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World Health Organization

Towards a One Health approach:

AMR surveillance initiatives in the animal health sector in Asia

Mary Joy Gordoncillo

FAO Regional Office for Asia and the Pacific

Food and Agriculture Organization of the United Nations

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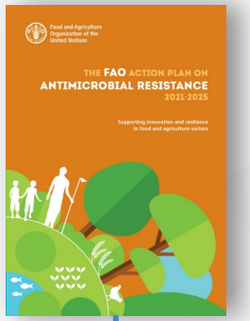
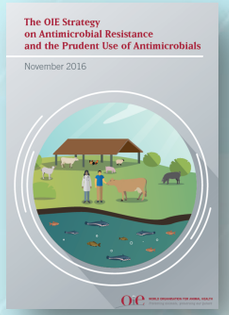


FAO Action Plan

Objective 2:
Strengthen the surveillance and research to support evidence-based decisions



OIE Strategy

Objective 2:
Strengthen the knowledge through surveillance and research

GLOBAL ACTION PLAN ON AMR

Objective 2:
Strengthen the knowledge and evidence base through surveillance and research

AMU

AMR

AMR/AMC

EVIDENCE-BASED ONE HEALTH DECISIONS, INTERVENTIONS, INITIATIVES

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Principle #1: Strengthened food and agriculture sector is an essential foundation for AMR surveillance

As a recognized complex issue, AMR is best addressed with a well-covered and well-linked force from all relevant disciplines – a One Health approach.

SPECIFIC ISSUES AND CONCERNS

STRENGTHENED
CAPACITIES ON SURVERILLANCE

ADDRESS SHARED ISSUES AND CONCERNS

STRENGTHENED
COORDINATION MECHANISMS

SPECIFIC ISSUES AND CONCERNS

STRENGTHENED
CAPACITIES ON SURVERILLANCE

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Principle #1: Strengthened food and agriculture sector is an essential foundation for AMR surveillance

PROGRESSIVE IMPROVEMENT AND SUSTAINABILITY

- *Post-ATLASS planning*
- *AMR Surveillance Capacity Enhancement Drive (ASCEnD)*

IMPROVEMENT OF TOOLS FOR AMR SURVEILLANCE IN FOOD & AGRICULTURE

- *Regional AMR surveillance guidelines*
- *Surveillance planning template*
- *Regionally-customized Sensititre plates*
- *Tools for improving AMR data management*

ESTABLISHING BROADER COOR-DINATION AND PARTNERSHIP

- *FAO-OIE Flagship initiatives*
- *Regional Consultation platforms*

SYSTEMATIC ASSESSMENT OF AMR SURVEILLANCE SYSTEMS (ATLASS)

- *15 countries in Asia*
- *31 national AMR laboratories a*

SETTING UP NETWORKS OF EXPERTISE ON AMR IN AGRICULTURE

- *AMR TAG (SEA and SA)*
- *Technical Working Group*
- *FAO Reference Center for AMR*

PROGRESSIVE STRENGTHENING OF NATIONAL AMR LABORATORIES

- *Regional laboratory trainings (SEA and SA)*
- *roficiency testing (SEA)*
- *Advanced training*

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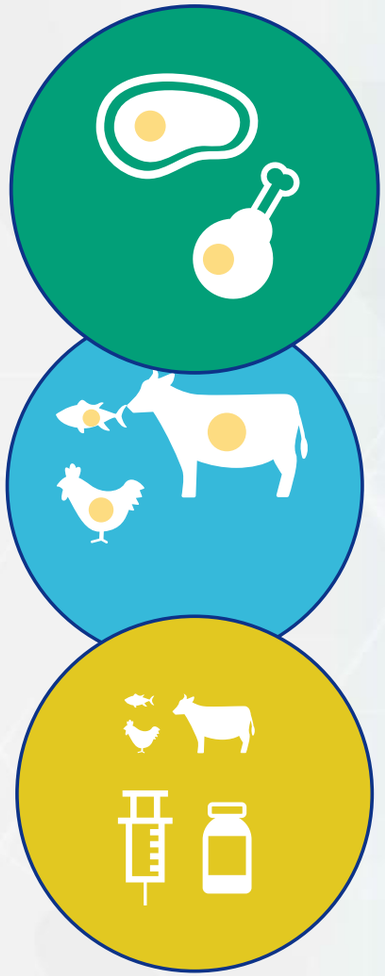
Principle #2: Food and agriculture has various areas of accountability in a OH approach to AMR



