Catalyzing the Potential of Regional Action to Combat AMR

Critical Insights on Data Sharing and Use of One Health Data in Africa
Context and Rationale

• Why is this a critical time point for regional action and to develop a framework?

• As surveillance improves, the solution and plan becomes more tailored

• In many countries, initial plans to combat AMR have been established (NAPs)

• Initial global plans and initiatives have set AMR as a priority, established guidance for NAPs, increased awareness and data quality, and more.

• Now that national level surveillance systems are increasing in quality, we are now at a time point where the role and utility of the regional level needs to be established

• Coordinated approaches and policies, regulations, and behavior change across countries is the only way for AMR to be controlled

• Each region operates in its own unique manner, internally intertwined through their economic and trade, animal husbandry practices, and health practices.

• Therefore, the role and utility of the regional level in control of AMR needs to be tailored to each region to maximize its impact.

• Today and over the next few days, we want to explore what the role and framework of the regional level, based on the insights from experts in the countries, at the regional level, and global experts.
Assessment Goal

• Is to gather the necessary information to establish or enhance regional data sharing and further the establishment of a regional One Health framework for AMR and AMU/C.

Assessment Objectives

• Depict current AMR and AMU/C data sharing pathways and networks at the national, regional and global levels
• Assess the status of surveillance systems and the availability of human and animal health AMR and AMU/C data on the national and regional levels
• Identify information gaps at the national and regional level, where regional level activities could potentially fulfill such gaps and impediments.
• Identify stakeholders’ perceived benefits and expectations of a regional framework and data foundation
• Identify barriers and facilitators to sharing of data into a regional data foundation
• Gather insights on trusted organizations, both technically and in leadership
• Provide conclusions drawn from the information above to inform the regional framework and data foundation
Frameworks drawn upon and reviewed in building building one health data sharing assessment framework:

Overview of Methods

**KII Global Level**

- **KII - Regional Level (Africa)**
  - Malawi, Uganda, Tanzania, Zambia, Zimbabwe, Kenya, Eswatini, Nigeria, Ghana, Senegal, Sierra Leone

- **KII - Regional Level (S. Asia)**
  - Nepal, Bangladesh, India, Pakistan, Bhutan, Sri Lanka

- **KII - Regional Level (S.E. Asia)**
  - Timor Leste, Vietnam, Lao PDR, Myanmar, Indonesia, Papua, New Guinea

**KII - National Level**

- **KII - National Level (Malawi)**
  - Malawi Report

- **KII - National Level (Nepal)**
  - Nepal Report

- **KII - National Level (Timor Leste)**
  - Timor Leste Report

- **KII - National Level (Uganda)**
  - Uganda Report

- **KII - National Level (Bangladesh)**
  - Bangladesh Report

- **KII - National Level (Vietnam)**
  - Vietnam Report
National KII Participants - Malawi (n=15) and Uganda (n=10)
• Government administrations of animal and human health
• Leaders of public health and veterinary laboratories
• Experts from WHO and FAO local offices

Global and Regional KII Participants (n=24)
• WHO-HQ, WHO-GLASS, and regional offices of WHO with backgrounds in human health
• FAO-HQ and OIE-HQ and other regional offices of FAO and OIE with backgrounds in animal health, aquaculture and fisheries and plant health, UNEP
• Regional organizations working on AMR (e.g., Africa CDC, ASLM, ReACT)
• Multinational pharmaceutical companies (e.g., Pfizer and Health for Animals)

Questionnaire Participants (Human health n=54, Animal Health=48)
• 11 countries represented
Findings were summarized in national level reports and a questionnaire was developed to validate the findings

A regional report was developed (by a cross-sectoral research team) to guide the regional framework
Existing (& future) networks in Africa

Key Findings

Global level

Regional level

National data

AMC/U  AMR  AMC/U  AMR  AMC/U  AMR
Humans  Animals  Food  Plants & crops  Environment

Existing (& future) networks in South Asia

Key Findings

AMC/U  AMR  AMC/U  AMR  AMC/U  AMR
Humans  Animals  Food  Plants & crops  Environment

Global level
Key Findings

Existing networks in Africa

- **MAAP**
  - UKAiD-Fleming F.

