FAO Antimicrobial Resistance (AMR) Capacity Building Approach and Activities

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Outline

1. FAO mandate/role and the importance of the conference to FAO;

2. Global Food and Agriculture Trends;

3. FAO Capacity development framework and AMR capacity development pillars;

4. FAO AMR Capacity development Initiatives
FAO mandate

- 190 Member nations + 1 Member Organization (EU)
- defeat hunger, raise levels of nutrition;
- a source of knowledge and information – ‘turning knowledge into action’
- modernization/improvement of agriculture, forestry and fisheries, and natural resources management;
- ensure food and nutrition security for all.

“Food security exists when all people, at all times, have physical, social and economic access to sufficient, safe and nutritious food” [FAO World Food Summit, 1996]

Food Safety is key to health and nutrition = the ultimate goals of Food Security
Why prudent use of Antimicrobials & AMR matter to FAO

1. Antimicrobial drugs are important resources for both human and animal health;

2. Animal health is critical for the livestock sector, re;
   - Household nutrition and food security;
   - Household income esp. for livestock dependant communities;
   - Economic growth;
   - Global food security.

3. Public health: emergence and spread of AMR;

4. Trade: product rejection (residues) undermines market access; compliance with WTO/SPS Agreement;

5. Prudent and responsible use antimicrobials is critical for food security, incomes and economic development.
The Global Food and Agriculture Contexts and Trends

- potential implications for antimicrobial usage and AMR
- underline the need for responsible and prudent usage
Population growth

Trends in Global Population


Total

Billions

8
7
6
5
4
3
2
1
0
1950 55 60 65 70 75 80 85 90 95 2000 05 10 15

Source: US Bureau of the Census

70 billion by 2015
90 billion by 2050
Accelerating Urbanization

- Rising income,
- Changing food consumption patterns;

Trends in meat production by region

Meat Production – Developing & Middle income Regions

![Graph showing trends in meat production by region](image-url)
Changing consumption patterns

Per capita consumption of major food items in developing countries – kg/capita/year; Index numbers: 1961~
Trade in poultry and poultry products

Source: GIRA, 2004
• Accelerating world population growth will drive increased demand for protein based foods;
• AMU will grow in tandem (appropriate and inappropriate use);
• Need to narrow the gap between developed and developing countries;
• **Capacity development** has an important role in safeguarding availability and efficacy of AM to ensure, so they can continue to support animal production;
The Three Dimensions of CD

To ensure sustainability, CD takes place across all dimensions in an interdependent manner.

FAO capacity Development Strategy

- Policies
- Institutions
- Individual capacities
FAO’s AMR Capacity Development Pillars

1. **Policies**
   - Support for development and implementation of policies that create the enabling environment for AMR prevention and control and prudent use of antimicrobials in animal production and human medicine.

2. **Support for Institutional capacity development:**
   - Strengthening of institutional framework and arrangements;
   - Enhance institutional capacities e.g. labs for generation of AMR data, of AMR surveillance and AM usage monitoring; and data sharing between sectors;

3. **Support Technical Capacity development:** AMR Detection, surveillance, AMU Monitoring,

4. **Support/advice to value chain operators and stakeholders**
   - Good animal husbandry & health practices, good hygienic practices.
FAO AMR Capacity Building Initiatives

- FAO/WHO-AGISAR joint AMR activities (Kenya, Cambodia, Vietnam, India and Nigeria);
- Laboratory capacity development initiatives;
- FAO laboratory and Epidemiology Networks;
- FAO continuing professional development (CPD) initiative;
- Support implementation of Codex guidelines and standards;
- FAO/OIE/WHO Tripartite Initiatives
**FAO/WHO-AGISAR collaboration on AMR**

- **Aim:** to support development of national capacities for AMR detection and surveillance; and antimicrobial use monitoring in the poultry, beef, pig and aquaculture value chains

- **Key aspects:**
  - Priority enteric pathogens (*Salmonella spp*, *Campylobacter spp*, *E. coli* and *Enterococcus spp*) detection/quantification and determine the antimicrobial susceptibility patterns of these foodborne pathogens to commonly available classes of antimicrobials;
  - to identify critical points where prevention and control measures can best be applied;
  - support policy development and implementation;
  - Support institutional arrangements (including collaboration between human, animal health and environment sectors) and;
  - to engage with value chain actors to raise awareness and disseminate good practices.
Scope of typical FAO/WHO-AGISAR Project