1. AMR monitoring and surveillance in bacteria from ***healthy food animals and their products***
2. Monitoring ***of antimicrobial residues*** from food animals and their products
3. AMR monitoring and surveillance in ***bacterial pathogens from diseased livestock***
4. AMR monitoring and surveillance in ***bacterial pathogens from aquatic animals***
5. Monitoring ***antimicrobial use at the farm level***
6. ***Knowledge, attitude, and practices*** in the use of antimicrobials in food and agriculture

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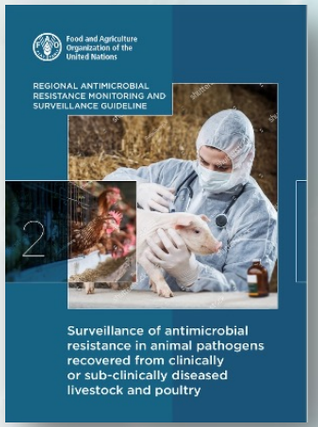
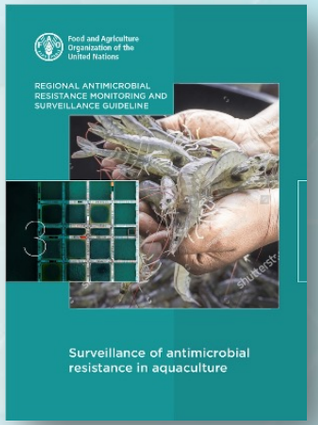
Principle #2: Food and agriculture has various areas of accountability in a OH approach to AMR

→ FAO RAP is assisting food and agriculture sectors in the region in the design and implementation of each of these areas through the development of a series of guidelines and other supplementary tools

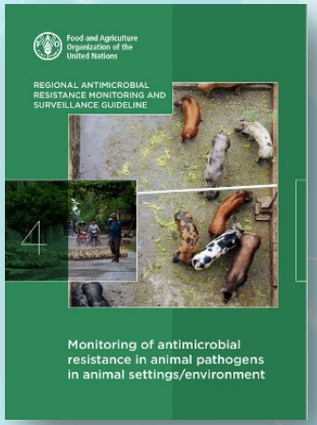
Volume 1:
AMR surveillance in bacteria from ***healthy animals***



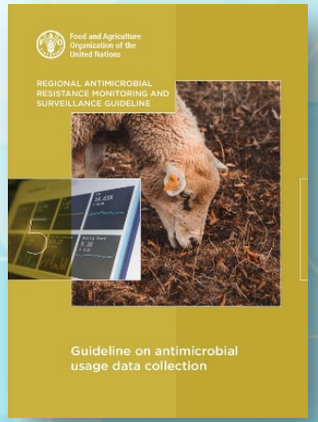
Volume 2:
AMR surveillance in **livestock pathogens**



Volume 3:
AMR surveillance in ***aquaculture***



Volume 4: AMR monitoring in ***animal environment***



Volume 5:
(jointly with OIE) Guideline on ***AMU data collection at the farm level***

(Added in the series)

Volume 6:
Guideline on monitoring ***Antimicrobial residues from food***

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Principle #3: Countries in the region are at different stages of capacities

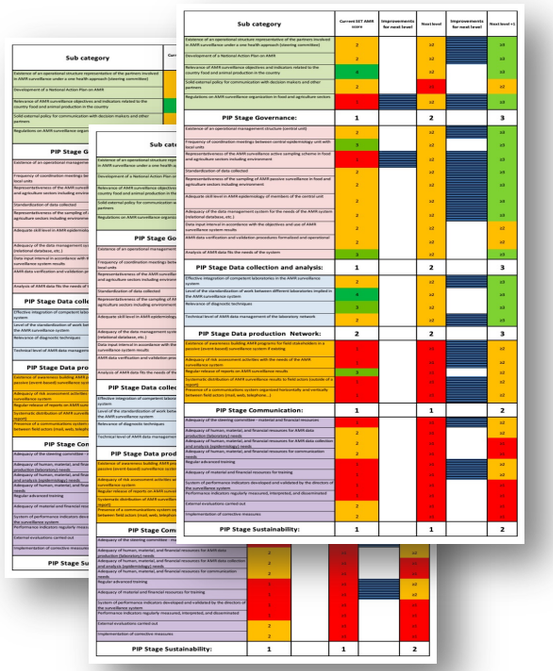
Governance

Data collection and analysis (epidemiology unit)

