Food and Agriculture Organization of the United Nations

UN environment programme

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World Organisation for Animal Health
Founded as OIE

African Union

AFRICA REGIONAL STRATEGY ON ANTIMICROBIAL RESISTANCE COMMUNICATIONS AND ADVOCACY

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Contributors

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Organization	Contributors		
AU	Wande Alimi	AMR and One Health Programme Coordinator	Africa CDC, Addis Ababa, Ethiopia
	John Oppong-Otoo	Food Safety Officer	AU-IBAR, Nairobi, Kenya
	G. Nekerwon Gweh	Communication Officer	Africa CDC, Addis Ababa, Ethiopia
FAO	L. Irène I. Ouoba	Regional AMR Programme Coordinator	Regional Office for Africa, Accra, Ghana
	M.S. Kinuthia Bubi	AMR Specialist	Regional Office for Africa, Accra, Ghana
	Zoie Jones	Communication Officer	Regional Office for Africa, Accra, Ghana
	Scott Newman	Senior Animal Health and Production Officer	Regional Office for Asia and the Pacific, Bangkok, Thailand (formerly in the Regional Office for Africa)
	Ki Min	Communication Specialist (Former AMR Communication Specialist, FAO RAF)	Headquarters, Rome, Italy
	Cortney Price	Behavioural Science Expert	Headquarters, Rome, Italy
	Tabitha Kimani	ECTAD Regional Veterinary Socio-Economist and AMR Coordinator (Eastern Africa)	Country Office, Nairobi, Kenya
	Mark Obonyo	AMR Project Coordinator for Southern Africa	Subregional Office for Southern Africa, Harare, Zimbabwe
	Kofi Afakye	National Project Coordinator for AMR	Country office, Accra, Ghana
	Bengoumi Mohammed	Animal Health and Production Officer	Subregional Office for North Africa, Tunis, Tunisia
	Kouther Oukaili	Technical Officer, Animal Production and Health	Subregional Office for North Africa, Tunis, Tunisia
	Henda Boulajfene	National Programme Support Specialist	Subregional Office for North Africa, Tunis, Tunisia
	Friederike Mayen	Senior Livestock and Development Officer	Regional Office for Near East and North Africa

Organization	Contributors		
WOAH	Samuel Wakhusama	Subregional Representative for Eastern Africa	Subregional Office for Eastern Africa, Nairobi, Kenya
	Jane Lwoyero	AMR and Food Safety Expert	Subregional Office for Eastern Africa, Nairobi, Kenya
	Chadia Wannous	Regional One Health Officer for Africa	Subregional Office for Eastern Africa, Nairobi, Kenya
	Ólafur Valsson	Chargé de Mission, AMR, and Tripartite Liaison	Headquarters, Paris, France
	Mohamed M. Sirdar	Programme Officer	Subregional Office for Southern Africa, Gaborone, Botswana
	Pato Pidemnewe	Technical Coordinator of the Regional Disease Surveillance Systems Enhancement (REDISSE) Project	Regional Office for Africa, Bamako, Mali
	Bachir Souley Kouato	Technical Coordinator of the Professionalisation of Veterinary Paraprofessionals (P3V) Project	Regional Office for Africa, Bamako, Mali
	Laibané Dieudonné Dahourou	Technical Assistant of the Professionalisation of Veterinary Paraprofessionals (P3V) Project	Regional Office for Africa, Bamako, Mali
	Taylor Gabourie	AMR Communication Officer	Headquarters, Paris, France
WHO	Yahaya Ali Ahmed	Team Leader, AMR	Regional Office for Africa, Brazzaville, Congo
	Walter Fuller	Technical Officer, AMR	Regional Office for Africa, Brazzaville, Congo
	Laetitia Gahimbare	Technical Officer, AMR	Regional Office for Africa, Brazzaville, Congo
	Tieblé Traore	Technical Officer Emergency Preparedness	
	Eugene Tebogo Mahlehla	Health Promotion Officer	Regional Office for Africa, Brazzaville, Congo
	Rodrigue Boureima Barry	Communications Manager	Regional Office for Africa, Brazzaville, Congo
	Aminata grace Kobie	Risk Communication Specialist	Regional Office for Africa, Brazzaville, Congo
	Collins, Boakye-Agyemang	Communications Officer	Regional Office for Africa, Brazzaville, Congo
UNEP	Levis Kavagi	Regional Coordinator, Ecosystems and Biodiversity	Africa Office, Nairobi, Kenya
	Angèle Luh-Sy	Head, West Africa Office	Subregional Office for West Africa, Abidjan, Côte d'Ivoire
	Marijn Korndewal	Associate Freshwater Expert	Africa Office, Nairobi, Kenya
	Mohamed Atani	Regional Communication and Information Officer	Africa Office, Nairobi, Kenya
	David Ombisi	Programme Officer, AMCEN Secretariat	Africa Office, Nairobi
	Aitziber Echeverria	Programme Management Officer Knowledge and Risk Unit	Chemicals and Health Branch, Geneva, Switzerland

Abbreviations and acronyms

AM	Antimicrobial
AMR	Antimicrobial resistance
ARG	Antimicrobial resistance gene
AMU	Antimicrobial use
AU	Africa Union
CSO	Civil society organization
FAO	Food and Agriculture Organization of the United Nations
GLASS	Global Antimicrobial Resistance and Use Surveillance System
HIC	High-income country
IACG	Inter-Agency Coordinating Group
IPC	Infection prevention and control
IPM	Integrated pest management
ISPM	International Standards for Phytosanitary Measures
LMIC	Low- and middle-income country
M&E	Monitoring and evaluation
NAP	national action plan
NGO	Non-governmental organization
OH	One Health
WOAH	World Organisation for Animal Health (former OIE)
REC	Regional Economic Community
SAICM	Strategic Approach to International Chemicals Management
SDG	Sustainable Development Goal
SWOT	Strengths, Weaknesses, Opportunities, and Threats
TB	Tuberculosis
UNEP	United Nations Environment Programme
WAAW	World Antimicrobial Awareness Week
WASH	Water, sanitation and hygiene
WHO	World Health Organization

1. Background

1.1 Introduction

i. Public health

Antimicrobial resistance (AMR) occurs when germs, including bacteria, viruses, fungi and parasites change over time and no longer respond to antimicrobials – antibiotics, antivirals, antifungals and antiparasitic agents – making infections harder to treat and increasing the risk of disease spread, severe illness and death. Antimicrobial resistant germs are found in people, animals, food, plants and the environment (in water, soil and air). They can spread from person to person or between people and animals, including from food of animal origin. While AMR occurs naturally over time, usually through genetic changes, the main drivers of AMR include the misuse and overuse of antimicrobials in human health and agriculture; lack of access to clean water, sanitation and hygiene (WASH) for both humans and animals; poor infection and disease prevention and control in healthcare facilities and farms; poor access to quality, affordable medicines, vaccines and diagnostics; lack of awareness and knowledge; and weak enforcement of legislation. Minimizing the emergence and spread of AMR requires a coordinated, focused multisectoral and multinational effort.

ii. Animal health

Antimicrobials play a critical role in treating animal diseases (aquatic and terrestrial) and therefore, animal health and welfare depend on the availability, effectiveness, and appropriate use of quality antimicrobials. These medicines are used for disease control and treatment within a flock, herd or on a farm. Antimicrobials are also used in low concentrations in animal feed to stimulate growth and production, which contribute to emergence and spread of AMR. AMR poses a serious threat to the safety and quality of feed and food, food security and livelihoods. Only healthy animals are able to generate food products of acceptable safety and quality for human consumption and contribute to income-generation. Adherence to acceptable standards for residues in animal feed and food and products increases the potential of livestock sectors' access to trade and increases public health risks. Animal health and welfare depend on the availability, effectiveness and appropriate use of quality veterinary medicines, including antimicrobials. Since antimicrobials are extensively used in food-producing animals, the animals can serve as a reservoir of antimicrobial-resistant germs, which can be transmitted to humans. Resistant germs such as bacteria in animals may reach humans through food, water, soil and manure (used as fertilizer). Antimicrobial-resistant germs in animals that may pose a potential risk to human health are zoonotic pathogens transmitted through food and food-borne pathogens such as *Salmonella* spp., *E. coli, Campylobacte*r spp. and enterococci. In addition, livestock-associated methicillin-resistant *Staphylococcus aureus* (LA MRSA) and extended spectrum beta lactamase *E. coli* are emerging problems throughout the world.

iii. Environment health

AMR is common among germs found in the environment. However, use of antimicrobial agents such as antibiotics in humans, terrestrial and aquatic animals and companion animals and plants has been associated with the evolution and amplification of antimicrobial resistant pathogens and the antimicrobial resistant genes (ARGs) that they carry. Anthropogenic activities are increasing the importance of the environment as a pathway for human exposure to antimicrobial resistant germs. Freshwater is both a recipient and a carrier of antimicrobial resistant pathogens. For example, antimicrobial resistant pathogens and ARGs being discharged to waterways via open defecation, raw and treated sewage and

liquid effluent from septic tanks and pit toilets pollute the environment. Wastewater discharges from sites where use of antimicrobials can be high, such as hospitals, intensive livestock farms and aquaculture systems are likely to contain particularly elevated concentrations of antimicrobials, antimicrobial resistant organisms and ARGs, which might influence AMR spread depending on dilution in the receiving water. Similarly, the use of antimicrobials in terrestrial and aquatic animals and plants can also contribute to the spread of antimicrobial compounds and their metabolites and clinically relevant ARGs to waterways via point source pollution (e.g. discharge from feedlots or aquaculture ponds) or diffuse pollution.