**Sampling**
- Farms
  - Droppings
  - Animal feeds
  - Clover swabs
- Animal Slaughter Establishments
  - Carcass swabs/Neck skin
  - Rectal swabs
  - Lymph nodes
  - Effluent
  - Ingesta
- Retail
  - Retail meat
  - Neck skin - poultry
  - Carcass swabs
- Human stool

**Sample Handling/Processing**
- Transport
- Pre-enrichment
- Enrichment
- Isolation
- Antimicrobial susceptibility testing

**Questionnaires**
- Value Chain actors: Feed Producers, Farmers, Abattoir Operators, meat retailers, pharmaceuticals supplies, Agro-vet suppliers, etc
- Policy/Regulatory Agencies

**Value Chain Analysis**
- POULTRY
  - Types of production systems
  - Structure
  - Linkages
  - Inter-relationships, etc
- BEEF
- PIG

**Assessment of Policy, Institutional, Legislative Framework**
- Adequacy of existing food safety policies and legislation
- Identification of institutions, their roles and inter-relationships
- Identification of gaps and overlaps
- Guidance and recommendations

Antibiotic susceptibility Tests

Antibiotic Susceptibility Tests – Kirby-Bauer Disk diffusion Technique (Bauer et al. 1966)

Antibiotic class

Antibiotic

β-lactams
- Ampicillin
- Co-Amoxiclav
- Ceftriaxone
- Cefotacime

Tetracycline

Quinolones
- Nalidixic acid
- Ciprofloxacin

Aminoglycocides
- Gentamycin
- Streptomycin
- Kanamycin

Campylobacter spp. isolates – all tested for susceptibility to Erythromycin, tetracycline and ciprofloxacin (agar dilution method)

Main Outputs, outcomes and follow-up activities

- **Project reports** – AMR profiles for commonly available AM, AMU usage, contamination patterns and risk factors for FBP and AMR spread, and recommendations on prevention/control;

- **Workshops** – *Policy workshops* – issues, implications, options & recommendations;
  - **Stakeholders workshops** – risk factors for AMR development and spread & practical prevention and control measures.
REPORT ON THE OFFICIAL LAUNCH OF TASK FORCE TO SPEARHEAD ACTIVITIES TO ADDRESS THE DEVELOPMENT OF ANTIMICROBIAL RESISTANCE IN THE MEAT VALUE CHAIN.

VENUE: SAROVA PANAFRIC HOTEL, NAIROBI, KENYA

October 13, 2012
Compiled by: Dr. Catherine Kunyanga

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MINUTES OF ANTIMICROBIAL RESISTANCE (AMR) MEETING HELD ON 29TH NOVEMBER 2012 AT THE DEPARTMENT OF VETERINARY SERVICES (DVS) BOARDROOM

In attendance

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Absent with apology

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<td>Mr. Kilonzo Robert</td>
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Agenda

1. Streamlining the objectives of the task force
2. Review terms of reference (TOR)
3. Formation of possible working groups
4. Develop a work plan and schedule of meetings
5. A.O.B.
Guidance for value chain operators and stakeholders

4 million viewers

Laboratory capacity development

- **Ongoing activities:** Initiated in Cambodia (NVRLI), Uganda (NADDEC);
  - Equipment and supplies
  - Training
  - Pilot AMR studies

- **Future direction** – Laboratory CD based on existing FAO capacity development support for regional laboratory and epidemiology networks.
Capacity development and training packages & tools to support member countries to implement the Codex guidelines.
FAO Continuing professional development (CPD) Initiative

- To enhance the knowledge, skills, and overall competencies of veterinarians, veterinary para-professionals and food safety specialists

- **UNIT/STREAM 5 - PREVENTION/CONTROL OF VETERINARY INPUTS, RESIDUES & ANTIMICROBIAL RESISTANCE (AMR) –**
  - 6 Modules developed (in draft form)
  - Peer review to follow;
  - Implementation.
FAO/OIE/WHO Tripartite

- FAO/OIE/WHO Tripartite Executive Coordinating meeting (6 – 7 February 2013) – agreement on development of a joint action plan on AMR and implementation of joint capacity development initiatives, taking advantage of:
  - OIE Focal Points training;
  - WHO- GFN capacity development activities;
  - FAO regional laboratory initiative.
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THANK YOU