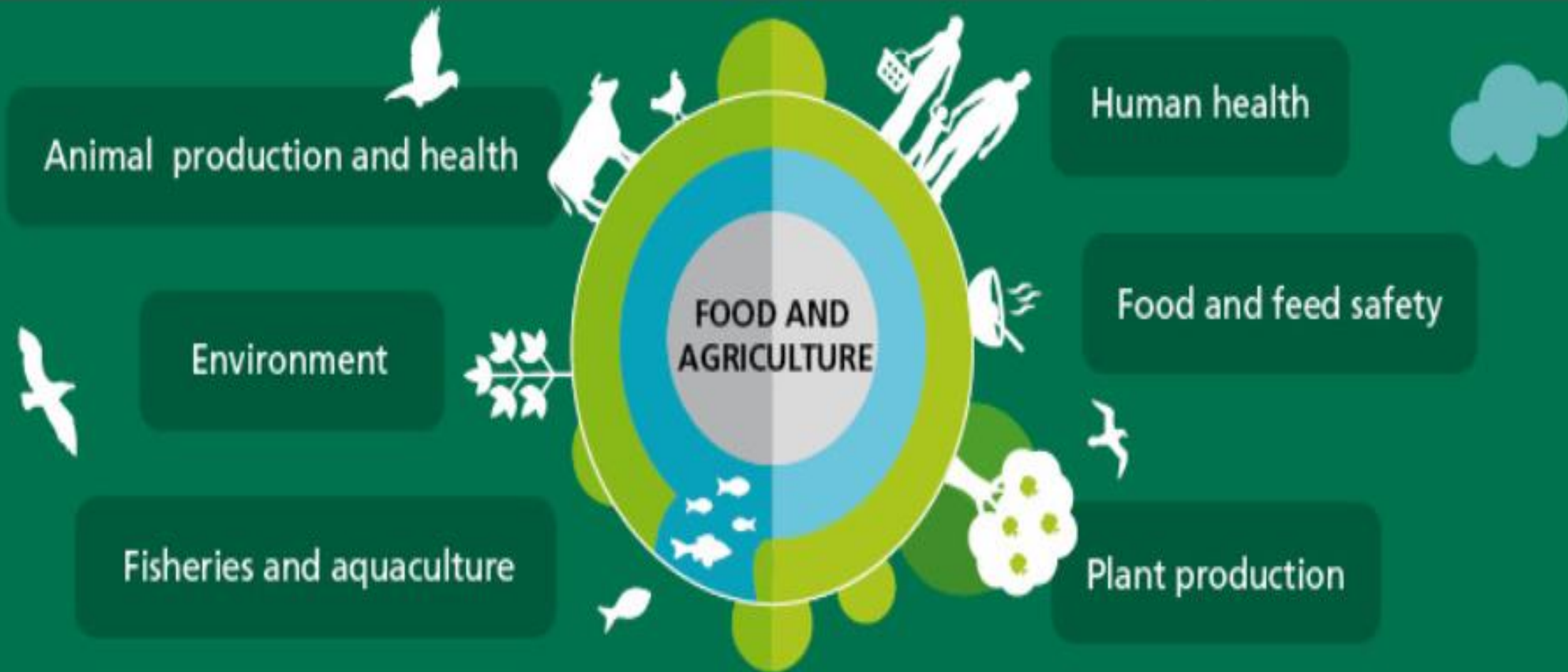
The death that could reach 10 million per year by 2050.

DEATHS

Recent studies found that AMR caused 1.27 million human deaths in 2019

100 TRILLION

The economic impact if the problem is not address could have an impact of about USD 100 trillion.