iv. Plant health

Crop protection against pest insects and diseases is critical in maintaining and improving crop yields. Over the last decades, agricultural intensification has led to a significant increase in the use of agrochemicals. Despite the growing awareness of integrated pest management and use of disease-resistant crop varieties, pesticides now and in the future will remain needed for many crops. Two major concerns surrounding their use revolve around (i) their negative impacts on human health and the environment and (ii) threat of pesticide resistance, affecting insecticides, herbicides and fungicides (antimicrobial pesticides). Both concerns arise from their misuse and overuse. The negative impacts to public and environmental health are: (i) prolonged occupational exposure, risks for consumers and environmental pollution; (ii) the residues of fungicides and antibiotics in crops may encourage emergence of resistant strains of fungus and bacteria. However, while estimates show that the amount of antimicrobials used for crops is relatively low in comparison to the quantities used in livestock, the potential risk of AMR should not be ignored. The solution lies in adoption of integrated pest management (IPM) as well as good agricultural and production practices, biosecurity and infection control, thereby reducing the need for antimicrobials and the selective pressure for developing AMR.

v. Food safety

Antimicrobial resistant germs can be found in live animals, in agricultural soil and in the food processing and preparation environment. Furthermore, they can contaminate food prepared in our kitchens if precautions are not taken to control cross-contamination. Resistant micro-organisms can cause food-borne infections and generate a potential risk to human beings through possible treatment failure or the transmission of resistance genes among human populations. Untreatable antimicrobial resistant infections can kill plants and food-producing animals or reduce productivity. Both may increase food insecurity. In many cases, the germs responsible for food-borne disease outbreaks are resistant to one or more antimicrobials. If a food-borne illness is caused by a resistant germ and causes a sufficiently severe infection that requires treatment, then the treatment may not work and, so what could have been easily treated in the past can become life-threatening. Food contaminated with bacteria, fungi, viruses, parasites or toxins at levels high enough that make people sick is unsafe; that would include microbes that are resistant to antimicrobials.[1]

1.2 AMR in Africa

i. Overview

In Africa, AMR has already been documented to be a problem for human immunodeficiency virus (HIV) and the pathogens that cause malaria, tuberculosis (TB), typhoid, cholera, meningitis, gonorrhoea and dysentery. According to the 4th Global Antimicrobial Resistance and Use Surveillance System (GLASS) report, median resistance rate for the two Sustainable Development Goals' (SDGs) AMR indicators monitoring the proportion of AMR in bloodstream infections (BSIs) were 36.6 percent (interquartile range [IQR] 17.5–58.3) for E. coli-resistant to 3rd generation cephalosporins and 24.9 percent (IQR 11.4–42.7) for methicillin-resistant *S. aureus* (MRSA). For the WHO Africa region, they were respectively 40.1 percent (IQR 30.7–60) for *E. coli*-resistant to 3rd generation cephalosporins and 10.3 percent

[1] http://www.fao.org/food-safety/news/news-details/fr/c/1331603/.

(IQR 2.5–21.4) for methicillin-resistant *S. aureus* (MRS). These findings require further investigation to verify the reliability of the results and understand the reasons behind reported high rates.

Resistance to priority pathogens such as *Campylobacter* spp., *Salmonella* spp., *Escherichia coli* and *Enterococcus* spp. has also been observed in food production and agricultural systems in Africa. The health and economic costs of AMR are significant and further compounded by a growing global population with rising food demands in Africa. In the Africa region, the double burden of communicable and non-communicable diseases, fragile health systems coupled with poverty creates fertile ground for the proliferation of AMR. While AMR will affect all countries adversely, its impact is disproportionately severe in low- and middle-income countries, a significant proportion of which are African countries.

Weak surveillance systems for AMR and weak antimicrobial use (AMU) monitoring means there is limited national data on the level of AMR, especially in animals and their products. Africa records a high level of AMU in animal production systems, especially tetracyclines, aminoglycosides and penicillin. Although a recent trend report by the WOAH showed some decrease in quantities of AMU in recent years, the trend is likely to increase the already high prevalence of AMR and multidrug resistance in the continent. Overuse and misuse of antimicrobials coupled with weak AMR surveillance systems in the region is of great concern. The weak WASH systems means that even if resistance emergence is reduced through reduced use of antimicrobials, the existing resistance which is mostly transmitted through the environment will continue to be a concern.

As of August 2021, more than 40 African countries have developed multisectoral national action plans/policies for AMR. During the annual World Antimicrobial Awareness Week (WAAW), there have been campaigns both at regional and country levels, supported by the AU and the Tripartite (FAO, WOAH and WHO). In November 2019, regional WAAW was for the first time jointly commemorated with the Kenya Government, WHO, FAO, WOAH, AU, regional economic communities (RECs) and civil society organizations (CSOs). In November 2020, WAAW was commemorated at continental level for the second time together with WHO, FAO, WOAH, UNEP, AU, RECs and CSOs.

ii. SWOT Analysis: AMR risk mitigation

Strengths	Weaknesses
• Good collaboration among the Regional Tripartite (FAO, WOAH and WHO), UNEP, AU, RECs, CSOs, funding institutions and other partners on AMR issues • Development of AMR national action plans (NAPs)/ policies by most African countries in the context of the One Health approach • Increase of political commitments towards AMR mitigation • Engagement of CSOs • Availability of guidelines and tools such as GLASS and ATLASS • Strong AMR control government-based champions in many countries • Stimulation of AMR investment through a good number of donor-funded projects in a significant number of countries	• Weak surveillance and lack of integrated systems between the human, animal (terrestrial and aquatic), plant and environment sectors • Low literacy on implication of AMU • Low investment and implementation levels of developed AMR NAPs • Poor enforcement of legislations and standards on AMs • Inadequate national collaboration mechanisms between sectors • Low quality and weak curriculum of professional education on AMR • Limited or weak awareness campaigns • Inadequate WASH systems • Low uptake of wastewater treatment infrastructure

Opportunities	Threats
• Increasing interest from potential donors • Developing innovations for diagnostics • Engaging youth groups • Making available global frameworks and initiatives (One Health approach, IHR) • Making AMR pillars cross-cutting with other programmes (laboratory, IPC/WASH, etc.) • Increasing interest from students' organizations and youth groups • Consistent reporting by more countries on AMU in animals and humans • Focusing more on adopting the One Health approach to tackle AMR • Establishing of networks of experts and reference laboratory and collaborating centres • Engaging private sector, CSOs and NGOs on AMR awareness • African universities and research centres have the expertise to provide advisory and educational support • Informing policy-makers and politicians to address the AMR-related problems • Engaging the Tripartite, UNEP, AU, and other partners for the development of action plans and implementation • Utilizing social media to convey positive media campaigns	• Low public understanding of AMR • Consideration of AMR mitigation as a priority by very few countries • Lack of sufficient domestic and international resources for AMR mitigation activities • High AMU • Easy access to AM products in most countries • Lack of focus on the development of affordable alternatives to AMs • Lack of involvement of trade, industries and the private sector • Instability in some African countries • Possibility of conflict of interest, especially among the private sectors • Limited or weak political endorsement or will • Lack of appropriate technologies to remove AMs from wastewater and drinking water • Climate change-induced temperature increase,[2] affecting Africa in particular, is projected to cause changes in pathogenic germs' growth, survival, virulence and transmission. This could lead to an increased AMR and AMU

1.3 Tripartite–UNEP–AU collaborations

i. Who we are

▷ African Union (AU)

The AU is a continental body consisting of the 55 Member States that make up the countries of the African continent. It was officially launched in 2002 as a successor to the Organization of African Unity (OAU, 1963–1999). In response to the urgent threat of AMR and reflecting the UN consensus on priorities, the AU established a task force on AMR in 2018. The group includes all agencies of the AU involved in human, animal, and plant health. The task force seeks to strengthen AMR control activities among the AU agencies, support Member States and RECs, and coordinate with partners, including UN agencies, research and academia, industry, development partners, donors, and non-governmental agencies. The AU task force serves as the primary coordinator for AMR control on the African continent, creating an environment that facilitates the work of Member States, UN agencies, and other organizations. The group prioritizes continent-wide efforts to increase political

[2] https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7285162/.

commitment, mobilize resources and promote policies that improve AMR control across human, animal and plant sectors.

▷ Food and Agriculture Organization of the United Nations (FAO)

FAO is a specialized agency of the UN that leads international efforts to combat hunger by ensuring food security to allow people to lead active and healthy lives. It has five regional offices worldwide, which support its works in over 130 countries. The Regional Office for Africa (RAF) includes four subregional offices in Central, Eastern, Southern and Western Africa (SFC, SFE, SFS, SFW, respectively) and covers 47 countries. FAO regional, subregional and country offices comprise a rich pool of experienced multidisciplinary expertise and knowledge in different sectors such as animal (terrestrial and aquatic) production and health, food production and safety, crops, plants, nutrition, water and soil, and AMR which is cross cutting across the different sectors under the FAO mandate. There are various ongoing projects aiming at developing and strengthening country-level capacity to prevent, detect and respond to animal (terrestrial and aquatic) and plant diseases of economic and public health importance including AMR.

▷ World Organisation for Animal Health (WOAH)

The WOAH (formally International Office of Epizootics [OIE]) is an intergovernmental organization, established in 1924 and responsible for improving animal health worldwide. WOAH's mandate covers animal health, both terrestrial and aquatic animals, wildlife, veterinary public health, including zoonotic diseases and animal welfare. The WOAH's mission is to ensure transparency in the global animal disease situation; collect, analyse and disseminate veterinary scientific information; encourage international solidarity in the control of animal diseases; safeguard world trade by publishing health standards for international trade in animals and animal products; improve the legal framework and resources of national veterinary services and to provide a better guarantee of food of animal origin and to promote animal welfare through a science-based approach. The WOAH Regional Representation for Africa is among the five regional representations (Africa, Americas, Asia and the Pacific, Europe, and the Middle East) established by WOAH. The purpose of the representation is to provide to the Member States, services that are adapted to the regional level, so that they may strengthen both surveillance and control of diseases in Africa.