- **SPIDAAR**
  - WT-Pfizer

14 Af.

- AMC/U
- AMR

- Existing networks in South Asia

- Existing networks in Africa

**Global level**

**Regional level**

**National data**

- Humans
- Animals
- Food
- Plants & crops
- Environment
Existing networks in Africa

Key Findings

- GLASS
  - AMC
    - WHO
  - AMR
- EGASP
  - WHO
- IQVIA
  - MIDAS
- GRAM
  - B&M Gate F.
- CDDEP
- MAAP
  - UKAid-Fleming F.
- SPIDAAR
  - WT-Pfizer

Global level

Global AMC/U collection
- OIE

Regional level

Existing (& future) networks in South-Asia

Key Findings

Existing networks in Africa

AMC/U

AMR

AMC/U

AMR

AMC/U

AMR

AMC/U

AMR

Humans

Animals

Food

Plants & crops

Environment

19
6 Af.

66
8 Af.

198

75

14
Af.

23 Af.

4 Af.

> 90

152
44 Af.

107

107

14
Af.

23 Af.

6 Af.

4 Af.
Future networks in Africa

**Key Findings**

- **Global AMR/C/U platform**
  - Food and agriculture
  - FAO - HQ

- **Global level**

- **Regional level**
  - AMR data collection
    - FAO - AFRO

- **National data**

- **AMRSNET**
  - AFRICA-CDC

- **AU/RECs**
  - EAC, SADC, ECOWAS...

- **Key Findings**

- **Future networks in Africa**
  - AU/RECs
    - EAC, SADC, ECOWAS...
  - AMRSNET
    - AFRICA-CDC

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**Humans**

**Animals**

**Food**

**Plants & crops**

**Environment**

**AMR**

**AMC/U**
Utility of generated feedback in informing decision making

Key Findings

DATA ANALYSIS/GENERATION OF INFO.

DISSEMINATION OF INFO.

DATA COLLATION

INFO. USE FOR REGIONAL:
1) SURVEILLANCE
2) ADVOCACY & AWARENESS
3) POLICY, REGULATION & PLANNING

Translation into action
Utility of generated feedback in informing decision making

Key Findings

**Regional data sharing**

- **DISSEMINATION OF INFO.**
- **DATA ANALYSIS/ GENERATION OF INFO.**
- **DATA COLLATION**

**INFO. USE FOR NATIONAL:**
1) SURVEILLANCE
2) ADVOCACY & AWARENESS
3) POLICY, REGULATION & PLANNING

**INFO. USE FOR REGIONAL:**
1) SURVEILLANCE
2) ADVOCACY & AWARENESS
3) POLICY, REGULATION & PLANNING

**ACTIONS**
- Translation into action
Utility of generated feedback in informing decision making

Key Findings

DISSEMINATION OF INFO.
DATA ANALYSIS/GENERATION OF INFO.
DATA COLLATION

Regional data sharing

Feedback

INFO. USE FOR REGIONAL:
1) SURVEILLANCE
2) ADVOCACY & AWARENESS
3) POLICY, REGULATION & PLANNING

INFO. USE FOR NATIONAL:
1) SURVEILLANCE
2) ADVOCACY & AWARENESS
3) POLICY, REGULATION & PLANNING

Regional data sharing

DATA QUALITY IMPROVEMENT

Regional data sharing

Information Technical support Guidance ...

Feedback

Technical support Guidance ...

Regional data sharing

Data quality improvement

Regional data sharing

Regional data sharing

Regional data sharing

Regional data sharing

Regional data sharing

Regional data sharing
Utility of generated feedback in informing decision making

Key Findings

If data were submitted to a regional or global program were feedback and technical assistance provided by the program coordinators?