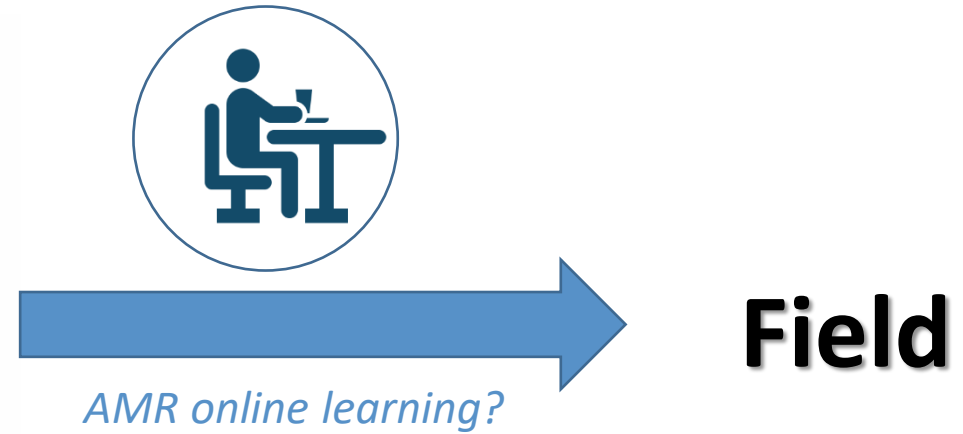
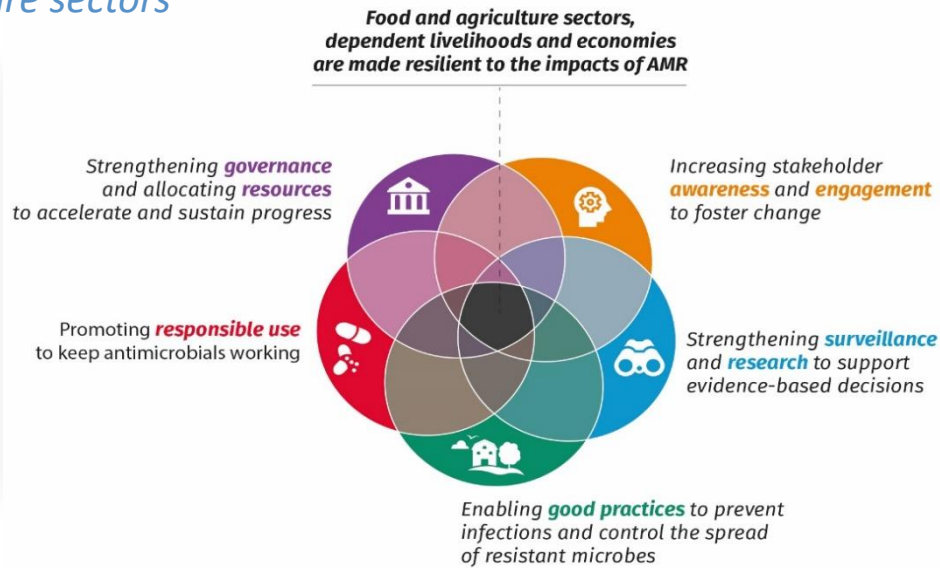
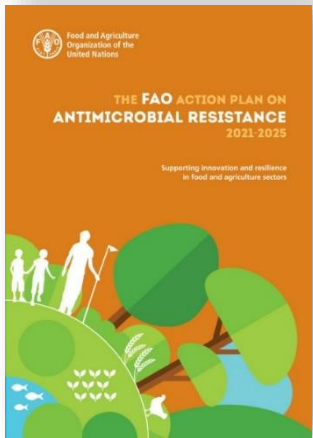


FAO's role

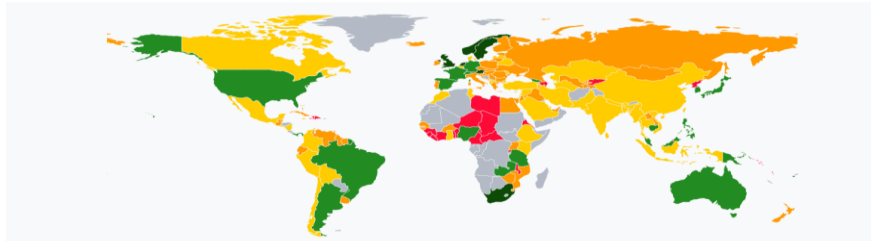
FAO plays a key role in supporting governments, producers, traders and other stakeholders to move towards the responsible use of antimicrobials in agriculture, thus helping reduce antimicrobial resistance in agricultural systems.

