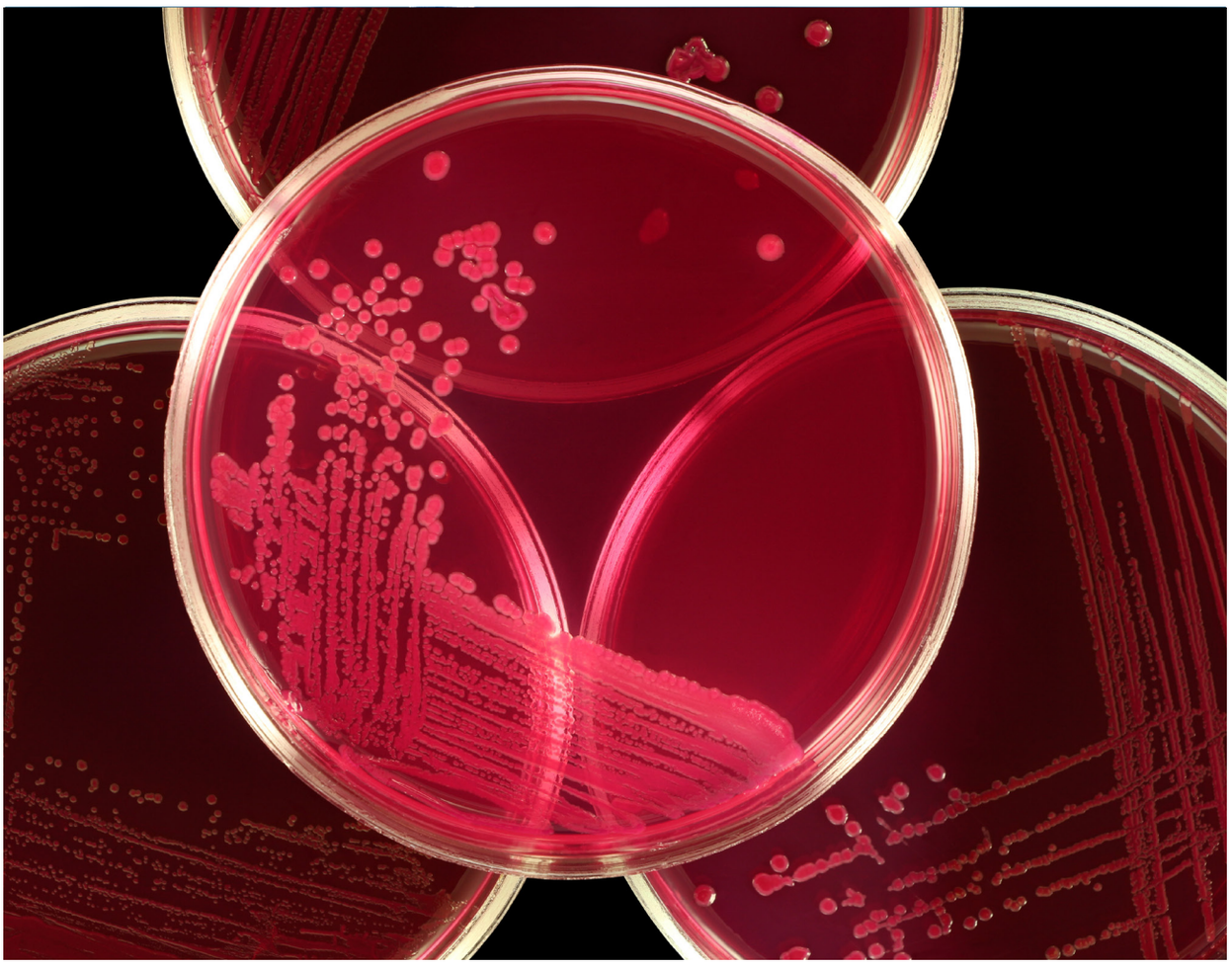
GOVERNMENT OF THE REPUBLIC OF MALAWI

Antimicrobial Resistance Strategy 2017 - 2022



GOVERNMENT OF THE REPUBLIC OF MALAWI

Antimicrobial Resistance Strategy 2017 - 2022

Towards a world free from fear of untreatable infections

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ACRONYMS AND ABBREVIATIONS

AIDS	Acquired Immune Deficiency Syndrome
AMR	Antimicrobial Resistance
ACSM	Advocacy, Communication, and Social Mobilization
CHSU	Community Health Sciences Unit
CSOs	Civil Society Organizations
DEA	Department of Environmental Affairs
DISTMS	Department of Information Systems and Technology Management Services
EQA	External Quality Assurance
FAO	Food and Agriculture Organization
GAP	Global Action Plan
GDP	Gross Domestic Product
GLASS	Global Antimicrobial Resistance Surveillance System
GOM	Government of Malawi
HIV	Human Immunodeficiency Virus
HMIS	Health Management Information System
HSSP	Health Sector Strategic Plan
IDSR	Integrated Disease Surveillance and Response
IEC	Information, Education and Communication
IHR	International Health Regulation
IHP	International Health Partnership
KCH	Kamuzu Central Hospital
MDAs	Ministries, Departments and Agencies
MDGs	Millennium Development Goals
MDR	Multidrug resistant
MIE	Malawi Institute of Education
MoA	Ministry of Agriculture
MoAIWD	Ministry of Agriculture, Irrigation, Water and Development
MoEST	Ministry of Education, Science & Technology
MoH	Ministry of Health
MOU	Memorandum of understanding
MP	Member of Parliament
NAP	National Action Plan
NCDs	Non-communicable Diseases
NICD	National Institute for Communicable Diseases
NORAD	Norwegian Agency for Cooperation Development
PHC	Primary Healthcare
PMPB	Pharmacy, Medicines and Poisons Board
PPE	Personal protective equipment
QECH	Queen Elizabeth Central Hospital
SDGs	Sustainable Development Goals
TA	Traditional Authority
TB	Tuberculosis
TOR	Terms of Reference
WG	Working group
WHA	World Health Assembly
WHO	World Health Organization
UHC	Universal Health Coverage
UN	United Nations
VDC	Village Development Committee
XDR	Extensively drug resistant

FOREWORD

Malawi has made remarkable progress in strengthening the health system and improving the health status of its people in the past years. However, the country continues to face challenges such as a high burden of infectious diseases including malaria, Tuberculosis (TB) and human immunodeficiency virus/acquired immune deficiency syndrome (HIV/AIDS), increased mortality and morbidity, increased burden of Non-communicable Diseases (NCDs) and shortage of medicines. Antimicrobial resistance (AMR) is a growing public health threat, and if we cannot work together to find solutions, we could enter a post-antibiotic era where gains in modern medicine would be reversed. Antimicrobial resistance threatens successful treatment of infections.