**AMR data**

- Eswatini
- Ghana
- Kenya
- Malawi
- Nigeria
- Senegal
- Sierra Leone
- Tanzania
- Uganda
- Zambia
- Zimbabwe

**AMC/U data**

- Eswatini
- Ghana
- Kenya
- Malawi
- Nigeria
- Senegal
- Sierra Leone
- Tanzania
- Uganda
- Zambia
- Zimbabwe

1: I am NOT aware of any formal feedback or report received AND NO technical assistance was provided to improve data quality or analysis capacities
2: I am NOT aware of any formal feedback or report received BUT technical assistance was provided to strengthen data quality or analysis capacities
3: Feedback was provided in the form of a report or other formal AND technical assistance was provided to strengthen data quality or analysis capacities
“It challenges you, as a country, to see the huge gaps you have in the data collection, comparing to other countries. “How could we improve?” For me that is the biggest benefit.”
(OIE AMC/U, national stakeholder, AH)

“The aim is awareness at the beginning. Because it’s clear that the data collected are not of very high quality. But the most important thing is that countries start to do something. To start and to progress.”
(OIE AMC/U, global stakeholder, AH)

“To be sincere, we don’t get any feedback from GLASS team, that’s why we are struggling a lot. It’s pushing countries away. It’s really a challenge to send data. Many countries in Africa are not submitting data.”
(national stakeholder, HH)

“I would suggest to countries to be more demanding towards WHO”
(global stakeholder, HH)
Main uses of the generated feedback at national level? (TOP 3)

- Enhancing existing surveillance system
- Improvement in data quality
- Advocacy and awareness

Animal sector (n=12) vs. Human sector (n=13)
Critical gaps where a regional hub would be advantageous

**Key Findings**

**Regional data sharing**

**INFO. USE FOR NATIONAL:**
1) SURVEILLANCE
2) ADVOCACY & AWARENESS
3) POLICY, REGULATION & PLANNING

**INFO. USE FOR REGIONAL:**
1) SURVEILLANCE
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**DISSEMINATION OF INFO.**

**DATA ANALYSIS/GENERATION OF INFO.**

**DATA COLLECTION**

**AMR/C/U DATA COLLECTION & COLLATION**

Translation into action
Critical gaps where a regional hub would be advantageous

Key Findings

DISSEMINATION OF INFO.

DATA ANALYSIS/ INFO. GENERATION

DATA COLLATION

ACTIONs
INFO. USE FOR REGIONAL:
1) SURVEILLANCE
2) ADVOCACY & AWARENESS
3) POLICY, REGULATION & PLANNING

INFO. USE FOR NATIONAL:
1) SURVEILLANCE
2) ADVOCACY & AWARENESS
3) POLICY, REGULATION & PLANNING

Regional data sharing

National data sharing

Translation into action
Critical gaps where a regional hub would be advantageous

**Key Findings**

**AMR data**

*Human pathogens*

*Animal pathogens*

*Food-borne/commensal Healthy animals/foods*

- **Level 1**: Data not systematically collected
- **Level 2**: Data systematically collected
- **Level 3**: Data analyzed
- **Level 4**: Findings shared routinely to decision makers
- **Level 5**: Information routinely used by decision makers

Country median
Critical gaps where a regional hub would be advantageous

Key Findings

- AMR data
  - Human pathogens
  - Animal pathogens
  - Food-borne/commensal

<table>
<thead>
<tr>
<th>Region median</th>
<th>Data not systematically collected</th>
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</thead>
<tbody>
<tr>
<td>Africa = 2</td>
<td>South-Asia = 3</td>
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<tr>
<td>Africa = 1</td>
<td>South-Asia = 2</td>
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<td>South-Asia = 1</td>
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</tr>
</tbody>
</table>

Level 1
- 1 country

Level 2
- South-Asia = 2

Level 3
- Africa = 1
  - South-Asia = 1

Level 4
- South-Asia = 2

Level 5
- South-Asia = 3
Critical gaps where a regional hub would be advantageous

Key Findings

- **Human AMC data**
  - AM sold/purchased/imported
  - Data not systematically collected
  - Data analyzed
  - Info. shared routinely to decision makers
  - Info. routinely used by decision makers

<table>
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- **Animal AMC data**
  - AM sold/purchased/imported
  - Data not systematically collected
  - Data analyzed
  - Info. shared routinely to decision makers
  - Info. routinely used by decision makers