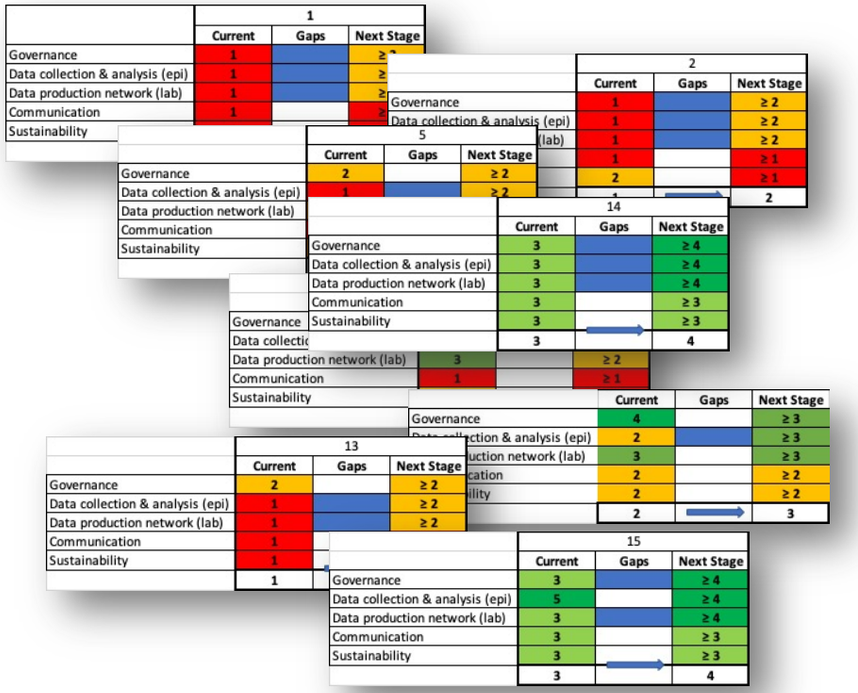
Data production network (laboratories)

Communication

Sustainability



Assessment Tool for Laboratory and AMR Surveillance Systems (ATLASS)



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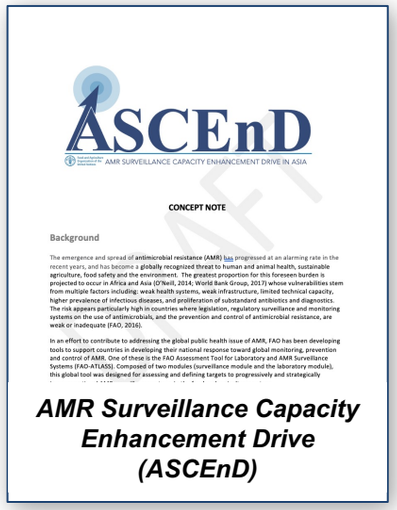

ASCEnD

AMR SURVEILLANCE CAPACITY ENHANCEMENT DRIVE IN ASIA

CONCEPT NOTE

Background

The emergence and spread of antimicrobial resistance (AMR) has progressed at an alarming rate in the recent years, and has become a globally recognized threat to human and animal health, sustainable agriculture, food safety and the environment. The greatest proportion for this foreseen burden is projected to occur in Africa and Asia (O'Neill, 2014; World Bank Group, 2017) whose vulnerabilities stem from multiple factors including: weak health systems, weak infrastructure, limited technical capacity, higher prevalence of infectious diseases, and proliferation of substandard antibiotics and diagnostics. The risk appears particularly high in countries where legislation, regulatory surveillance and monitoring systems on the use of antimicrobials, and the prevention and control of antimicrobial resistance, are weak or inadequate (FAO, 2016).

