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Integrated Surveillance of AMR and AMU: A One Health Approach

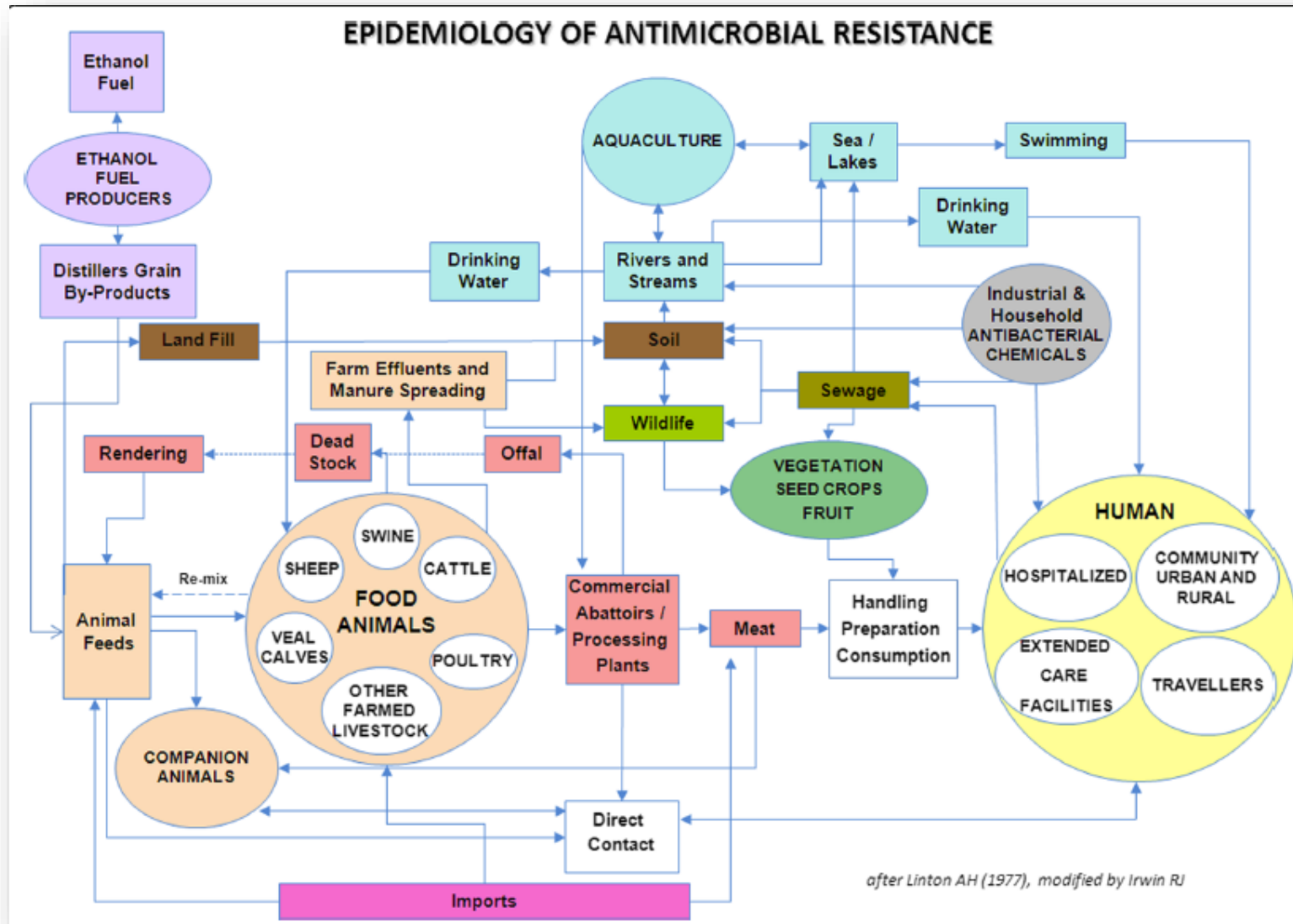
Sabiha Essack and Jaap Wagenaar

Co-Chairs: Quadripartite Technical Group on the Integrated Surveillance

Overview

- Why do we need integrated surveillance?
- What is integrated surveillance?
- How do countries implement integrated surveillance?
- How will integrated surveillance be of benefit to countries?
- Role of the Quadripartite Technical Group on Integrated Surveillance
- Proposed focus areas for the GLG