FAO Action Plan on AMR

*Supporting innovation and resilience
in food and agriculture sectors*



FAO tools, intervention, guidelines

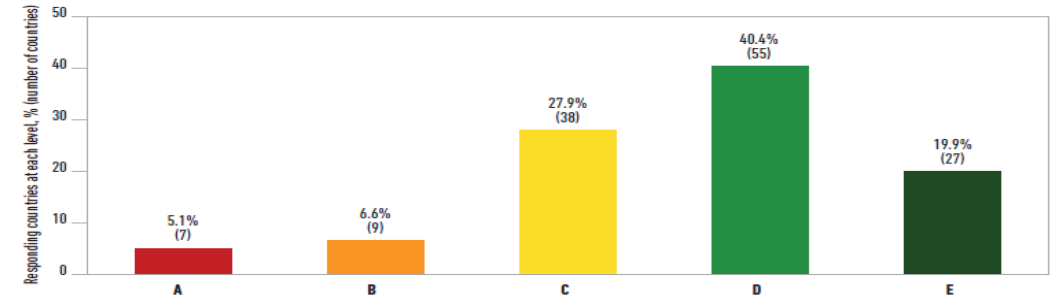


5.1 Country progress with development of a national action plan on AMR

- A - No national AMR action plan
- B - National AMR action plan under development or plan involves only one sector or ministry.
- C - National AMR action plan developed that addresses human health, animal health and other sectors.
- D - Multi-sectoral AMR action plan approved that reflects Global Action Plan objectives, with an operational plan and monitoring arrangements.
- E - Multi-sectoral AMR action plan has funding sources identified, is being implemented and has monitoring in place.

The boundaries and names shown and the designations used on this map do not imply the expression of any opinion whatsoever on the part of the World Health Organization concerning the legal status of any country, territory, city or area or of its authorities, or concerning the delimitation of its frontiers or boundaries. Dotted lines on maps represent approximate border lines for which

Fig. 1 Responses on NAP development, 2019–2020

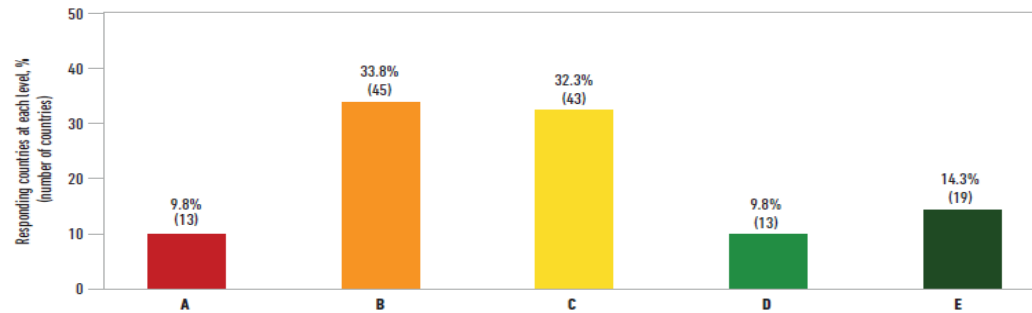


No response= 0 (n=136)

■	A	No national AMR action plan.
■	B	National AMR action plan under development.
■	C	National AMR action plan developed.
■	D	National AMR action plan approved by government that reflects Global Action Plan objectives, with a budgeted operational plan and monitoring arrangements.
■	E	National AMR action plan has funding sources identified, is being implemented, and has relevant sectors involved with a defined monitoring and evaluation process in place.