▷ World Health Organization (WHO)

The WHO is the directing and coordinating authority on international health within the United Nation System. The organization adheres to values of integrity, professionalism and respect for diversity as it works to promote health, keep the world safe and serve the vulnerable. WHO has as primary role to direct international health within the United Nations' system and to lead partners in global health responses. Guided by this primary responsibility, the WHO Regional office for Africa (WHO-AFRO) works towards sustainable regional AMR coordination and supporting countries in the implementation of their NAP and ensures that this is in line with priorities set forth in the WHO Thirteenth General Programme of Work 2019–2023. The GPW13 outlines WHO's vision and strategic priorities with respect to public health leadership and driving impact at country level based on three critical priorities with associated targets which are: one billion more people with essential health services coverage; one billion more people made safer; and one billion lives improved. In line with the GPW13, there is a need to strengthen in-country capacity to deliver on critical AMR activities, which will contribute to the triple-billion goals and drive sustained long-term impact at country level.

▷ United Nations Environment Programme (UNEP)

The UNEP is the leading global environmental authority that sets the global environmental agenda, promotes the coherent implementation of the environmental dimension of sustainable development within the United Nations system, and serves as an authoritative advocate for the global environment. UNEP is increasing its coordinated activities with the Tripartite organizations in different areas promoting and strengthening the capacity of countries to implement the environmental dimensions of the One Health approach (linking human, animal, and ecosystem health), and enhancing and broadening

the multi-stakeholder involvement in AMR collective work. Closely linked to it, UNEP is carrying out activities on environmentally persistent pharmaceutical pollutants, considered an emerging policy issue in the Strategic Approach to International Chemicals Management (SAICM) context. In addition, UNEP in cooperation with other relevant partners is also developing a report on pesticides and fertilisers. This report addresses the environmental and health impacts of pesticides and fertilizers and ways of minimizing them, a section dedicated to AMR is included.

ii. Why we need strong collaboration and partnership

Humans, animals and plants share the many similar germs, which, when harmful need to be combated and prevented at the national, regional and global levels. Curbing the emergence of AMR, therefore, requires global, multisector harmonization of the strategies and measures designed to improve the coordination of public, animal, plant and environmental health policies. The strong collaboration has several advantages:

- promotes the One Health approach and joint activities and reduced duplication of activities;
- facilitates the collective development, updating, coordination, monitoring and reporting of AMR;
- fosters a coordinated approach to avoid partner fatigue;
- drives intersectoral collaboration to attract funding;
- provides flexibility to grow and adjust the work according to the level of participation;
- allows holistic oversight and monitoring for joint results;
- enhances the integration and synergies needed to sustain efforts and the momentum for addressing AMR;
- allows for leveraging on the different expertise, resources and mandates of collaborating partners to achieve the desired objectives aligned to a common goal.

iii. What we strive to achieve: our plan

During the WAAW 2019 organized jointly at regional level by the Tripartite and the AU in Nairobi, Kenya (18–24 November 2018), an AMR coordination meeting with the organizing institutions, RECs and CSO was held. At the end of the meeting, the different participating institutions agreed to set up an African coordination group with the goal to improve the coordination and collaboration on continent-wide activities on the prevention and control of AMR in Africa.

The members of the African Inter-Agency coordinating group on antimicrobial resistance and control will work together to:

- serve as a platform to exchange information about agency activities;
- share tools, resources and work plans;
- support development of guidance and recommendations on best tools and resources to support REC-level AMR programming (stakeholder workshop, training and regional AMR networks);
- support guidance and recommendations on best tools and resources to develop, revise and implement One Health AMR NAPs;
- identify and plan joint activities such as regional awareness and advocacy campaigns, increasing the impact of existing programmes, capacity development of laboratories and surveillance, etc.

Members of the continental coordination group will harmonize work at African level under the five following pillars:

- advocacy, awareness and behaviour change;
- resource mobilization and partnership;
- policy, strategy and legislation;
- technical guidance and assistance, planning and implementation (to support development and implementation of national action plans);
- platform for M&E, documentation and exchange of information.

The current communication strategy is one of the joint outputs of the coordination group falling under Pillar 1.

During the African continental WAAW 2020 organized jointly by the AU, WHO, FAO, WOAH and UNEP, the regional directors of the different institutions signed a joint communique[3] committing to unite and light AMR by implementing seven action points:

- fostering the One Health multisectoral collaboration;
- supporting African Member States in developing, reviewing, updating and implementing NAPs in line with the One Health approach;
- strengthening advocacy and awareness at all levels and encourage behavioural change through evidence;
- supporting the integration of AMR actions in routine IPC measures, as well as biosecurity and good hygiene practices;
- supporting the compliance and implementation of international standards for the management of human, animal, environmental and industrial waste;
- supporting to the greatest extent possible, public-private sector collaborations that support effective and efficient use of AMs; and
- engaging with CSO, media, private sector and the general public to improve AMR awareness.

1.4 African Union framework for AMR control

As an affirmation of their commitment to support Africa's efforts to control AMR, Africa's Heads of State and Government endorsed the African Common Position on AMR and the AU Framework for AMR Control, 2020–2025.[4] As such, they endorsed the AU Task Force on AMR to monitor, review, coordinate and develop policies related to AMR in a One Health approach.

This task force represents the AU agencies involved in the human, animal and plant health sectors who collaborate to measure, prevent, and mitigate harm from AMR germs. The task force seeks to strengthen AMR control activities among AU agencies; support Member States and RECs; and coordinate with partners, including UN agencies, research and academia, industry, development partners, donors, and non-governmental agencies.

[3] https://africacdc.org/download/communique-of-directors-of-regional-institutions-for-the-africa-continental-world-antimicrobial-awareness-week-2020/.

[4] https://africacdc.org/download/african-union-heads-of-state-and-government-endorse-african-common-position-on-controlling-antimicrobial-resistance/.

2. SWOT analysis of AMR communications in the region

This is a regional level SWOT analysis that Member States can adapt as per their specific country context.

Strengths

- A regular communication and coordination mechanism is well set up and Africa has a good network;
- A high interest and motivation among the members of the Regional Tripartite, UNEP and AU to better advocate for AMR risk mitigation;
- Recent topics likely to be subject to further communication (resolutions WHA 072/R6 and R7 on patient safety and improvement of WASH access in health care facilities);
- Political interest is growing; Wellcome Trust call to action in Ghana, 2018; AU Heads of State and Government's endorsement of common position on AMR;
- Organizations and national institutions specialized in communications;
- Global, regional, national and multisectoral effort and support; and
- Previous and ongoing successful campaigns.

Weaknesses

- Lack of dedicated AMR communication officers
- No regular budget allocation for AMR communication activities e.g. for WAAW participation, agencies are mobilizing resources in an ad-hoc manner;
- Lack of consistency in communication contents between involved organizations;
- Minimal/lack of knowledge on the level of awareness of the issue among stakeholders;
- Inadequate data;
- Low prioritization of AMR due to its covert nature;
- Inadequate regulations to support AMR NAP implementation;
- Weak enforcement of existing regulations;
- Unethical practices by professionals; and
- Risk of a communications strategy that is only meaningful to those who are already aware of the issues.

Opportunities

- Increasing interest from potential donors;
- Build on grass roots communication campaigns;
- Developing continent-tailored messaging on AMR;
- Adapting AMR into local languages and community context;
- Availability of new technologies for communication;
- Availability of human resources in ministries in charge of health and agriculture

Threats

- Technical language of AMR hinders understanding of the risks for non-experts;
- Lack of the urgency to act by the public because the effects of AMR are gradual not immediate;
- Competing health issues;
- Transboundary nature of AMR as a global concern; and
- Ease of movement of persons and goods due to globalization.

Opportunities (cont'd)	Threats (cont'd)
• Identification and communication of best practices; • Use of social media to reach the young and wider audiences; • Use of different communications channels to reach target populations and groups; • Reaffirmation of the commitment to fight AMR; • Increased support for the progress made towards financial commitment by private companies; • Rich pool of expertise; • Recent Intergovernmental Panel on Climate Change (IPCC) report, building the narrative of the impact of climatic temperature increase on AMR; and • The Conference of the Parties to the Convention on Biological Diversity, in 2022, and the role of the African Group Negotiators.	

3. Vision

The SWOT analysis has identified some prevailing weaknesses in efforts to prevent and control AMR. Among others, these include high AMU, low literacy on the implication of AMU and limited or weak awareness campaigns. In light of this, the overarching vision is to ensure that:

- Africans are aware of the seriousness of AMR and the dangers associated with inappropriate consumption of medicines;
- pharmacists, dispensers, medical doctors and other health care workers prescribe antimicrobials effectively and only when needed; and
- infection prevention and infection control measures are effectively implemented.

4. Objectives

By identifying the target stakeholders and existing gaps, and by finding solutions, the communication strategy will support and provide guidance to the regional tripartite, the UNEP and the AU. The strategy will do this by communicating AMR for the region and supporting Member States. Furthermore, it will serve as a guide for African countries to communicate on AMR in a consistent manner.

The specific objectives of this strategy are as follows:

- to improve awareness on AMR and its consequences in Africa;
- to promote careful use of antimicrobials among key stakeholders.

Improving AMR awareness across society will facilitate the goals and outcomes of AMR interventions. With stakeholder awareness established, improving governance and capacity or changing grassroots behaviour will become more effective, by way of tailored interventions such as training, consultations or behaviour change activities. A Region-wide coordinated AMR education, awareness and good practices campaign will enhance public awareness and form the foundation for other communications activities.