WHY? AMR is Complex & Interconnected



WHY? AMR has Multi-Sectoral Impact

THE IMPACT OF AMR BY 2050 WOULD BE WIDE-RANGING

28 MILLION
PEOPLE

projected to fall into poverty
because of AMR



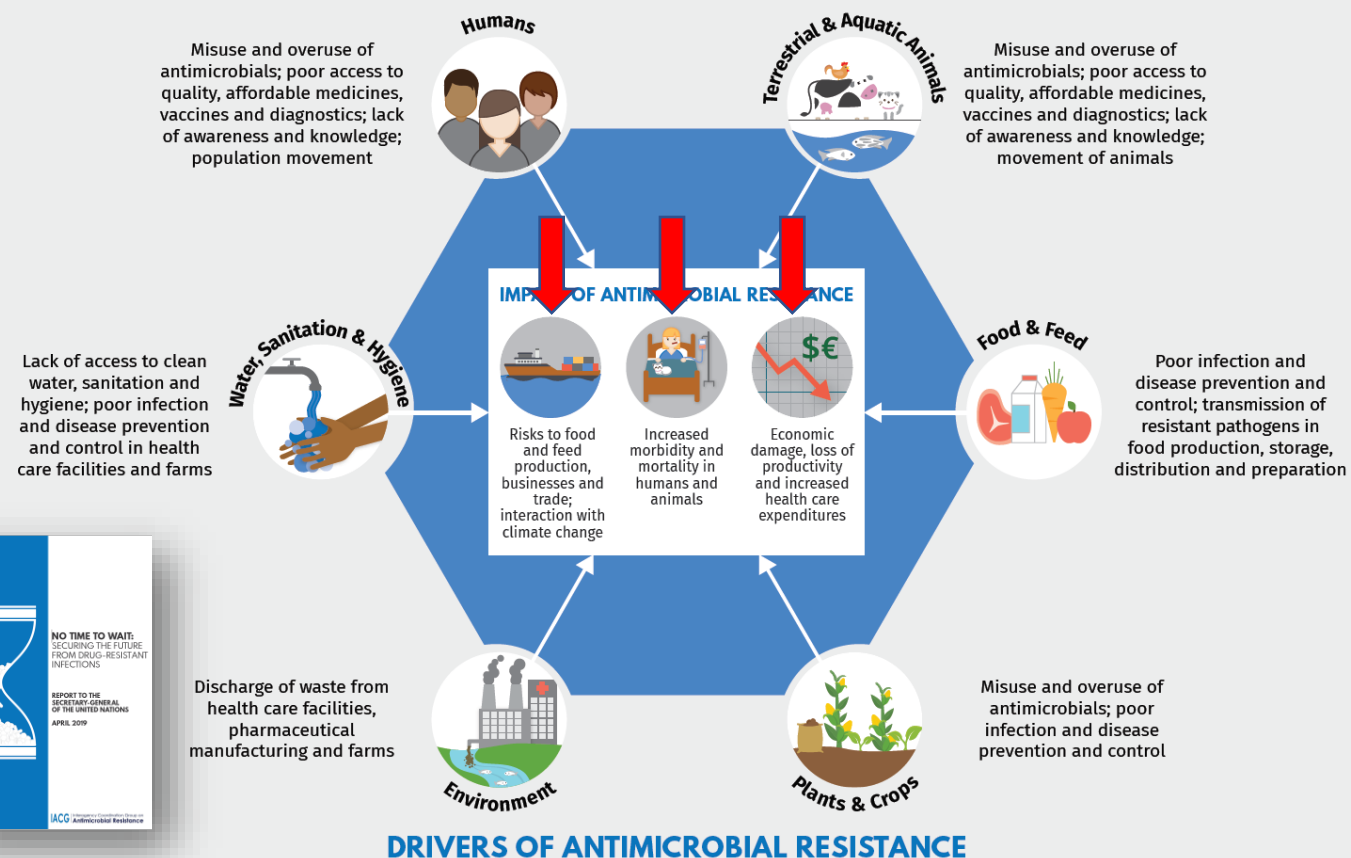
UP TO 7.5%
decline in global
livestock production