The Ministry of Health (MoH) realizes that reducing the emergence of AMR is key to sustaining the gains as well as achieving the goals and objectives stipulated in the Health Sector Strategic Plan (HSSP), health related Sustainable Development Goals (SDGs), and other health sector strategic plans. The MoH in collaboration with other sectors developed this AMR policy to make AMR a nationally recognized health issue and bring together key stakeholders who can actively embrace AMR as a priority. Furthermore, the policy will help key stakeholders to understand the burden of AMR and to enlighten the common approach in the implementation of National Action Plan that comprehensively addresses the prevention and containment of AMR in the One Health Approach. This document compliments the guidance found in other policy making frameworks with emphasis on how to use evidence to inform policy and decision making processes.

The successful implementation of this policy will require the multi-sectoral collaboration and dedication of the staff in the MoH, Ministry of Agriculture (MoA), Department of Environmental Affairs and the donor community. The Government of Malawi (GOM) will endeavor to channel resources to support antibiotics stewardship in all health programmes in the health sector. A special appeal is being made to all co-operating partners, both national and international, to support the continued support in the implementation of this policy.

I wish to thank all those who have given their time, ideas and expertise during the development of the strategy.

Finally, I would like to thank His Excellency the President, Professor Peter Mutharika for providing a conducive working environment in which this policy has been formulated and will be implemented.

Hon. Atupele Muluzi, MP
MINISTER OF HEALTH

PREFACE

The discovery of penicillin in 1928 heralded a revolution in the treatment of infections. But even at that time, Alexander Fleming warned about driving selection of resistance through inappropriate use. Since 1987, no new class of antibiotics has been discovered. The alarming trend in the rise of antibiotic resistance to existing antibiotics and the slow-down in the development of new antibiotics will lead to catastrophic consequences of not being able to treat common infections effectively. Conditions which were previously managed by first line antibiotics are becoming harder to treat resulting in severe illness and prolonged treatment.

The Malawi AMR Strategy document has been developed as a framework for managing AMR, limiting further increase in resistance, and improvement of patient outcome. In this policy, priority is given to resistance of other bacterial infections other than TB, as structures to address resistance in TB as well as in HIV, already exist in the Ministry of Health.