One voice, bigger impact

By having a fine-tuned, well-coordinated message, the regional tripartite, the UNEP and the AU will be able to leverage each other's networks and resources to create a united voice. One voice for Africa's key AMR organizations will help make a bigger impact across AMR interventions. Furthermore, a well-coordinated message within countries presents a better strategy for raising awareness and advocating on AMR issues efficiently.

Positioning Africa as a One Health AMR front runner

By strengthening Africa's branding and positioning in the fight against AMR, the regional tripartite, the UNEP and the AU will be able to position Africa as a leading region in combatting AMR with a strong One Health partnership. Positioning Africa as such will help further foster new partnerships to ensure a dynamic AMR risk mitigation landscape.

5. Stakeholder analysis and communication targets

5.1 Policy level

i. Regional Economic Communities (RECs)

Who are they?

The RECs are regional groupings of African states, which have developed individually and have differing roles and structures. The purpose of the RECs is to facilitate regional economic integration between members of the individual regions and through the wider African Economic Community (AEC), which was established under the Abuja Treaty (1991). The 1980 Lagos Plan of Action for the Development of Africa and the Abuja Treaty proposed the creation of RECs as the basis for wider African integration, with a view to regional and eventual continental integration.

What part do they play in the AMR scheme?

The RECS are increasingly involved in coordinating AU Member States' interests in wider areas such as peace and security, or development and governance. The RECs are closely integrated with the AU's work, including on AMR, and serve as its building blocks.

What is their role in AMR risk mitigation?

- integrate AMR into priority intersectoral health threats that require mitigation in the RECs;
- establish regional and national multisectoral collaboration and coordination with a formal governance mechanism;
- develop a regional/subregional AMR mitigation action plan;
- support political engagement in Member States;
- mobilize resources;
- identify partners and donors; and
- standardize intervention in countries within their regions.

ii. Member States

Who are they?

The 55 nations or territories of Africa, members of the AU. A nation or territory is considered as an organized political community under one government. AMR cuts across multiple ministries and sectors, including agriculture, fisheries, livestock, health, environment, water and forestry. Communication that targets each sector specifically could facilitate the uptake of awareness activities.

What part do they play in the AMR scheme?

Governments of Member States are wholly responsible for designing, resourcing and implementing comprehensive national AMR polices and strategic plans using the One Health approach.

What is their role in AMR risk mitigation?

- coordinate and engage all stakeholders in the development, implementation and monitoring and evaluation of national AMR plans – including, but not limited to, relevant ministries and institutions responsible for human, animal, plant and environmental health in both the public and private health sectors; health professional organizations and associations; research councils and funders; universities; CSO; patient advocacy groups; and national and international non-governmental organizations;
- standardize AMR activities in line with the AMR NAP;
- enforce existing legislation that impacts AMR;
- mobilize resources;
- implement national AMR public awareness-raising campaigns; and
- ensure pre-service and in-service training of healthcare professionals on AMR.

5.2 Practitioners

i. Health workers

Who are they?

All people engaged in actions whose primary intent is to enhance health. These human resources include clinical staff, such as physicians, nurses, pharmacists and dentists. They also include management and support staff, in other words those who do not deliver services directly, but who are essential to the performance of health systems, such as managers, ambulance drivers and accountants.

What part do they play in the AMR scheme?

Clinical staff members are involved in the prescription and administration of antimicrobials and are therefore important in the careful use of antimicrobials. Laboratory staff members are involved in sample testing to aid proper diagnosis and appropriate prescription. They also carry out antimicrobial susceptibility testing which determines the efficacy of a given antimicrobial against a microorganism (germ).

What is their role in AMR risk mitigation?

- adopt good infection prevention and control practices – ensuring hands, instruments and the environment are clean;
- promote careful use of antimicrobials – only prescribing and administering antimicrobials when they are needed, according to up-to-date evidence-based treatment guidelines;
- support AMR surveillance – reporting antimicrobial-resistant infections to surveillance teams;
- to demonstrate good stewardship – talking to patients about how to take antimicrobials correctly, about AMR and the dangers of misusing antimicrobials;
- promote good IPC practices – talking to patients about infection prevention (for example, vaccination, handwashing, practicing safer sex and good respiratory hygiene, such as covering the nose and mouth when sneezing); and
- prevent and control infections/immunization – encouraging patients to take or update their immunization where appropriate. Immunization plays a key role against AMR by preventing infectious diseases, thereby reducing the need for antimicrobials and their inappropriate use.

ii. Pharmacists/veterinary pharmacists

Who are they?

A pharmacist is a health professional who formulates, dispenses and provides clinical information on drugs or medications to patients and other health professionals in a hospital setting or a community pharmacy setting. They are also involved in the manufacture and distribution of medicines. Veterinary pharmacists are health professionals in animal health who are involved in dispensing veterinary medications and supplies; complying with regulations; advocating for quality therapeutic practices; and providing consultative services, research, and education.

What part do they play in the AMR scheme?

Pharmacists are involved in dispensing medicines, so they are crucial in the careful use of antimicrobials, as they explain to the patients how the medicines should be taken. Those involved in drug manufacturing ensure that the medicines manufactured are of the right quality, as falsified and substandard medicines contribute to AMR.

What is their role in AMR risk mitigation?

- counsel patients properly on how to take dispensed medicines, including emphasizing the need for prescribed doses to be finished and talking about AMR with patients;
- offer their expertise on the most appropriate antimicrobials to be used, within a multidisciplinary team comprised of other health professionals in a hospital setting;
- only use approved sources of medicines;
- manage antimicrobials in line with best storage and transportation practices;

- ensure antimicrobials are only sold under the valid prescription of an authorized doctor or veterinarian, including in the case of nationally regulated internet sales;
- ensure all products are appropriately labelled and provide clear and correct information on product use and expiry;
- comply with the codes of advertising that are compatible with the principles of responsible and careful medicine use;
- keep detailed records (supplier, prescriber, user, product name, batch number, quantity, shelf life) to allow for traceability;
- cooperate with relevant authorities and provide detailed sales data for the monitoring of antimicrobial use;
- ensure all staff members are adequately qualified by participating in and providing training on the appropriate storage, transport and disposal of antimicrobials; and
- adhere to regulatory frameworks and international standards.

iii. Veterinarians/Veterinary paraprofessionals

Who are they?

Veterinarians are health professionals with the appropriate qualification, registered or licensed by the relevant veterinary statutory body of a country, to practice veterinary medicine/science in that country. Veterinary paraprofessionals are health professionals authorized by the veterinary statutory body to carry out certain designated tasks (dependent upon the category of veterinary paraprofessional) in a territory delegated to them under the responsibility and direction of a veterinarian. The tasks for each category of veterinary paraprofessional should be defined by the veterinary statutory body depending on qualifications and training, and in accordance with need.

What part do they play in the AMR scheme?

Clinical staff members are involved in the prescription and administration of antimicrobials and are therefore important as they provide professional oversight of antimicrobial use. Veterinary microbiologists are involved in sample testing to aid in proper diagnosis and appropriate prescription. They also carry out antimicrobial susceptibility testing which determines the efficacy of a given antimicrobial against a microorganism.

What is their role in AMR risk mitigation?

- promote good animal husbandry, hygiene and biosecurity practices, and vaccination programmes;
- support the careful use of antimicrobials – only prescribing and administering antimicrobials after a clinical examination of animals and only when necessary. The choice of appropriate antimicrobials needs to take into account the farm records of previous AMU and the farm's epidemiological history; clinical experience and diagnostic insight with reference to available relevant guidelines (for example, of national veterinary association); when available, diagnostic laboratory information (culture and sensitivity testing); pharmacodynamics (activity against pathogens involved); pharmacokinetics (tissue distribution, efficacy at infection site); and the WOAH list of antimicrobials of veterinary importance. If the first-line treatment fails, the second-line treatment should be based on the results of diagnostic tests, including sensitivity testing. In the absence of test results, a different class or sub-class should be used. Combinations of antimicrobials can only be used if supported by scientific evidence;
- adopt other alternatives to antimicrobials for prophylactic interventions such as vaccinations, herd health programs and farm biosecurity measures – more information available from WOAH Terrestrial and Aquatic Codes and Standards;[5]

[5] https://www.woah.org/en/what-we-do/global-initiatives/antimicrobial-resistance/#ui-id-4.

- continually train clients and raise awareness on AMR, in order to keep knowledge up-to-date and ensure implementation of good antimicrobial use practices. The information shared should be on disease prevention and management; the ability of antimicrobials to select for resistance; the significance this has for human and animal health; the need to observe responsible and careful usage recommendations; appropriate storage conditions and proper disposal; and record keeping;
- support efficient data recording. The data records should include the quantity of antimicrobials used per animal species; details of all antimicrobials supplied to each farm; treatment schedules (including animal ID and withdrawal period); antimicrobial susceptibility data; comments concerning the response of animals to treatment and adverse any reactions, including lack of response due to AMR;
- support AMR surveillance – reporting antimicrobial-resistant infections to surveillance teams;
- advise against the use of medicated feed unless under veterinary prescription; and
- improve legislation, policies and frameworks for the production, manufacturing, importation, distribution and use of antimicrobials in the veterinary sector.

iv. Environment and plant health practitioners

Who are they?

Environmental health practitioners are dedicated to protecting public health by monitoring and recommending solutions to reduce pollution levels. Plant health practitioners are academically trained across agricultural science disciplines, through courses and internships in both pest-related (entomology, plant pathology, nematology, weed science and other pests) and plant-related (agronomy, horticulture, soil science, etc.) subjects. Their purpose is to directly serve agriculture and the general public, through the prevention, diagnosis and management of plant health problems.

What part do they play in the AMR scheme?

Environmental health practitioners are concerned with the environmental load of antimicrobial resistant germs, genes, residues and their metabolites, resulting from the use of antimicrobials in humans, plants and animals. Plant health practitioners are involved in the careful use of pesticides which play an important role in reducing losses in crop production.