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*Level 1, 2, 3, 4, 5 represent the level of data collection and utilization.*
Critical gaps where a regional hub would be advantageous

Key Findings

- **Data not systematically collected**: Animal data
- **Data systematically collected**: AMC data
- **Data analyzed**: AMC data
- **Info. shared routinely to decision makers**: Human data
- **Info. routinely used by decision makers**: Human data

**Region median**:

- **Africa = 1.5**
- **South-Asia = 1**
- **Africa = 2**
- **South-Asia = 1.5**
- **Africa = 2**
- **South-Asia = 1**
- **Africa = 1**
- **South-Asia = 1**

**Levels**:

- Level 1
- Level 2
- Level 3
- Level 4
- Level 5

**AMC data**
- AM sold/purchased/imported

**AMU data**
- Hospital/pharmacy/farm-level
Critical gaps where a regional hub would be advantageous

Data Collection

AMR

**Low quality and representativeness (AMR)**
- Low human capacity (lab/management)
- Network cluster around large cities
- Private lab. not yet included
- Conflicting guidelines (variable/metadata)
- Limited nb of pathogens collected

**Low quantity, quality and representativeness (AMR)**
- Low human capacity, lack of QA, SOPs, equipment
- Lack of adequate IT systems / time to digitize the data
- Weak network (mainly central level lab.)
- Only few passive data for terrestrial animal’s pathogens
- Prioritization of pathogens (reg. FAO guideline in process)
Critical gaps where a regional hub would be advantageous

**Key Findings**

**AMR**
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**AMC/U**
- First basic national estimates (AMC)
  - Only based on basic sources (import, sales), no /few species-specific farm-level data (AMU)
  - Lack of coordination/cooperation with MOH and private sector (no mandatory reporting)
  - Weak AM regulation/enforcement
  - Paper-based records
  - Lack of dedicated staff/turn-over

**Insufficient quantity of AMC data**
- Lack of cooperation/private sector (no mandatory reporting)
- Some AMU data collected from point prevalence surveys
  - Paper-based data (health facilities/pharmacy records)
  - AMU data not linked to clinical or microbiology data
Critical gaps where a regional hub would be advantageous

Key Findings

Data Collection

AMR

- Lack of standards and guidelines...

No systematic data collection

AMC/U

First basic national estimates (AMC)

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Critical gaps where a regional hub would be advantageous

Key Findings

1. DATA COLLECTION & COLLATION

Ad hoc (or no) data sharing between sectors

Lack of formal process, harmonized IT system/platform, dedicated budget ...

Reported by 81% of stakeholders (n=97)
Critical gaps where a regional hub would be advantageous

Key Findings

Data partially and poorly analyzed
- Lack of dedicated skilled human resources
- Lack of adequate IT and visualization tool

Lack of “integrated” analysis
- AMR/C/U associations
- Integration between sectors

Limited info. dissemination
- Unclear format/frequency/channels for dissemination to policy-M
- Inadequate “packaging” (policy briefs, visualization, economic arg.)

Generated info. rarely translated into action
- Inadequate capacities for policy-making
- Low “appetite” for AMR (low priority)
- Research data exist but are not used

Data analysis & generation of info.

Dissemination of info.

Use of info.

Lack of efficient mechanisms for timely actions
Critical gaps where a regional hub would be advantageous

Values and support of a regional network/hub?

In synergy with existing/future GLOBAL & REGIONAL initiatives

National capacity building
Quality and timeliness improvement
Progressive involvement of other sectors
Integrated surveillance

Generating regional evidence
Regional baselines for AMC/U & AMR trends
Emerging resistance in the region
AMR cross-border surveillance
“There is a huge gap in big data analysis. It is very important, the use of new technologies. We need to strengthen in countries: not only on a regional and global level. When you look at Africa, the people are highly educated here [PhDs, etc.]. So we should have the pool there”. (Regional stakeholder, AH)

“What is the key metadata we should focus on? I would like support with that.” (National stakeholder, HH)

“People are always talking about integrated surveillance... But how do you do this exactly? Nobody is focusing on preparing real guidance that is practically applicable in the field [...] then you need some capacity building.” (Global stakeholder, aquaculture)

“We are lacking cross border surveillance. It’s a way to learn from each other as neighbors, as we can assume we share similarities in terms of pathogens. There are things we can do to improve communication cross borders.” (National stakeholder, HH)
Critical gaps where a regional hub would be advantageous

Values and support of a regional network/hub?