In an effort to contribute to addressing the global public health issue of AMR, FAO has been developing tools to support countries in developing their national response toward global monitoring, prevention and control of AMR. One of these is the FAO Assessment Tool for Laboratory and AMR Surveillance Systems (FAO-ATLASS). Composed of two modules (surveillance module and the laboratory module), this global tool was designed for assessing and defining targets in progressively and strategically

AMR Surveillance Capacity Enhancement Drive (ASCEnD)

CONVENIENT ENTRY POINTS FOR INITIATION

(Note: This is mainly to trigger surveillance initiatives; findings should not be extended to the population and must be interpreted with caution)

AMR data are obtained from bacteria from the most accessible population of animals.

AMR data are obtained from a convenient number of samples and based on accessibility to these animals. *Data obtained cannot be extended to the population of interest and should be limited to the samples tested. Information may be used as basis for planning further expanded surveillance plan*

Starts with targeting *E.coli*, considering the available resources and capacity; *If there is an operational foodborne zoonoses surveillance program (e.g., Campylobacter, Salmonella) consider their inclusion but give particular attention to context from which and how the isolates were obtained when drawing conclusions.*

Qualitative data are obtained (i.e., through disk diffusion methods) with or without consideration for international standards in the methodology. *Value and validity of resulting data may be compromised and will have limited use for an AMR surveillance program.*

A few select antimicrobials are included in the panel. The appropriate highest priority critically important antimicrobials are preferred.

TARGETS FOR REGIONAL HARMONIZATION

These may be integrated in the planning and design at the outset, or progressively over time as the country progresses in its routine AMR surveillance.

TARGET POPULATION

AMR data from bacteria obtained from the known main food-producing animal species and contributing to the most consumption yield in the country is prioritized.

SAMPLING STRATEGY

Takes into account both the epidemiologic (e.g., representativeness) and biologic (e.g., type of sample, timing) considerations, as well as the feasibility of logistical support for implementation.

TARGET BACTERIA

Both zoonotic (*Salmonella* spp. and *Campylobacter* spp.) and commensal (*E. coli* and *Enterococcus* spp.) bacteria are included in the routine AMR monitoring and surveillance.

TYPE OF DATA GENERATED

Minimum inhibitory Concentration (MIC) data are generated, reported, and stored, following international standard methods.

PANEL OF ANTIMICROBIALS

The core panel of antimicrobials monitored is harmonized with that of the region.

REGIONALLY HARMONIZED AMR SURVEILLANCE

Principle #4: There are also cross-cutting gaps shared by countries in the region

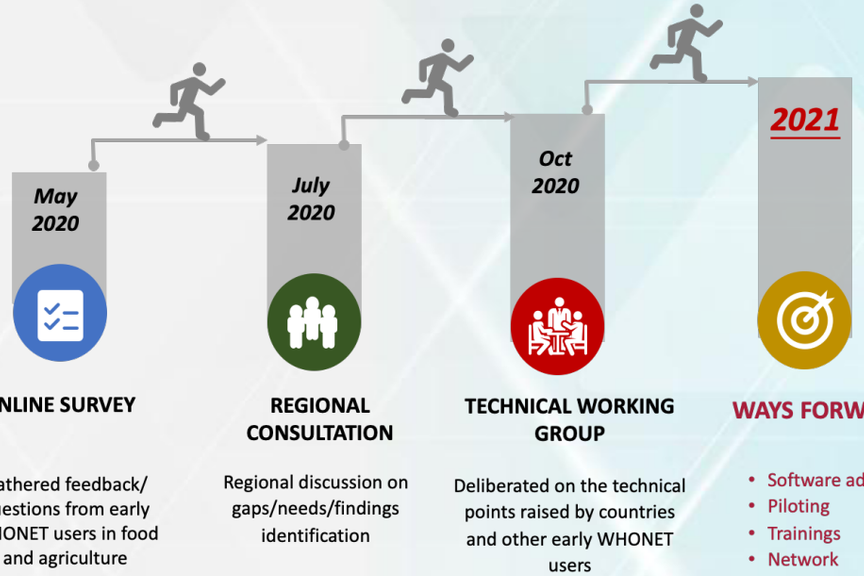
COUNTRY No.	1	2	3	4	5	6	7	8	9	10	11	12	13	14
Governance	1	1	1	1	2	3	4	1	1	1	2	1	2	3
Data collection & analysis (epi)	1	1	1	1	1	1	2	1	1	1	1	1	1	3
Data production network (lab)	1	1	1	1	2	3	3	1	1	2	2	1	1	3
Communication	1	1	1	1	1	1	2	1	1	1	1	1	1	3
Sustainability	1	2	1	1	2	2	2	1	1	1	1	1	1	3
PIP Stage	1	1	1	1	1	1	2	1	1	1	1	1	1	3