What is their role in AMR risk mitigation?

- promote integrated manure management to optimize handling of terrestrial animal manure from collection, through storage and treatment, to application. Through this process, it is possible to reduce harmful germs and antimicrobial loads and prevent nutrient losses, to a large extent, within the site-specific circumstances;
- collect and treat the wastewater and manure produced in large-scale livestock operations and aquaculture systems, before reusing or disposing of it;
- promote improved manure treatment practices and manure treatment facilities, and develop and implement national standards;
- adopt the multiple barrier concept whenever wastewater is used in plant irrigation. The number of barriers (one to three) depends on the level of wastewater treatment and the nature and use of the plant;
- promote Integrated Pest Management (IMP) to minimize the use of pesticides, including strictly regulating the use of antimicrobial pesticides. IPM is an ecological approach to growing healthy crops;
- support prevention and distribution of plant pest and diseases through the implementation of the International Standards for Phytosanitary Measures (ISPMs);
- support the implementation of the International Code of Conduct on Pesticide Management which provides guidance on best practices in managing pesticides throughout their life-cycle; and

- monitor the release and prevalence of antimicrobials in the environment and drinking water. Data and analyses can help us better understand and provide targeted responses to the concentration, location and trace of antimicrobial pollution.

v. Private sector

▷ Pharmaceutical industry

Who are they?

The pharmaceutical industry develops, produces, and markets drugs or pharmaceuticals licensed for use as medications in human, animal and plant health.

What part do they play in the AMR scheme?

The leadership and influence of the pharmaceutical industry is central to the fight against AMR. The role of the pharmaceutical industry is to develop and manufacture safe and effective antimicrobials. The industry should help fight AMR by producing quality medicines and ensure they end up in the right hands and are used carefully and responsibly. They need to ensure the safety, efficacy and quality of their antimicrobials, and adhere to good manufacturing practices.

What is their role in AMR risk mitigation?

- ensure the safety, efficacy and quality of their antimicrobials and adhere to good manufacturing practices;
- obtain marketing authorisation and comply with the codes of advertising –namely, not advertising products containing antimicrobial agents directly to the end user;
- only use officially authorised distribution systems for the marketing and export of antimicrobials;
- cooperate with relevant authorities and share detailed sales data for twhe monitoring of antimicrobial use and the surveillance of AMR;
- highlight the risk of AMR, and the need for responsible and careful use, whenever providing or supplying antimicrobials;
- participate in training on the prudent and responsible use of antimicrobials;
- contribute to research to help combat AMR, as well as prioritising and focussing on developing alternatives to antimicrobials, such as vaccines or rapid and affordable diagnostic tests; and
- adhere to regulatory frameworks and international standards.

▷ Animal feed manufacturers

Who are they?

Animal feed manufacturers are involved in the production of animal feed, including feed containing antimicrobials.

What part do they play in the AMR scheme?

Feed manufacturers have a key role to play in preserving antimicrobial efficacy and availability. By limiting the access of medicated feed to veterinary prescription, they can counter the overuse and misuse that leads to increased AMR. Producers of animal feed containing antimicrobials should adhere to best practice guidelines to combat AMR.

What is their role in AMR risk mitigation?

- be approved to manufacture medicated feed, and follow all legal requirements for medicated feed;
- only use approved sources of medicine in order to ensure that only approved sources of medication are added to feed, at the level and for the species and purpose permitted by the drug premix label or veterinary prescription;
- avoid contamination with harmful agents and prevent contamination of non-medicated feed;
- implement best manufacturing practices for optimal hygiene and appropriate mixing in order to guarantee the homogeneity of antimicrobials in the feed;
- only supply farmers following a veterinary prescription;
- ensure appropriate labelling (level of medication, approved claim, intended species, warnings and precautions), with product identification (ingredients, inclusion rates), directions of use and withdrawal time;

- keep appropriate records to allow for traceability; and
- cooperate with the relevant authorities, sharing sales and distribution data for monitoring AMU.

▷ Agricultural extension providers

Who are they?

Agricultural extension officers are intermediaries between researchers and farmers. They operate as facilitators and communicators, helping farmers in their decision-making and ensuring that appropriate knowledge is implemented in order to obtain the best results regarding sustainable production and general rural development.

What part do they play in the AMR scheme?

They provide critical information to the farmers to help them adopt practices that assist AMR control.

What is their role in AMR risk mitigation?

- continually train clients and raise awareness on AMR, in order to keep knowledge up-to-date and ensure implementation of good AMU practices. The information shared should be on disease prevention and management; the ability of antimicrobials to select for resistance; the significance this has for human and animal health; the need to observe responsible and prudent use recommendations; appropriate storage conditions and proper disposal; and record keeping;
- promote rational use of antimicrobials, such as in antimicrobial pesticides;
- promote proper disposal of expired drugs;
- promote good agricultural practices at farm level.

▷ Academia and research institutions

Who are they?

The environment or community concerned with the pursuit of research, education and scholarship.

What part do they play in the AMR scheme?

The provision of high-quality education is key to equipping potential professionals with the necessary knowledge to perform efficiently and fight against AMR effectively. In order to adequately equip graduates with the necessary skills and competencies, their curriculums need to cover relevant topics on the development of AMR, Antimicrobial Stewardship and hygiene, and infection prevention and control.

What is their role in AMR risk mitigation?

- mobilize academic knowledge and information resources to benefit AMR stakeholders on the ground;
- provide pre-service and in-service training of health professionals on AMR;
- develop capacities, stimulate innovative research and disseminate knowledge and experience;
- engage in AMR multistakeholder processes and dialogues;
- raise awareness on key AMR issues; and
- produce AMR evidence data.

vi. Development partners/ donors/NGOs

Who are they?

Development partners are organizations working in partnership with national and local government bodies. They offer financial or technical support and include bilateral and multilateral donors, as well as international and local NGOs.

What part do they play in the AMR scheme?

Given the global threat of AMR and the need to mitigate its public, animal health and economic impact, various development partners continue to mobilize resources to support Member States in addressing various aspects of AMU and AMR in their countries.

What is their role in AMR risk mitigation?

- mobilize resources;
- ensure the complementarity of AMR intervention;
- ensure focused support that reflects the priorities of countries and regions; and

- foster equitable distribution of resources across regions, ensuring that all countries meet the threshold for the capacity and ability to address the emergence and spread of AMR.

vii. Civil Society organizations

Who are they?

Civil Society organizations (CSOs) are made up of citizens and people from different regions around the world organized into constituencies, associations and groups in order to make their voices heard.

What part do they play in the AMR scheme?

Although their involvement in AMR has been limited to date, CSOs have a long history of transforming public, animal, plant and environmental policies and practices through advocacy, education and community organization. Engaging CSOs in AMR will ensure that civil societies utilize their capacity for advocacy and their experience to encourage governments to take action on AMR.

What is their role in AMR risk mitigation?

- ensure that excess use of antimicrobials is curtailed while critical access is not;
- promote public awareness of the dangers of AMU and AMR for humans, animals, plants and the environment;
- promote consumer demand for food free from antimicrobial residues;
- promote patient demand for health care that is free from the risk of nosocomial infections; and
- promote animal welfare standards in order to reduce stress on animals and their susceptibility to infection, hence limiting the need for antimicrobials.

viii. Youth

Who are they?

The United Nations, for statistical purposes, defines "youth" as those persons between the ages of 15 and 24 years, without prejudice to other definitions by Member States.

What part do they play in the AMR scheme?

The youth are consumers of antimicrobials and for those involved in agriculture, they also use antimicrobials for animals or in pesticides for plants.

What is their role in AMR risk mitigation?

- employ responsible use of antimicrobials;
- consume antimicrobials only on medical prescription;
- comply with medical prescription (dose, duration, frequency, etc);
- not to advise or give treatment to someone else;
- support good management of drugs in order not to pollute the environment;
- prevent infection through vaccination and compliance with hygiene measures; and
- raise awareness among the youth.

ix. Professional bodies/associations

Who are they?

A professional body/association is an organization whose members practice a profession or occupation with which the organization maintains oversight of or ensures the exchange and continuous development of knowledge, skills, conduct and practices within that profession.

What part do they play in the AMR scheme?

Health and veterinary professional bodies are important platforms for experience, knowledge and information sharing on AMR. They also regulate the prudent use of medicines, including antimicrobials, through legislation, guidelines, SOPs and certificates for professional development and practice. There is evidence that education and knowledge received about AMU and AMR is sometimes insufficient and does not adequately prepare students and professionals for practice. Therefore the role of professional bodies in bridging this gap is essential.

What is their role in AMR risk mitigation?

- provide a forum for sharing good practices in regulating, marketing, prescribing and administering antimicrobials;

- advocate for learning modules specific to prudent AMU, IPC and AMR in academic and professional courses;
- advocate, negotiate with and advise Governments on adopting appropriate evidence-based policies and actions on AMU and AMR;
- encourage and promote efficacy and responsibility with regards to professional practice;
- exercise effective control of professional conduct within their fields; and
- determine the minimum standards of tuition and training required for a profession, including on AMU and AMR.

x. Student bodies

Who are they?

A student body is an organization grouping together students from a particular college or university.

What part do they play in the AMR scheme?

Student bodies are main stakeholders in addressing AMR in educational settings, by providing important platforms for experience, knowledge and information sharing on AMR. They are also important in advocating for AMU at the community level.

What is their role in AMR risk mitigation?

- advocate for the inclusion of AMR/AMU incurricula and professional courses;
- disseminate information and support campaigns in their schools/universities and at community level;
- organize meetings (congresses and symposia) in order to facilitate exchanges between members and national or international projects and to foster educational opportunities; and
- support awareness-raising.

xi. Regional media

Who are they?