UP TO 1 TRILLION
US \$
global increases in
healthcare cost

UP TO 3.8%
decline in global exports

Fig 1. A One Health response to address the drivers and impact of antimicrobial resistance

"One Health" refers to designing and implementing programmes, policies, legislation and research in a way that enables multiple sectors and stakeholders engaged in human, terrestrial and aquatic animal and plant health, food and feed production and the environment to communicate and work together to achieve better public health outcomes.



What is Integrated Surveillance?

Public health surveillance is “the ongoing, systematic collection, analysis, and interpretation of health-related data essential to planning, implementation, and evaluation of public health practice.”

<https://www.cdc.gov/training/publichealth101/surveillance.html>

Integrated One Health Surveillance is the “**collaborative, coordinated, ongoing, systematic collection, analysis, interpretation and communication of AMR and AMU data (from humans, animals, plants and the environment) essential for action**, i.e. planning, implementation, and evaluation of **interventions to optimize One Health policy, legislation and practice to mitigate AMR.**”



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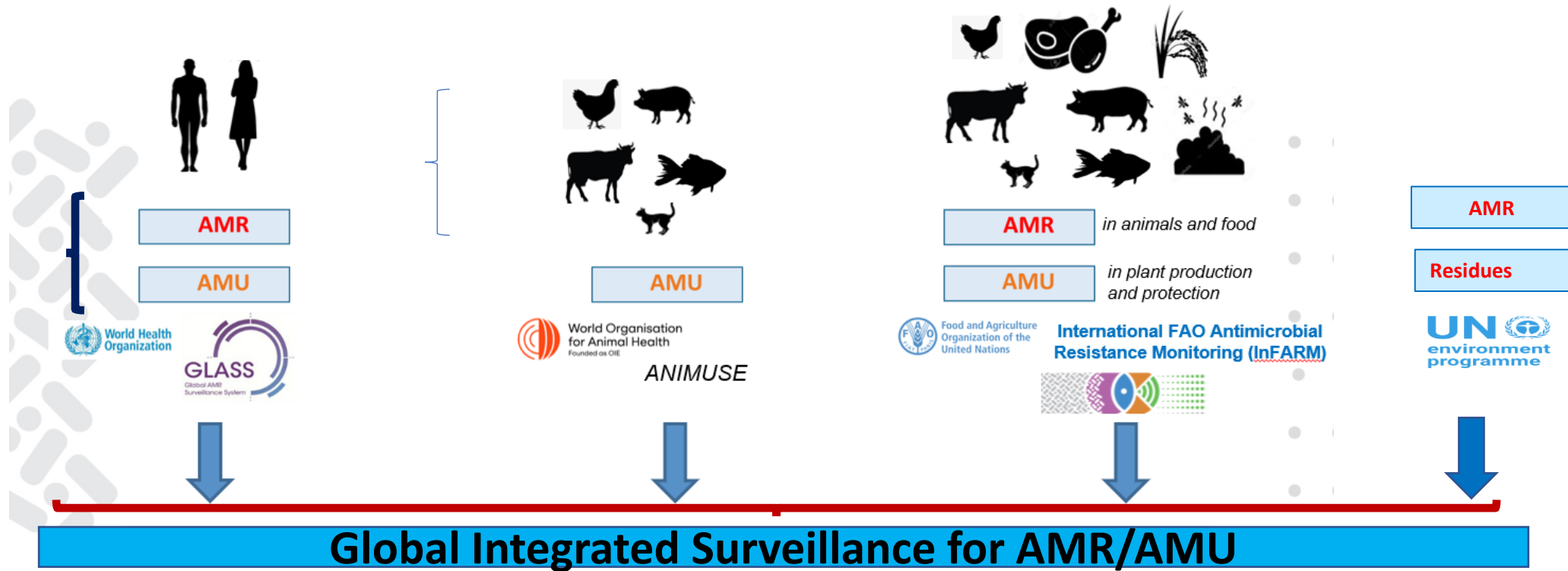
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What is Integrated Surveillance?