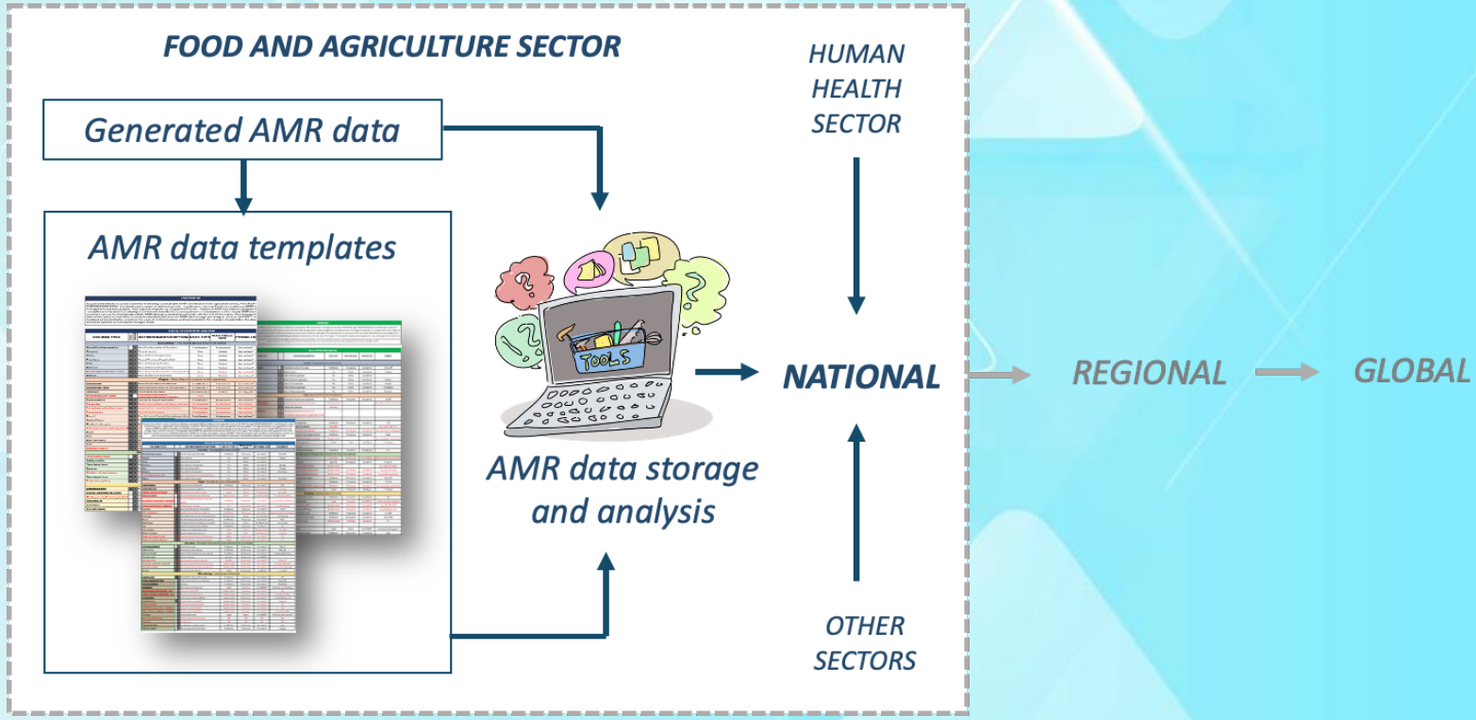
ATLASS Summary:

- Most common gap is on AMR data collection and analysis
- Improvements in this area are critical gaps for 14/14 countries to move to their next PIP stage