Mass media are those channels of communication which can expose large numbers of people to the same information at the same time. They include media which conveys information by sound (radio, audio cassettes), moving pictures (television, film, video) and print (posters, newspapers, leaflets).

What part do they play in the AMR scheme?

To prevent and control the spread of AMR, media professionals can become media champions and advocates – becoming the voice and face of the fight against AMR, calling on national governments and stakeholders to invest in this fight in order for antimicrobials are preserved for as long as possible and lives are saved.

What is their role in AMR risk mitigation?

- spread awareness on AMR;
- promote careful use of antimicrobials across all sectors;
- offer information on government contact details to report AMR issues;
- answer AMR questions; and
- reinforce or repeat information and advice. Information heard at a meeting or passed on by a health professional can soon be forgotten. It will be more easily remembered if reinforced by mass media.

5.3 End users of antimicrobials

i. Farmers

Who are they?

Farmers are the primary producers of food from plant and animal origin. They till the soil to grow food for human and animal consumption, and cash crops for the industries. They also rear terrestrial and aquatic animals for both food and as raw materials for industrial use. They use both land and water bodies as the medium for their activities, thereby having constant

interaction with these environmental components. Farmers are mainly categorized into crop, livestock and fish farmers.

What part do they play in the AMR scheme?

Livestock and fish farmers raise animals for food and therefore have obligation of ensuring animal health. They primarily use antimicrobials to treat bacterial, viral, fungal and parasitic diseases in animals. With the intensification of farming activities to feed the ever-growing global population, and with modern technological advancements in place, current management practices of most farmers have led to the inappropriate use of antimicrobials in both livestock and fish farming. This has escalated the build-up of residues and the development and transmission of antimicrobial resistant germs and genes. Over and underdosage of antimicrobials, as well as misapplication, are all issues. In many cases, a blanket treatment is administered to all animals in a pen, even if few are sick. Aside treatment, farmers also use antimicrobials for preventive purposes, issuing sub-optimal doses that gives rise to the emergence and spread of resistant genes. Furthermore, antimicrobials are being used as growth promoters which are added to the feed of healthy animals to speed up growth, or to layer poultry to increase egg-laying capacity.

Similarly, crop farmers use pesticides to promote plant health and productivity in their fields. This misuse and overuse of antimicrobial pesticides is a health hazard. Despite the fact that the quantities used are smaller than those used in the livestock and fishery sectors, the residue in food crops can still cause the emergence of AMR and pose a risk to human, animal, plant and environmental health.

The improper disposal of unused and expired antimicrobials and waste matter from livestock, fish and crop farms, contaminates the environment, promoting the development of AMR in it. This not only threatens human health, but also animal health and welfare, plant health, and the sustainable production of livestock, fish and crops. This has a direct impact on food security and people's livelihoods.

What is their role in AMR risk mitigation?

- develop management and biosecurity innovations in order to minimize the importation and spread of diseases on and outside farms;
- use non-antimicrobial growth promoters such as enzymes, probiotics and prebiotics;
- promote better use of alternative animal health technologies, such as vaccines to control infectious disease vector control, and disinfectants;
- patronize enhanced diagnostics to improve appropriate drug selection, dosing and length of treatment, and to identify prevalent resistance traits among pathogens in order to avoid the use of ineffective drugs;
- only use antimicrobials prescribed by a veterinarian and observe dosage and usage period;
- observe withdrawal periods in crops and animal production;
- reduce dependence on antimicrobials for semen and other matter preservation;
- reduce stocking density and increase genetic diversity of livestock;
- increase use of genetic traits for disease resistance;
- employ better waste management;
- adhere to regulatory frameworks and international standards;
- only acquire antimicrobials from correct sources;
- keep good and accurate farm records; and
- share accurate and timely farm data in order to support AMR surveillance systems.

ii. Food processing sector

Who are they?

Food processing is any method aimed at transforming agricultural products into food products or transforming one form of food into another, using

one or a combination of various processes. The sector involves activities such as washing, chopping, cooking and preserving food by (a) modern methods such as refrigeration, canning, pasteurisation, irradiation; (b) traditional methods such as drying, salting, smoking and fermentation; and adding ingredients to food, for example to extend shelf life. Food processing can involve individual households, small production units or industrial manufacturers.

What part do they play in the AMR scheme?

Food processing units and individuals are involved in food handling, which requires minimum standards to ensure nutritional benefit and consumer health (humans and animals). The activities should be carried out in such a way as to avoid food contamination by germs, some of which can be pathogenic and/or carriers of AMR factors. Furthermore, activities, especially in an industrial setting, should aim at limiting contamination of the environment with waste that may contain risky germs. In feed production, antimicrobials are sometimes also added in low concentrations to animal feed as a way of stimulating growth and this can promote AMR.

What is their role in AMR risk mitigation?

Apply good food safety management practices;

- ensure food is stored and prepared in a clean environment to avoid cross-contamination;
- follow good hygienic practices to control cross-contamination in food processing and preparation environments;
- practise good personal hygiene, such as hand washing with soap and water;
- practice the 4Cs – clean well, cook thoroughly, chill correctly, avoid cross-contamination;
- promote greater awareness through health extension work that reaches out to farmers, medical and veterinary professionals, consumers and even children;
- better enforce existing regulations by governments; and
- ensure proper waste management to avoid environmental contamination.

iii. Private clinics (human health)

Who are they?

These are establishments or hospital department owned by a for-profit company or a nonprofit organization that are privately funded, and where outpatients are given medical treatment or advice.

What part do they play in the AMR scheme?

Clinical staff members are involved in the prescription and administration of antimicrobials and are therefore important in ensuring their careful use. Laboratory staff members are involved in sample testing to aid in proper diagnosis and appropriate prescription. They also carry out antimicrobial susceptibility testing which determines the efficacy of a given antimicrobial against a microorganism (germ).

What is their role in AMR risk mitigation?

- adopt good IPC practices – ensuring hands, instruments and the environment are clean;
- promote prudent use of antimicrobials – only prescribing and administering antimicrobials when they are needed, according to up-to-date evidence-based treatment guidelines;
- support AMR surveillance – reporting antimicrobial-resistant infections to surveillance teams;
- to exercise good stewardship – talking to patients about how to take antimicrobials correctly, about AMR and the dangers of misusing antimicrobials;
- promote IPC practices – talking to patients about infection prevention (for example, through vaccination, hand washing, practicing safer sex and good respiratory hygiene, such as covering the nose and mouth when sneezing);
- prevent and control infection and immunization – encouraging patients to take or update their immunization where appropriate. Immunization plays a key role against AMR by preventing infectious diseases, thereby reducing the need for antimicrobials and their inappropriate use.

iv. Private clinics (animal health)

Who are they?

These are facilities providing prevention, cure and alleviation of disease and injury in animals. They are owned by for-profit companies or non-profit organizations that are privately funded.

What part do they play in the AMR scheme?

Clinical staff members are involved in the prescription and administration of antimicrobials and are therefore important in the prudent use of antimicrobials. Veterinary microbiologists are involved in sample testing to aid in proper diagnosis and appropriate prescription. They also carry out antimicrobial susceptibility testing which determines the efficacy of a given antimicrobial against a microorganism (germ).

What is their role in AMR risk mitigation?

- promote good animal husbandry, hygiene and biosecurity practices, and vaccination programmes;
- promote prudent use of antimicrobials – only prescribing and administering antimicrobials after a clinical examination of animals and only when necessary. The choice of appropriate antimicrobial needs to take into account farm records of previous AMU and a farm's epidemiological history; clinical experience and diagnostic insight with reference to available guidelines (for example, from a national veterinary association); when available, diagnostic laboratory information (culture and susceptibility testing); pharmacodynamics (activity against pathogens involved); pharmacokinetics (tissue distribution, efficacy at infection site); and the WOAH list of antimicrobials of veterinary importance.
- continually train clients and raise awareness on AMR, in order to keep knowledge up-to-date and ensure implementation of good AMU practices. The information shared should be on disease prevention and management; the ability of antimicrobials to select for resistance; the significance this has for human and animal health; the need to observe responsible and careful usage recommendations; appropriate storage conditions and proper disposal; and record keeping;
- record data, including the quantity of antimicrobials used per animal species; details of all antimicrobials supplied to each farm; treatment schedules (including animal ID and withdrawal period); antimicrobial susceptibility data; and comments concerning the response of animals to treatment and adverse any reactions, including lack of response due to AMR;
- support AMR surveillance – reporting antimicrobial-resistant infections to surveillance teams; and
- advise against the use of medicated feed, unless under veterinary prescription.

v. General public

Who are they?

The general public herein refers to those members of society who do not belong to any of the organizations or target groups identified above.

What part do they play in the AMR scheme?

Human behaviour plays a very important role in maintaining or attenuating the phenomenon of AMR. Indeed, humans can accelerate or diffuse the problem of AMR through their behaviour and actions. Misuse, abuse and self-prescription of antimicrobials; the lack of respect for hygiene standards; the poor management of waste; and the poor uptake of effective infection prevention and control measures are all factors that aggravate the problem of AMR.

What is their role in AMR risk mitigation?

- employ responsible use of antimicrobials;
- consume antimicrobials on medical prescription only;
- comply with medical prescription (dose, duration, frequency and so on);
- not to advise or give treatment to anyone else;
- manage medicines well as not to pollute the environment; and
- adopt infection prevention measures – vaccination and compliance with hygiene measures.