Source: Tripartite AMR country self-assessment survey data.

Fig.27 Responses on policies to optimize the use of antimicrobials in the animal health sector, 2019–2020

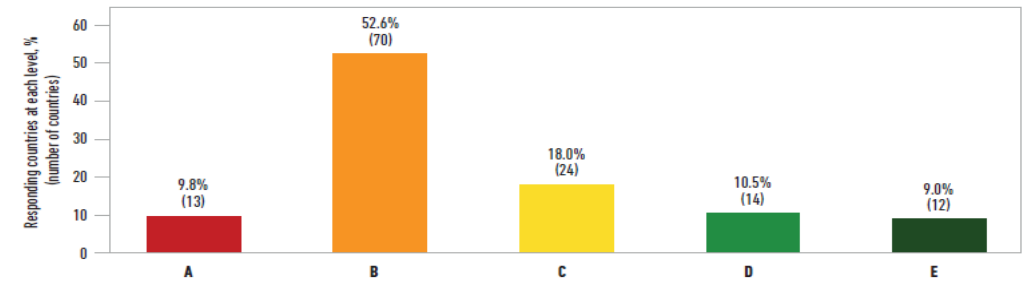


No response = 3 (n=133)

■	A	No national policy or legislation regarding the quality, safety and efficacy of antimicrobial products.
■	B	National legislation covers some aspects of national manufacture, import, marketing authorization, control of safety, quality and efficacy and distribution of antimicrobial products.
■	C	National legislation covers all aspects of national manufacture, import, marketing authorization, control of safety, quality and efficacy and distribution of antimicrobial products.
■	D	The national regulatory framework or AM products incorporates all the elements included in the related international standards on responsible and prudent use of antimicrobials.
■	E	Enforcement processes and control are in place to ensure compliance with legislation.

Source: Tripartite AMR country self-assessment survey data.

Fig. 21 Responses on good management and hygiene practices in the animal production sector, 2019–2020



No response = 3 (n=133)

■	A	No systematic efforts to improve good production practices.
■	B	Some activities in place to develop and promote good production practices.
■	C	National plan agreed to ensure good production practices in line with international standards (e.g. OIE Terrestrial and Aquatic Codes, Codex Alimentarius). Nationally agreed guidance for good production practices developed, adapted for implementation at local farm and food production level.
■	D	Nationwide implementation of plan to ensure good production practices and national guidance published and disseminated.
■	E	Implementation of the nation-wide plan is monitored periodically.

Source: Tripartite AMR country self-assessment survey data.

- FAO Progressive Management Pathway for AMR (FAO-PMP-AMR) **(12 countries)**
- Tool for Situation Analysis of AMR Risks in the food and agriculture sectors **(13 countries)**
- Assessment Tool for Laboratories and AMR Surveillance Systems (FAO-ATLASS) **28 countries)**
- Legal methodology to analyze AMR-relevant legislation in the food and agriculture sectors **(22 countries)**