Quadripartite Global Surveillance Architecture

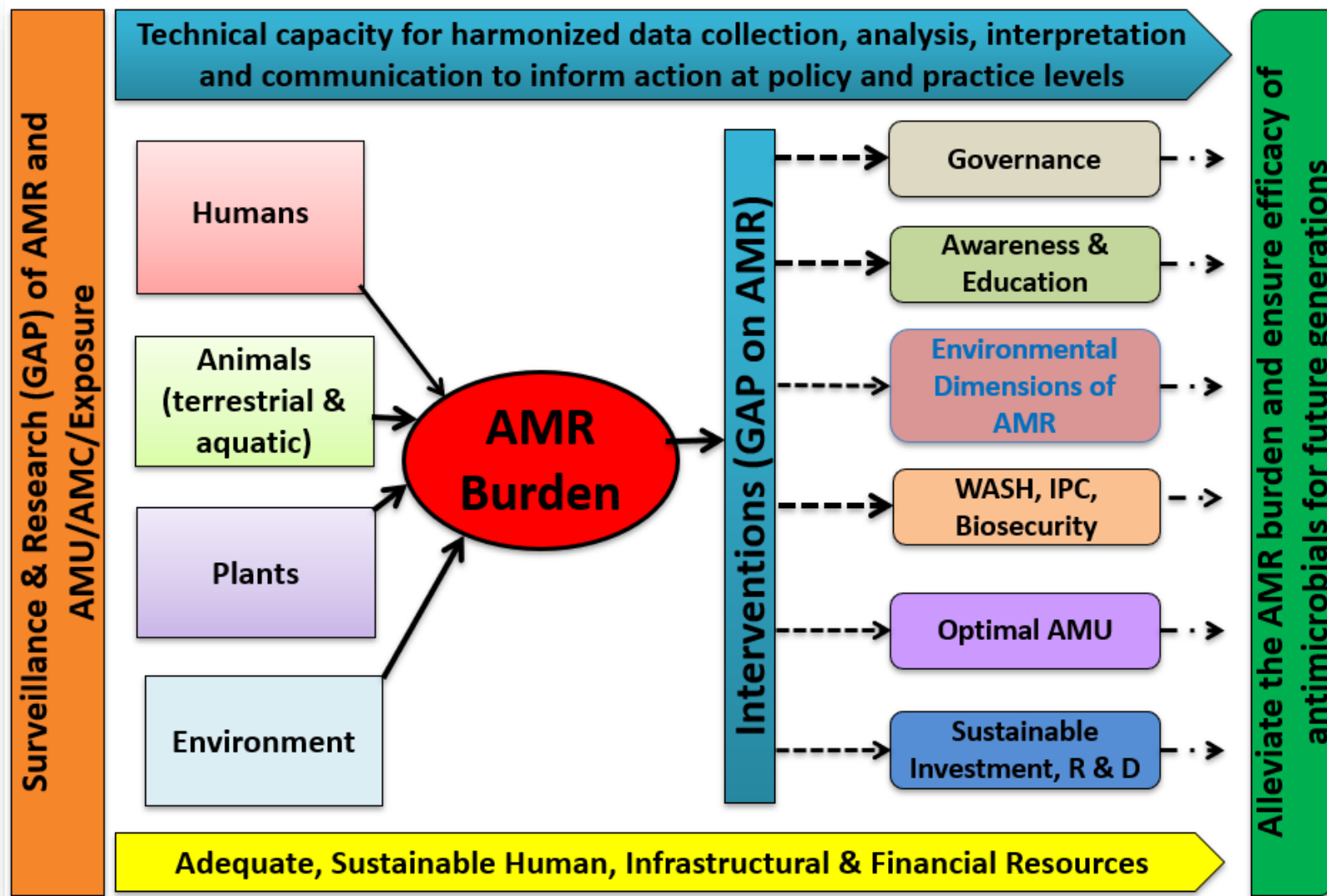


Health System

Agricultural System

Environmental Health System

What is Integrated Surveillance?: A Conceptual Framework



HOW? - Resources

External:

- Multi-Partner Trust Fund
- Fleming Fund

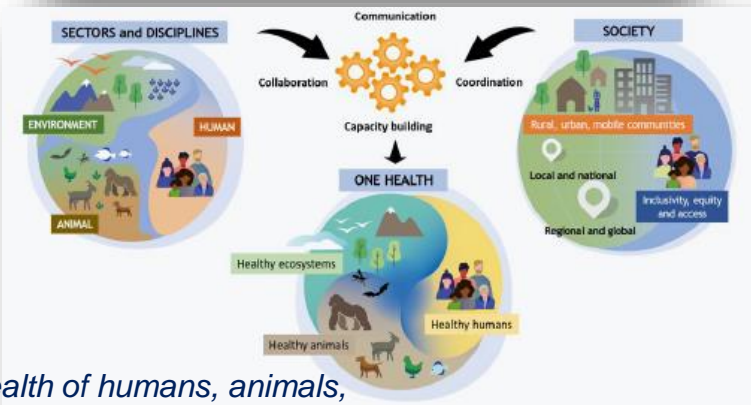
In-country: Integrate into existing surveillance systems e.g.

- TB, HIV and malaria (legislation, surveillance, laboratory & IPC infrastructure)
- Food safety and animal health and welfare programmes
- Water quality testing and wastewater surveillance for SARS-CoV-2

Requires the 5 “Cs”

- Consultation, Collaboration, Coordination, Communication and Capacity Building

FAO, UNEP, WHO, and WOA. 2022. *One Health Joint Plan of Action (2022-2026). Working together for the health of humans, animals, plants and the environment.* Rome.



HOW? - Implementation Research

Implementation Research is the scientific inquiry into questions concerning implementation—the act of carrying an intention into effect, which in [One] Health research can be policies, programmes, or individual practices (collectively called interventions).¹



¹Peters DH, et al. *BMJ* 2013; **347**: f6753.

Benefits of Integrated Surveillance

Integrated Surveillance:

- Detects AMR reservoirs and hotspots.
- Determines the drivers of resistance - inappropriate AMU (AMR-specific) or sub-optimal WASH/IPC (AMR-sensitive)
- Identifies potential transmission routes and directionality
- Provides data for action: informs risk management policy, legislation and practice strategies.
- Serves as an indicator to measure the success of interventions to mitigate AMR and optimize AMU

Quadripartite Technical Group on Integrated Surveillance

Aim:

- To develop a technically feasible public health value proposition for the implementation of integrated One Health surveillance by all member states.

Roles and Responsibilities:

- Reach consensus on the definition of Integrated Surveillance
- Review current approaches and guidance on integrated surveillance
- Develop a framework for integrated surveillance based on the review
- Identify minimum technology laboratory and diagnostic capability for sector-specific and integrated surveillance including the incremental implementation of genomic surveillance
- Ensure adaptability in different resource settings and specifically in LMICs

GLG: Call for Action

Advocacy for:

- Multi-sectoral governance: consultation, collaboration, coordination, communication, capacity building
- Build on existing surveillance of AMR and AMU to incorporate integrated surveillance
- Harmonized data collection and data sharing
- Mobilization of resources and advocacy for domestic resource allocation/repurposing for integrated surveillance
- Inclusion of integrated surveillance in communiqués of the G7, G20, others
- Inclusion of integrated surveillance in the 2024 UNGA Political Declaration



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THANK YOU

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