Key Findings

Generating regional evidence
Regional baselines for AMC/U & AMR trends
Emerging resistance in the region
AMR cross-border surveillance

National capacity building
Quality and timeliness improvement
Progressive involvement of other sectors
Integrated surveillance

In synergy with existing/future
GLOBAL & REGIONAL initiatives

✔ Providing more useful and regular feedback, technical support
✔ Enhancing regional networking/exchange of best practices
✔ Providing facilitating IT tool (analysis, visualization, automated reports ...) that meet country needs
✔ Supporting “operationalization” of integrated analysis (regional guidance, pilot countries ...)

✔ Creating an official regional pathway for AMR/C/U data to struggle against high data fragmentation
✔ Convergence of all data sources (research, private sector etc.)
✔ Supporting efforts for regional harmonization and prioritization, filling the gap in regional guidance

SURVEILLANCE
Critical gaps where a regional hub would be advantageous

Values and support of a regional network/hub?

In synergy with existing/future GLOBAL & REGIONAL initiatives

Generating national evidence
To raise awareness
To strengthen investment case for AMR

Generating regional evidence
Critical gaps where a regional hub would be advantageous

Key Findings

In Africa it is vital to stress the economic case: why should we invest in this amongst every other health care issues? How do we make an economic case for investment? (Regional stakeholder, AH)

Advocacy & Awareness

“We are lacking cross border surveillance. It’s a way to learn from each other as neighbors, as we can assume we share similarities in terms of pathogens. There are things we can to do improve communication cross borders.” (National stakeholder, HH)

If we have evidence showing that AMR really an emerging policy issue in the plant sector, then we can convince member countries to take action on AMR. We expect that a regional program will provide support for these issues. (Global stakeholder, plant sector)

“There is insufficient information on AMR burden specifically. This gap makes resource allocation among policymakers difficult.” (Regional stakeholder, HH)

“It is important for us to look at what are the major drivers of AMR. We know that they are going to be underuse and overuse or misuse. So what are the driving factors to this? Then we start peeling off layers of data: is it education? Is it the infrastructure? Is it that there are no consumables? Is it because of challenges with access?” (Regional stakeholder, HH)
Values and support of a regional network/hub?

**Key Findings**

**Generating national evidence**
- To raise awareness
- To strengthen investment case for AMR

**Generating regional evidence**

- ✔ Supporting the evaluation of the economic burden of AMR
- ✔ Supporting the development of sociological approaches to understand the drivers of AMU
- ✔ Improving “data packaging” (tailored guidance on how to persuade strategic policy-makers...)

**In synergy with existing/future GLOBAL & REGIONAL initiatives**

- ✔ Supporting political buy-in with regional evidence (economic burden, AMR/U causal relationship...)
- ✔ Supporting awareness raising for AMR issue in environment and plant sectors (global knowledge gap)
- ✔ Facilitating “whole society” approach to AMR (civil society & media)
Critical gaps where a regional hub would be advantageous

Values and support of a regional network/hub?

In synergy with existing/future
GLOBAL & REGIONAL initiatives

Generating national evidence

Generating regional evidence
Critical gaps where a regional hub would be advantageous

**Key Findings**

You can easily say that there will be no drug sold unless you have a prescription. *This can’t work in pastoral areas of Africa. There isn’t qualified people to sell the drugs.*

(Regional stakeholder, AH)

**POLICY, GUIDELINE & REGULATION**

Not much work has been done to see the understanding of prescribers—clinicians, the understanding of pharmacists.”

(National stakeholder, HH)

The regional analysis should bring a multidisciplinary team [epidemiologist, microbiologist, economist, policy analyst …] that will look at the data and try to pull out the policy recommendations. That is what is lacking.”