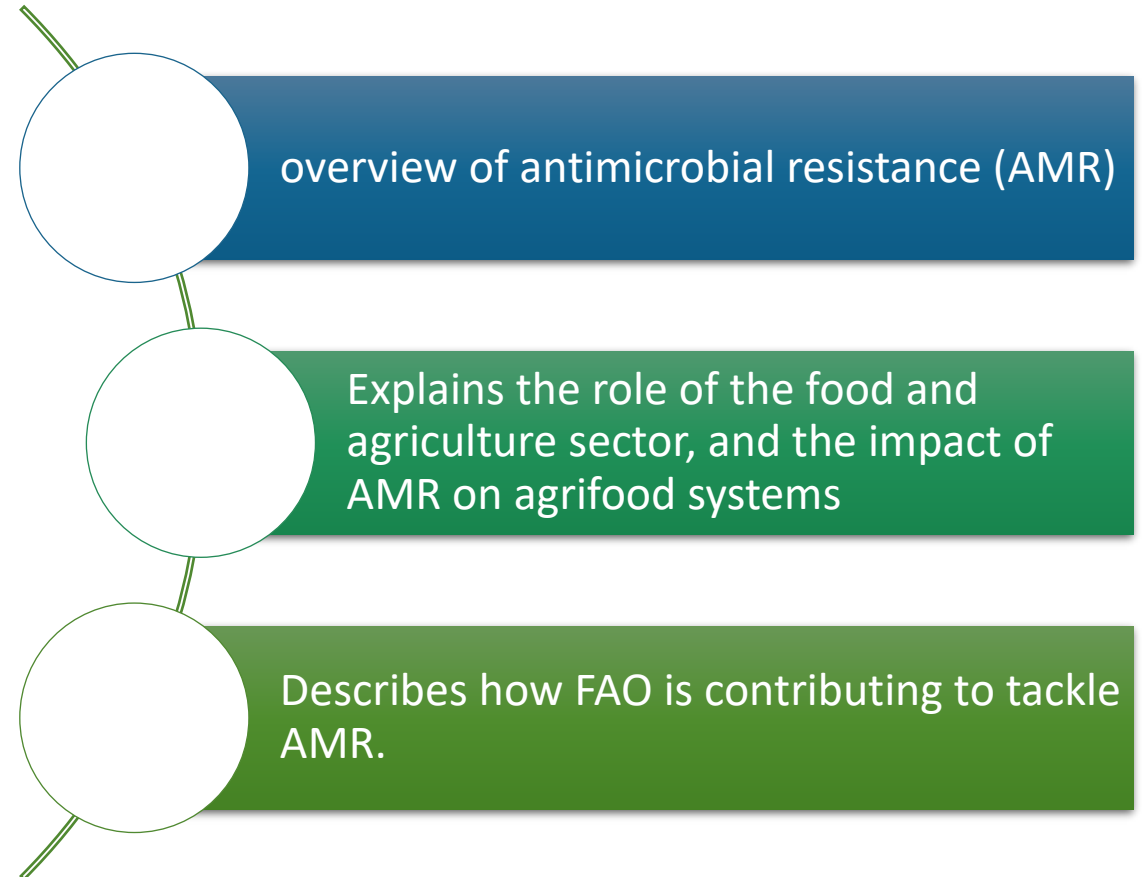
FAO Action Plan on AMR

Field interventions enabling good practices and prudent AMU

- **Stakeholder assessments** (farmers, feed industry, agrovets, animal health workers) using various, mix-methods and knowledge, attitudes, and practices surveys across livestock systems
- **Participatory interventions** Farmer Field Schools, Behaviour Change Community of Practice
- **One Health approaches for antimicrobial stewardship** among veterinarians and medical doctors



Understanding AMR in food and agriculture



Understanding AMR in food and agriculture

Course structure

The course consists of 5 lessons:

- Lesson 1 - What is antimicrobial resistance and why is it a global public health challenge
- Lesson 2 - Antimicrobial resistance in the context of One Health
- Lesson 3 - The role of food and agriculture stakeholders in antimicrobial resistance
- Lesson 4 - How can antimicrobial resistance be contained and its impacts minimized in food and agriculture
- Lesson 5 - The role and current initiatives of FAO in tackling antimicrobial resistance