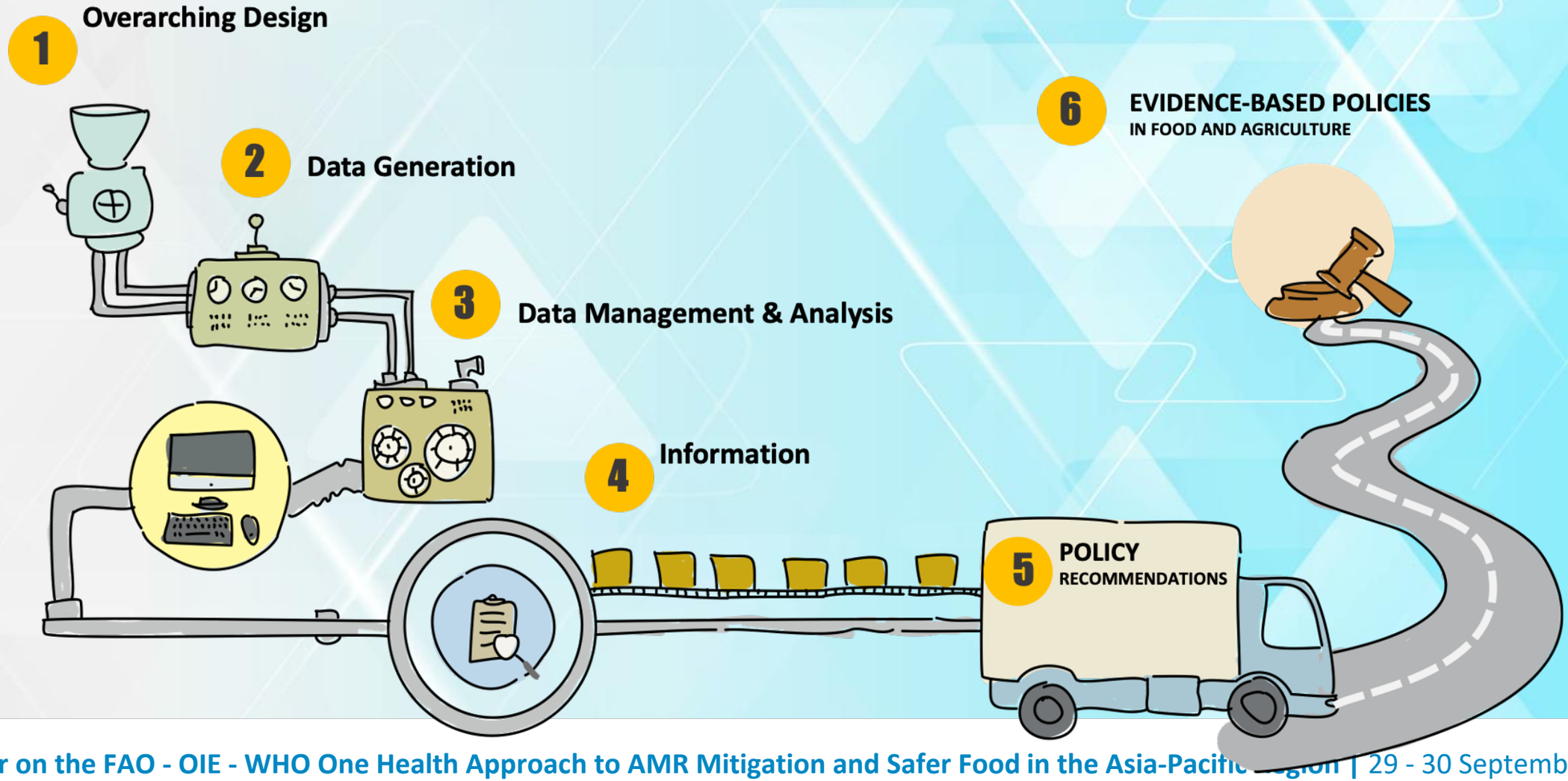
Principle #4: There are also cross-cutting gaps shared by countries in the region

→ Shared gaps are among regional priorities for FAO RAP
→ Viewed as best addressed collectively by the region