(Regional stakeholder, research sector, Agri/AH)
Critical gaps where a regional hub would be advantageous

Values and support of a regional network/hub?

In synergy with existing/future GLOBAL & REGIONAL initiatives

Generating national evidence

- Supporting the establishment of treatment guidelines etc.
- Supporting the development of evidence-based policies enforceable in local context
- Supporting the evaluation of socio-economic impact of interventions

Generating regional evidence

- Conducting regional analyses that brings together a large set of experts (including economists etc.)
- To identify regional issues (AMR/U correlation between countries)
- Supporting the development of AMR regional strategies (including trade/export for animals and products ...) and regionalization of GAP
Countries' expectations for sharing AMR/C/U data

Key Findings

What could motivate you to submit AMR/U/C data to a regional network? TOP 5

- Support develop common AMR mitigation strategies at the regional level
- Help understand cross-border surveillance to monitor trends & emerging resistance across the…
- Provide useful and applicable feedback for enhancing country level decision
- Improve competencies in data analysis, interpretation and visualization
- Support enhancement of national capacities

Animal sector (n=46)
Human sector (n=58)
Major barriers & facilitators to sharing AMR/C/U data

Key Findings

**DISSEMINATION OF INFO.**

DATA ANALYSIS/ INFO. GENERATION

DATA COLLATION

**INFO. USE FOR NATIONAL:**
1) SURVEILLANCE
2) ADVOCACY & AWARENESS
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**INFO. USE FOR REGIONAL:**
1) SURVEILLANCE
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**ACTIONS**

Translation into action

Regional data sharing

National data sharing
Key Findings

Major barriers & facilitators to sharing AMR/C/U data

- Funding and sustainability
- Cross-sectoral coordination
- Current/previous network and ties
- Legal & ethical framework
- Data privacy & access
- Political will
- Trust
- Perceived risks
- Data availability, quality and form
- Data sharing processes
- Trained workforce
- Perceived benefits and expectations
Key Findings

Major barriers to sharing AMR/C/U data

What barriers do you foresee/experience to sharing AMR/C/U data at the regional level? TOP 5

Ownership right concern and/or potential for misuse of the data

Difficulties due to unclear/non-existent legal framework and authorization process

Lack of time and skills required to manage and provide the data to required standards

Absence of central database and adequate software

Low availability of data / insufficient quality and coverage of the data

Animal sector (n=46)

Human sector (n=58)
Major barriers & facilitators to sharing AMR/C/U data

Key Findings

- Quantity, quality & standardization enhanced through donor-funded programs
- Participation in GLASS, MAAP, SPIDAAR, OIE collection act as catalyst
- Low AMR data (quantity), quality, timeliness, format and structure, etc.
- Data scattered (+private, research data...)
- Insufficient IT resources, varied dataset structures, few automated processes
- Work duplication for reporting (many templates and systems)
- Insufficient workforce capacity with adequate skills, for data management and analysis
- AMR is a low priority, surveillance mostly partner driven, sustainability issue
- Future platforms, all using WHONET software
- Database improvement (online OIE AMC/U ...)
- Automated analyses
- Harmonization and streamlining in progress
- Tripartite and other entities improve workforce capacity and receptiveness for AMR issues

Strongly interconnected:

- Data availability, quality and form
  - Low AMR data (quantity), quality, timeliness, format and structure, etc.
  - Data scattered (+private, research data...)

- Data sharing processes
  - Insufficient IT resources, varied dataset structures, few automated processes
  - Work duplication for reporting (many templates and systems)

- Trained workforce
  - Insufficient workforce capacity with adequate skills, for data management and analysis

- Funding and sustainability
  - AMR is a low priority, surveillance mostly partner driven, sustainability issue
Major barriers & facilitators to sharing AMR/C/U data

Key Findings

« First of all, countries don’t want to share very scarce data (...). Then, what countries are fighting is duplication of work and multiplicity of reporting systems (...). Each agency come with its own format [AU, EAC, OIE ...].»

(Regional stakeholder, AH)

« The main issue for me with data sharing is quality. Countries need to be sure that they are not sharing data that is incorrect. »

(Regional stakeholder, AH)

“The data storage and IT infrastructure is really lacking. Microbiologists store data on their personal computers, without a backup. It’s not a good environment for routinely sharing upward.”