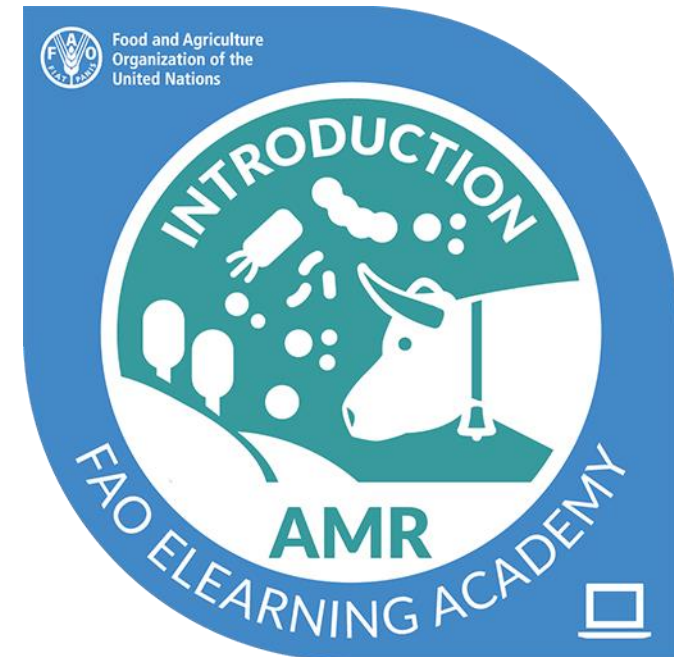


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How would it benefit audience?

Target audience

- producers and wholesale and retail distributors of antimicrobials;
- extension and veterinary services, epidemiologists, laboratory personnel and academia, including students; and
- government officials, policy-makers, food safety officers and the private sector.



Digital certificate

- Employment
- Education

Course development process

- **Subject matter experts**
 - FAO CJWZ
 - UK Defra (FAO Reference Centre for AMR)
- **Platform**
 - FAO elearning academy
- **Technical validation**
 - FAO AMR experts (FAO AMR working group on AMR and Action Plan pillar leads)
 - FAO Reference Centre for AMR

FAO AMR working group

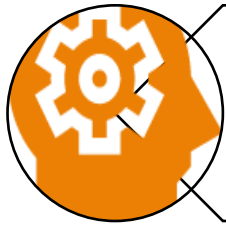


Veterinary
Medicines
Directorate



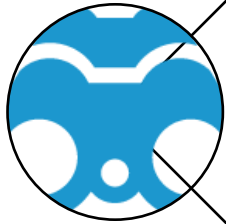
Way forward

Producing new courses upon the demand



Awareness & Engagement

- Development of the targeted awareness product
- Awareness raising, advocacy and behavioural analysis



Surveillance & Research

- FAO ATLAS modules for assessor
- AMR data generation and interpretation of AST
- AM Residue monitoring
- Implementation of surveillance guidelines
- Implementation of risk analysis for AMR
- Epidemiology training for AMR/AMU data management



Best Practice

- The Codex code of practice
- Guidance on phytosanitary measures
- Agriculture waste management
- Improving management of animal diseases and reducing AMU



Responsible AMU

- AM Stewardship
- Application of voluntary guidelines for responsible AMU
- Practical recommendations for prudent AMU



Governance & Resources

- AMR legislation
- Building the economic case for prudent AMU
- FAO-PMP-AMR
- AMR and One Health

Way forward

- **Keep developing elearning framework further to provide elearning service**
- **AMR elearning webpage to find all the AMR courses**
- **Create community to share the experience across the regions**





FAO VIRTUAL LEARNING CENTERS (VLCs)



Addressing antimicrobial resistance (AMR) in agrifood systems; a FAO e-le

1

- THE VLCs ARE LEARNING HUBS BASED IN SEVEN FAO REGIONS/SUBREGIONS

2

- VLCs PROVIDE BROAD AND QUALITY VIRTUAL TRAINING TO PROFESSIONALS AROUND THE WORLD
- TRAININGS SUPPORT ONE HEALTH CAPACITY DEVELOPMENT, THE AGENDA 2030 AND THE SUSTAINABLE DEVELOPMENT GOALS (SDGS)

3

- VLCs TRAIN LARGER AUDIENCES AT LOW COST
- REACH PEOPLE IN REMOTE LOCATIONS
- PROVIDE MOBILE FIRST SOLUTIONS



Thank you!

www.fao.org/antimicrobial-resistance
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Protecting people, animals, and the environment every day