Principle #5: It is important to begin with the end in mind



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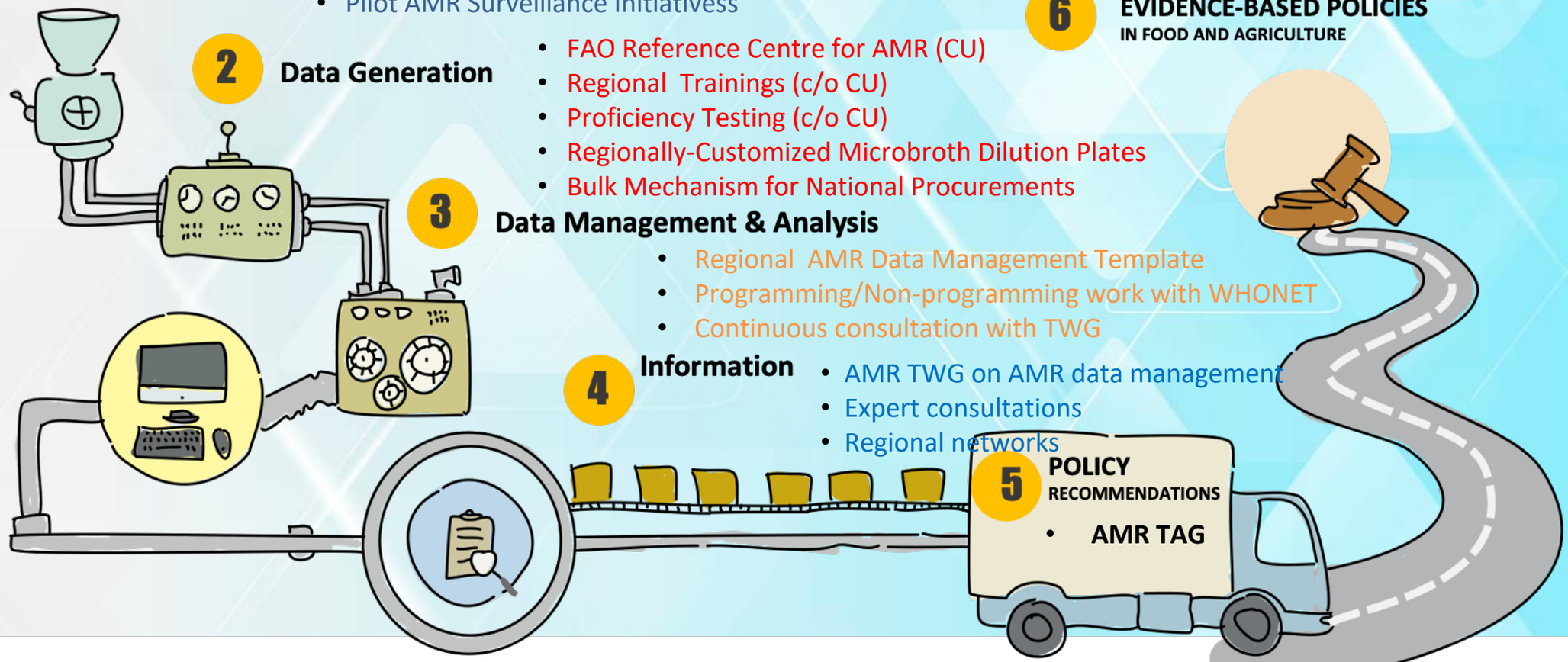

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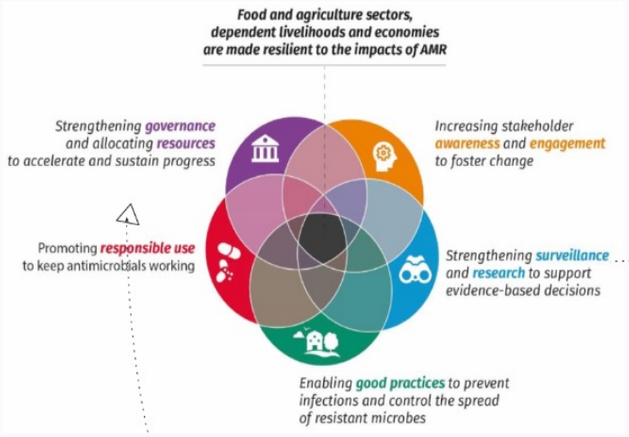
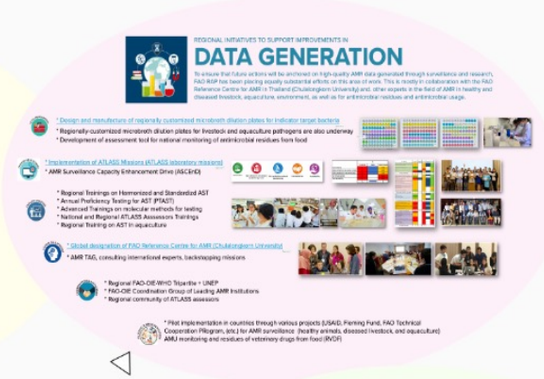
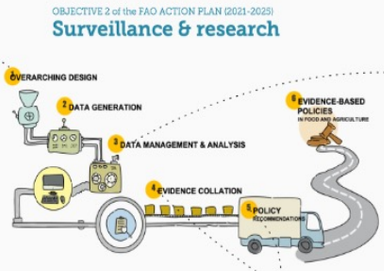
USAID FROM THE AMERICAN PEOPLE