(National stakeholder, HH)

“We have not engaged with the private sector on data. Why are countries hesitating?”

(Regional stakeholder, HH)
Major barriers & facilitators to sharing AMR/C/U data

**Key Findings**

**Strongly interconnected:**

<table>
<thead>
<tr>
<th>Perceived risks</th>
<th>Data privacy &amp; access</th>
<th>Legal &amp; ethical framework</th>
<th>Political will to share data reg.</th>
<th>Trust</th>
</tr>
</thead>
<tbody>
<tr>
<td>- Negative economic consequences/export (AH) [/tourism (HH)]</td>
<td>- Countries maintain ownership</td>
<td>- Privacy issue to be addressed/type of data/sector (Ex. OIE non-disclosure of national-level AMC/U data: aggregated by region)</td>
<td>- Might be affect by the lack of feedback and tangible benefits</td>
<td>- Lack of trust between ministries/private sector</td>
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<tr>
<td>- Misinterpretation, misuse/abuse of the data, discreditation/criticism</td>
<td>- Key concerns/ownership &amp; confidentiality: mainly due to trade implications (AH) (&gt; ethical issue (HH))</td>
<td>Lack of legal precedents to build upon in some countries (not participation in GLASS, MAAP, ...)</td>
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<td>When precedents exist, MOUs are the preferred tools</td>
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</table>

**Key concerns/ownership & confidentiality:**

- mainly due to trade implications (AH)
- (> ethical issue (HH))

**Lack of legal precedents to build upon:**

in some countries (not participation in GLASS, MAAP, ...)

**Lack of trust between ministries/private sector:**

Globally present, as long as it is beneficial for the country (no economic damage)

Trust in global and glob/regional partners is generally high
Guiding Principles offered by established networks

✔ Clearly outline the benefits countries will experience by participating, and continually manage country expectations.

✔ Insist that member states should drive its priorities and activities.

✔ Establishing a data foundation for AMR and AMU/C requires significant time. We should start immediately, with realistic expectations.

✔ Prioritize the capacity building of national stakeholders who value and have the influence to enhance their nation’s AMR response sustainability (Empowering advocates)

✔ Understand - thoroughly - the advocacy process needed to translate data into action. This includes a focus on the Ministry of Finance to make sure adequate resources can be allocated to AMR activities.
Guiding Principles offered by established networks

✔ Generate and utilize data on the economic burden of AMR. Many policymakers react best to an economic/cost argument.

✔ Understand that each country's surveillance system must be tailored to that country.

✔ Utilize private sector data, and persuade stakeholders who have an inherent distrust of private sector actors.

✔ At a regional level, major point is to have countries and networks working in a way where results can be used together.
A regional framework must **enhance national-level capacity** to improve the quantity, quality, and representativeness of data by providing active technical assistance and feedback.

A regional framework must focus on **providing technical assistance guidelines, which allow countries to sustainably realize benefits in exchange for data sharing.**

A regional framework must **set a precedent for integrated analysis** and support the countries to translate and utilize the data in a manner to better inform policy and decision-making.

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A long-term goal of a regional framework must include the **monitoring of advanced parameters to quantify transmissions pathways between sectors.**

A regional framework must demonstrate sufficiently broad and deep expertise to **fill a range of knowledge gaps noted by national stakeholders.**

An effective regional framework must seriously consider **utilizing data from the pharmaceutical industry.**
Key Recommendations for Consideration

- An effective regional framework must **enhance the advocacy capacity of national stakeholders**.

- A regional framework must be **composed of a range of organizations** which expertise in data management and analysis, advocacy and policy, and research, among others.

- Inclusion of private sector(s) in the regional framework is key for the success of AMR and AMU/C data foundation.

- Providing **access to an IT tool for data analysis and visualization** would be an attractive asset for a regional data foundation.

- **Confidentiality and privacy concerns need to be carefully addressed** to overcome trade-related barriers.

- A regional framework must support countries to **assess the economic AMR burden in animal health sector**.