6. Communication guidelines, channels/ events/tools and key messages

Results from an online discussion entitled "Improving communications for Antimicrobial Resistance (AMR) in Africa: How should we move forward?" were published with the following recommendations on communication guidelines and channels:[6]

6.1 Communication guidelines

A one-size-fits-all approach does not work in all contexts, hence the need to use different communications strategies to capture the attention of different stakeholders. The following suggestions could make AMR communication more effective in general:

i. Keep the message simple

Messages used to raise awareness on AMR need to be simple and accessible. Keeping technical language to a minimum and using real-life examples will help people internalize the message.

ii. Consistently use the term Antimicrobial Resistance (AMR)

To avoid confusing audiences and diluting the message, the term "antimicrobial resistance" should be consistently used. Rather than splitting communication efforts along different categories of antimicrobial drugs (antifungal, antibiotics and so on), using a single term to refer to problems arising from the overuse of these medications would streamline the communications campaign. Using AMR as a general category would also simplify efforts aimed at making communication less technical and more accessible to rural stakeholders.

iii. Make AMR more relatable and tangible as an issue

AMR issues are often perceived as something abstract, especially when individuals do not know anyone who has experienced any concrete negative effects. It would, therefore, be helpful to present examples of real people who have suffered losses due to AMR. Examples should also include cases where antimicrobials have been used incorrectly and therefore failed to produce the expected health benefits, while still costing money.

iv. Deliver targeted communication

It is important to design communication efforts based on the intended audience. Factors that greatly influence the perception of risk among a particular audience – such as level of awareness, prior knowledge, general attitude to health and safety, behavioural tendencies present in a given community, and socio-cultural differences – are sometimes ignored when attempting to communicate with that audience. Generic terms (for example, prudent, judicious or careful), which are often employed to define the proper use of antimicrobials, can carry very different meanings and connotations across different cultures.

[6] http://www.fao.org/policy-support/tools-and-publications/resources-details/en/c/1371889/.

v. Multisectoral collaboration

There is a need to build coordinated multi and intersectoral collaborations, both for the creation and implementation of AMR communication initiatives. A proper coordination mechanism will help bring together relevant actors in order to provide information and develop strategies on how to address AMR, including effective communication strategies.

vi. Engage media

There should be frequent and systematic engagement with media personnel and journalists to help them understand the issue of AMR and provide them with accurate information. A competitive grant-giving system could provide an incentive for journalists to tackle the topic. At the same time, it would be crucial to engage in long-term partnerships with relevant media organizations to ensure that AMR stays on their agenda and to develop contextualized and continuous communications campaigns.

vii. Physical workshops

While traditional and social media are without doubt a crucial way to engage stakeholders, workshops are also important. They constitute an effective and well-tested method of communication at field level in many African countries. Getting knowledgeable people to spend time in physical proximity with stakeholders helps to build trust and facilitates the sharing of personal experiences, allowing for the seamless integration of question-and-answer rounds that can help clarify important messages. Focus group discussions are a particularly useful format. These allow experts to present their information while at the same time giving them a sense of existing options, priorities and practices which can help in adapting their communication approach.

viii. Clearly link the communication to the desired behaviour change

One pitfall to avoid is focusing too much on the communications side of things and losing sight of the end goal – namely, behaviour change. Therefore, it needs to be clear from the very beginning what the communication efforts aim to achieve and what the stakeholders are expected to do once they have been properly informed on the issue. It should be very clear that the intent is not to demonize antimicrobials or to discourage their use completely; rather, the messages should stress that antimicrobials can be an important tool when used properly and only when necessary. Enforcing legislation and making it difficult for the public to access antimicrobials easily contributes to making behaviour change easier.

ix. Ensure communication in the local language

To effectively reach stakeholders at the grassroots level, like farmers, it is indispensable to communicate in the local language. Clear and concise messaging on AMR, in various local languages, can be disseminated through local radio and television networks and can increase the likelihood of uptake. The same is true for booklets and small pamphlets used to inform discussions at the local level.

6.2 Communication channels

There is a need to make use of both traditional and modern media. While social media is an effective tool to reach out to the younger generation and to connect with food consumers, traditional communication channels, especially radio programming, are an effective way to reach people in more remote rural areas.

i. Social media

Taking advantage of social media channels to disseminate information and engage stakeholders is paramount. However, it is important to carefully assess which social media channels are used by the target audiences, keeping in mind that this can vary significantly across countries and age groups. This said, a strong presence of the topic on social media does have the added benefit that traditional media are more likely to take notice of the issue.

ii. Storytelling

Storytelling is a powerful tool to achieve behaviour change. Without first-hand evidence of the detrimental effects of AMR, it is hard for stakeholders to get invested in it as a problem to be addressed. Real-life stories of individuals who have been impacted by AMR will make communication messages much more relatable. When properly formulated, these can also be presented as success stories, engrossing and motivational.

iii. Educational curricula

AMR should be included in educational curricula at all levels. Seminars should be held at regular intervals for teachers in order to give them a better understanding of the issue, allowing them to convey information without the need to rely on external experts.

iv. Interpersonal communication channels

Efforts to introduce AMR-related messages into existing group activities, such as theatre groups or youth organizations, should be considered, particularly when it comes to raising awareness among the youth. Such efforts can have the additional benefit of making young people a part of communication efforts, therefore increasing ownership of the information and potentially its uptake by the whole community.

v. Visual communication

Producing publications such as posters, infographics and videos in local languages and using simple language can help make messages more accessible and interesting. Comics are an additional effective way to convey messages through storytelling.

vi. Traditional institutions

To ensure engagement with local stakeholders and to give credibility to AMR communications campaigns, it is important to involve local institutions, both official and customary. In many rural areas the authority of traditional or tribal leaders is strong and these leaders should therefore be involved in community level meetings. The same applies to religious leaders who, as trusted members of their communities, can be instrumental in adapting messages to resonate with these communities.

6.3 Communication and advocacy table

AMR stakeholder				
Targets	**Final outcome**	**Message**	**Communication channel/events**	**Communication material/tools**
RECs/Member States	Stronger governance and capacity for AMR mitigation activities	• AMR is a continental and global health risk (lessons learned from COVID-19) • One Health collaboration is crucial for effective prevention and response • We must act now to save lives • AMR is a global human, animal, plant and environmental health concern • It is a shared responsibility to prevent or minimize AMR • The tripartite and partners is supporting member countries in their fight against AMR, and to encourage the national ownership and implementation of international standards • Robust and holistic regulatory environment is key to control AMR • Acting today to protect the future efficacy of antimicrobials • Support countries in NAP implementation • Make AMR a priority. Commit resources to tackling AMR and meeting national AMR action plan targets now • Ensure AMR is firmly on the political agenda • Involve all stages of stakeholders in policy decisions: involving stakeholders from all stages of the food chain and across public and private sectors will help develop more effective and coherent policies and legislation.	• Trainings • Guidelines • Coordination meetings • Study tours • WAAW	• Policy briefs, reports • Brochures, training materials, audiovisual materials

Targets	Final outcome	Message	Communication channel/events	Communication material/tools
Health workers/ veterinarians/ veterinary paraprofes-sionals	Responsible and prudent prescription of AM Provide adequate guidance/advice to patients on use of AM	• AM should be prescribed only when necessary • Cross-cutting areas for AMR prevention measures (IPC, WASH, etc.) • Patients should receive advice/guidance on use and abuse of AM • AMR is a global human, animal and environmental health concern • Consider the list of AM agents of veterinary importance, when prescribing AM agent • Promote good IPC measures to reduce cross infection • Unnecessary lengthy duration of AM treatment and inap-propriate use of broad-spectrum AMs should be avoided • Use narrow- spectrum AMs wherever possible • Start conversations on good practices when treating animals with AMs • When visiting farms and dispensing medicines, discuss AMR and animal health with farmers to open a dialogue on the issue • Be part of the AMR movement. Create, join and talk at human, animal, plant and environment health clubs, groups and meetings in your area. Share examples of your work in AMR to encourage others to become AMR champions.	• Door-to-door visits • Trainings/ capacity-building workshops • Mass/local media • School visits • Farmers and field days • Continuous professional development	• Brochures • Posters • Training materials and courses • Jingles • Television/radio discussions • SOPs and guidelines • Literature reviews

Targets	Final outcome	Message	Communication channel/events	Communication material/tools
Pharmacists/ veterinary pharmacists	Responsible sale of AM Proper guidance on use of AM to clients	• AM should be sold when only needed – preferably with a doctor's prescription • National regulations to be enhanced • Patients should receive advice/guidance on use and abuse of AM • AMR is a global human, animal, plant and environmental health concern • Misuse and overuse of AMs are main drivers of AMR	• Door-to-door visits • Trainings/ capacity-building workshops • Mass/local media	• Brochures • Posters • Training materials and courses • Jingles • Television/radio discussions • Social media
Environment and plant health practitioners	AM waste management and occupational safety Improved awareness of AMR and the environment Improved monitoring and action plans	• Mind the impact of AM residues • Ecosystems underpin the health of the planet and in turn that of humankind. Nature plays a crucial role in combatting AMR, as it is both a recipient and a spreader of AMs. • The key reasons contributing to AMR include misuse and overuse of AMs in human health, food, animal production and agriculture, along with poor management of waste emanating from households, farms, factories and human and veterinary healthcare settings • Only prescribe pesticides as a last resort: pesticides are not the only solution. Only prescribe pesticides as a last resort for controlling diseases	• WASH measures • Mass/local media • Websites or online workshops • Contributions at regional and national African water weeks • Training for environmental practitioners (e.g. on monitoring and policy development) • Mass/local media training for environmental journalists	• Brochures • Television/radio discussions • Training materials and courses • Technical brief