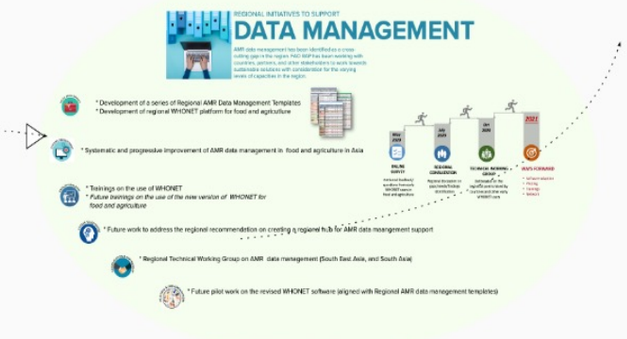
FAO INITIATIVES TO TRANSFORM

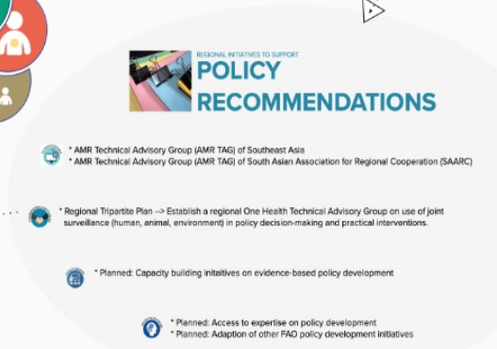
AMR SURVEILLANCE IN FOOD AND AGRICULTURE IN ASIA

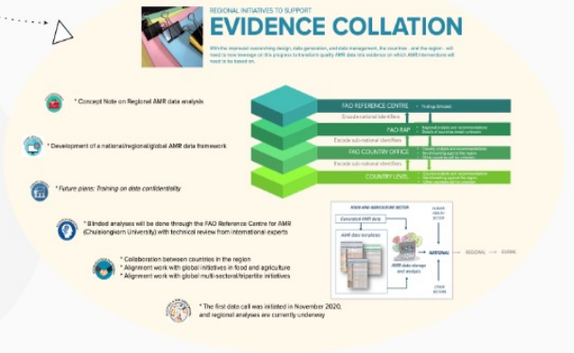


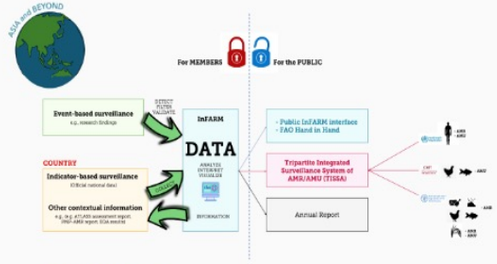












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https://app.mural.co/t/amr3565/m/amr3565/1623545871330/6615799e905b31b857742ff446723c042b08bd6c?sender=mgordoncillo1122

Other AMR surveillance tools and resources of FAO: http://www.fao.org/antimicrobial-resistance/key-sectors/surveillance-and-monitoring/en/

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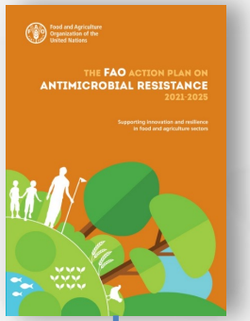

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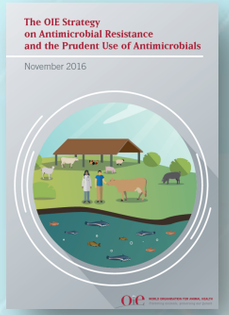

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AMR

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EVIDENCE-BASED ONE HEALTH DECISIONS, INTERVENTIONS, INITIATIVES

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World Health Organization

Thank you!

Antibiotics
Antivirals
Antifungals
Antiparasitics