Targets	Final outcome	Message	Communication channel/events	Communication material/tools
Pharmaceutical industry	Manufacturing capacity strengthened Development of new drugs (research and development)	• Discharging AMs (drugs) into the environment increases AMR • Adhere to appropriate waste management practices of AMs • Rational use of AMs reduces AMR • Adhere to good drug and pharmaceutical importation, manufacturing, distribution and disposal guidelines/ practices • Promote and participate in accredited drug dispensing outlet systems to improve access to quality medicines and pharmaceutical services	• Consultative meeting with stakeholders • Capacity-building workshops for manufacturers and regulatory inspectors	• Brochures • Posters • Training materials and courses for Regulatory Inspectors • AMR aide-mémoire for regulatory inspectors
Feed manufacturers	Responsible production of feeds	• AMR is a health risk • AMs shouldn't be added in feeds • Feed manufacturers have a key role to play in preserving AM efficacy and availability • Limiting the access of medicated feed to veterinary prescription • Counter overuse and misuse that leads to increased AMR • Adhere to best practice guidelines to combat AMR • As feed manufacturers it is your responsibility. Your leadership and influence is central to this fight, demonstrating your professionalism and commitment to the sector	• Discussion groups • Mass/local media • Trainings	• Brochures • Videos • Posters

Targets	Final outcome	Message	Communication channel/events	Communication material/tools
Agricultural extension officers		• Misuse and overuse of AMs such as pesticides leads to AMR • Negative implications to animal, plant, human and environmental health – increased resistance will lead to increased losses and mortality in animals and people • Good agricultural practices – farm biosecurity, vaccinations, IPC, IPM reduce the need for AMs including pesticides	• Door-to-door visits • Trainings/ capacity-building workshops • Mass/local media • School visits • Farmers and field days • Continuous professional development	• Jingles • Television/radio discussions • Posters • Flip charts for training
Academia and research institutions	Increased research and better integration of AMR in curricula	• AMR knowledge and evidence should be increased through research and teaching • More AMU/AMR data should be generated • Work with policy-makers to translate evidence into policies • Champion AMR as a key issue within your institutions: Make AMR a mandatory part of the curriculum. Lead cross-sectoral events and activities, including lectures, webinars and seminars to increase understanding of the spread of AMR across sectors • Share knowledge across borders: Invite researchers from around the world to speak at your institutions and share ideas on addressing AMR	• Study tours, discussions • Coordination meetings, technical collaborations	• Reports, assessments, technical documents, Scientific publications

Targets	Final outcome	Message	Communication channel/events	Communication material/tools
Development partners/ donors/NGOs	AMR Governance and implementation of national action plans strengthened	• Multisectoral coordination and collaboration should be promoted • Resource mobilization and financial support • Prioritize AMR in development projects and funding • Support high-risk countries/areas of work • Advocate for political commitments • Fill knowledge gaps: Support research and projects on AMR where evidence is lacking	• Regional and national workshops on resource mobilization	• Reports • Resource mobilization strategy • Mapping list/directory of partners, donors/NGOs • AMR implementation tools/guidance documents
Civil society	Implementation of national action plans Social cohesion on AMR Improved	• We are the champions for AMR control • Advocacy and joint implementation of communication strategy • Create dialogue: Discuss AMR with the communities in which you work, and raise awareness of the need to keep AMs working • Incorporate AMR actions into existing and new projects: Many actions to reduce the spread of superbugs have benefits for health, sanitation, disease control and waste management. These actions can be inexpensive to implement. Incorporate these into existing initiatives.	• Social media engagement • Meetings • Field interventions • Civil society capacity-building workshops	• Booklets • Brochures /pamphlets • Mapping list/directory of AMR civil society organizations

Targets	Final outcome	Message	Communication channel/events	Communication material/tools
Youth	AMR ambassadors and champions	• Use AMs if ONLY prescribed by your doctor • The future of AMs depends on us, we must handle AMs carefully • Raise public awareness • Raise your voice. Champion AMR as a priority for your student groups and associations and lead awareness raising activities such as walks, talks, and events within your communities • Share examples of your advocacy work on social media and with journalists. Inspire other groups to take action and become “AMR champions” • Look after yourself and your family • Effective self-care ways to help you feel better if there is no need for AMs • Self-limiting mild infections such as colds and most coughs, sinusitis, earache and sore throats don't need AMs • Follow hygiene and cough etiquettes to minimize the risk of spreading infection • Antibiotics do not prevent or treat viral infections including COVID-19; they only work on bacterial infections.	• Social media engagement • Community engagement • Social media influencers • Trainings and capacity-building workshops • AMR as part of school club activities	• Communication materials • Booklets, brochures, Pamphlets • Mass Media (Television, Radio) • Social media platforms • Education (online courses)

Targets	Final outcome	Message	Communication channel/events	Communication material/tools
Professional bodies/student bodies	Inclusion of AMR into agenda and platform of professional student bodies Survey for decision-making Advocate on AMR related issues	• Survey on the implementation of communication strategy • AMR advocacy and dissemination of information on AMR • Consumer groups and professional associations can play a pivotal role in increasing the awareness about AMU	• Track progress against specific indicators • Door-to-door visits • Trainings/ capacity-building workshops • Mass/local media • School visits • Continuous professional development	• Reports • Social media • Continuing medical education and online courses on AMR • Policy briefs
Regional media	Awareness on AMR	• Raise public awareness • Share examples of your advocacy work on social media and with journalists • Inspire other communication experts to take action and become “AMR champions” • Supporting behavioural change models	• Broadcasting on AMR topics • Mass/ local media training for journalists	• Reports • Social media • Television, radio, videos

Targets	Final outcome	Message	Communication channel/events	Communication material/tools
Farmers	Prudent and responsible use of AM	• AMR is a health risk • Ensure safe husbandry practices for production of food including good nutrition, hygiene and animal welfare • AMR can be transferred between animals and humans and vice versa, therefore it is important to practice good hygiene to minimize the risk • Use AMs prescribed by your veterinarian in accordance with their labelling instructions • You have an important role of providing safe food to the community • Maintain and promote good agricultural practices throughout the production cycle • Keep the highest farm biosecurity standards all the time • Vaccinate your animals at the right time and space to prevent disease occurrence • Use only AMs that have been prescribed by a veterinarian • Acquire AMs from reliable sources • Never use AMs for prophylaxis and growth promotion • Spread the word, not the microbes! Tell other farmers and community members what you have learned about why it is important to use AMs responsibly • Only use pesticides as a last resort: Pesticides are not the only solution. Only use pesticides on your plants as a last resort for controlling diseases.	• Grass-root activity • Community engagement • Mass/local media • Dialogue • Local radio and television channels • Infographics for distribution • Jingles • Use of popular local artists • Channelling messages through schoolchildren to their parent farmers • Churches and mosques • Through government and private extension workers • Through farmer-based organizations	• Video, Brochure • Promotional item • Biosecurity posters

Targets	Final outcome	Message	Communication channel/events	Communication material/tools
Food processing sector		• Strengthening food hygiene practices can reduce food contamination • Follow good practices to precautions to control cross-contamination in food processing and preparation environment, including the kitchen • Practice the 4Cs: *Clean well *Cook thoroughly *Chill correctly *Avoid cross-contamination • Ensure food is stored and prepared in a clean environment to avoid cross-contamination. • Practise good personal hygiene, such as hand washing with soap and water • Discuss AMR with your colleagues, family, friends and community. • Encourage your workplace to develop and adopt measures that help reduce the spread of AMR. • Help keep AMs working for everyone. Follow your doctor's advice on whether you or your family need AM drugs. Always seek expert medical advice before taking AM drugs.	• Discussion groups • Mass/local media • Trainings	• Brochures • Videos • Posters

Targets	Final outcome	Message	Communication channel/events	Communication material/tools
General public	Community engagement	• AMR is a health risk • Do not purchase AMs from street corners • Do not buy AMs without a prescription • Do not share AMs with others • Get AMs only from a licensed health professional • Complete your full course of treatment as prescribed by your health professional • Get vaccinated to prevent infections • Practice good hygiene • AMs should be taken as prescribed, never saved for later • Appropriate use of AMs will slow down the development of AMR • There are very few new AMs in the development pipeline, which is why it is important we use our existing AMs wisely • Prevention of AMR is our shared responsibility. Everyone can take action • Good infection control measures can prevent AMR spread in both humans and animals • Consider use of alternatives to AMs, when indicated • Don't take AMs in the absence of clinical evidence of microbial infection • Ensure food is stored and prepared in a clean environment to avoid cross-contamination	• WAAW • Global Soil Symposium • World Veterinary Day • YouTube playlist • Videos • Tripartite interactive platform	• Knowledge, Attitudes and Practices Survey (KAP+) • Regional communication toolkits • Brochures, Posters and Pamphlets

7. Evaluation of communication efforts

Communications impact can be tracked via:

i. **Social media engagement:** Audience engagement, high level engagement, hashtag engagement, number of retweets (tracked using Hootsuite)

ii. **Web engagement:** Increased numbers of visitors, visits and length of visits to the AMR webpages (tracked using Google Analytics)

iii. **Media engagement:** Coverage, reach and piece quality (tracked using Meltwater)

iv. **Event attendance**

v. **Social science research:** Surveys, key informant interviews, focus group discussions and behavioural science experiments

A logical framework should be drafted to outline components of the strategy and action plan. This will include performance indicators, means of verification and assumptions made. Reporting should be made at the conclusion of each activity.

8. Workplan and budget

For any communication event/project, a clear workplan defining the objectives, the expected outputs/outcomes, the activities, the target stake-holders, the budget as well as a monitoring and evaluation plan should be appropriately elaborated.

For more information contact:

FAO
Regional Office for Africa
FAO-RAF@fao.org

WOAH
Regional Office for Africa
rr.africa@woah.org

UNEP
Regional Office for Africa
unep-africa@un.org

WHO
Regional Office for Africa
afrgocom@who.int

AFRICA CENTRES FOR DISEASE CONTROL AND PREVENTION
africacdc@africa-union.org

AFRICAN UNION INTER-AFRICAN BUREAU FOR ANIMAL RESOURCES
ibar.office@au-ibar.org

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