Dr. Dan Namarika
SECRETARY FOR HEALTH

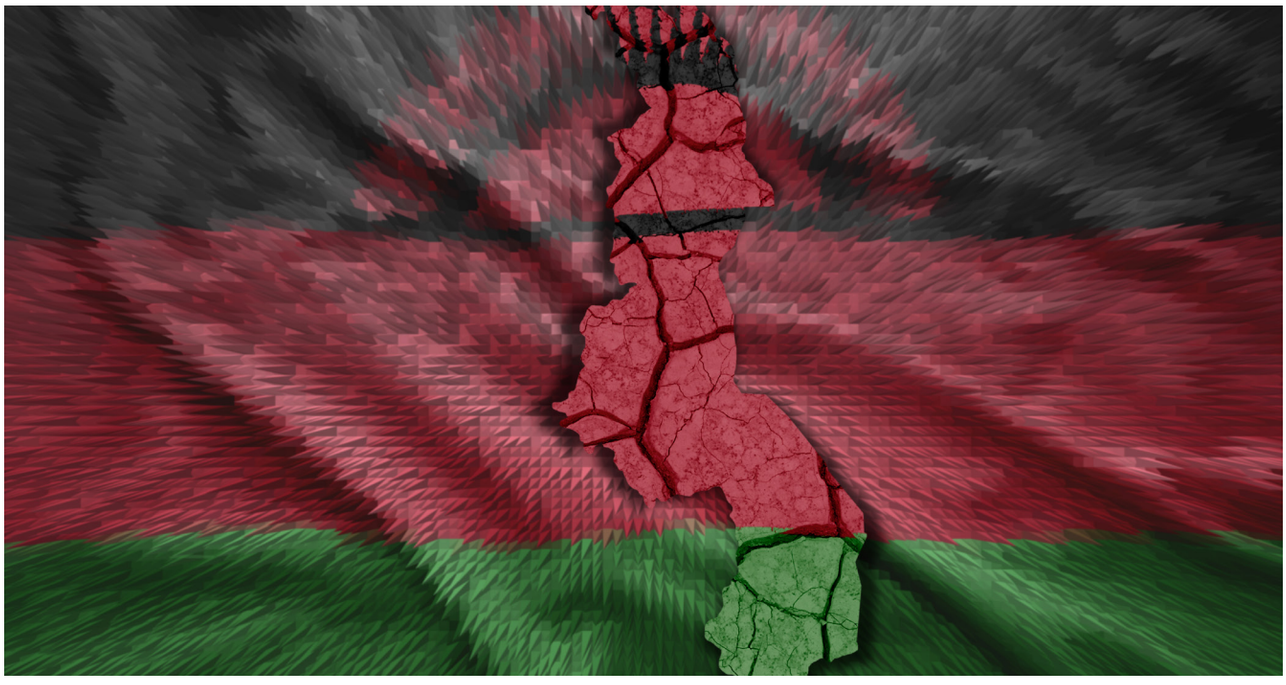
ACKNOWLEDGEMENTS

The MoH is grateful to all key stakeholders that participated in the process of developing this strategy. The MoH is particularly grateful to Wathando Mughandira, Chief Economist, Directorate of Planning & Policy Development for his overall technical guidance in the development of this strategy; Mrs. Watipaso Kasambara, Coordinator of AMR activities in Malawi; the AMR Core team; the drafting team comprising of Collins Mitambo, Gift Nangwale and Gerald Tegha.

The MoH wishes to thank Dr. Mirfin Mpundu, Head, Action against Antibiotic Resistance (ReAct), Africa & Executive Director, Ecumenical Network (EPN) and Dr. Collins Jaguga, Programme Officer, (ReAct) Africa for their editorial work and overseeing printing of this document. Much appreciation to ReAct Africa for their generous financial support to print this document.

Finally, the MoH would like to sincerely appreciate the United Kingdom (UK) Department of Health through Fleming fund for their overall financial support.

CHAPTER 1: INTRODUCTION



CHAPTER 1: INTRODUCTION

1.1 Background

Malawi is a small, narrow and landlocked country with a surface area of 118,484 km of which 94,276 km is landlocked. Administratively, the country is divided into three regions, namely northern, central and southern regions. The country has 28 districts, which are further divided into traditional authorities (TA) ruled by chiefs. The TAs are sub-divided into villages, which form the smallest administrative units. There is a Village Development Committee (VDC), which is responsible for development activities. Politically, each district is divided into constituencies that are represented by Members of Parliament (MPs) in the National Assembly for purposes of legislations.

Demographically, the country has an estimated population of 16.83 million people in 2016[1] with an average annual growth rate of 2.7%, giving an estimated population of 20.35 million people by 2022, with a sex ratio of 96 males per 100 females. An estimated 84% of the population lives in rural areas as compared to 16% in urban centres. Malawi is predicted to experience an average annual urban population growth rate of 4.2% from 2013 to 2030[2], which will result in an increase in urbanization. More than half of Malawi's population is under the age of 15 years and with 19% of the total population being under-five. Those aged 65 years and above represent 3% of the total population in 2017 and should continue to increase as expectation of life improves, which stands at 55.7 and 58.8 years in 2013 for males and females respectively.

Table 1: Demographic population in malawi (2017)

Population	Number	Percentage
Children aged 0-59 months (under five years)	3,094,693	17%
Population that is under 15 years of age	7,790,744	42%
Population of adolescents (10-19 years of age)	3,954,332	21%
Women of reproductive age (15-49 years)	3,871,569	21%
Total population	**18,711,338**	**100%**

Source: National Statistical Office Malawi

Economically, the country's Gross Domestic Product (GDP) per capita in 2015 was estimated at US$381.40[3] . The real GDP growth for Malawi was reported as 5% in 2013, higher than the reported rate for Sub-Saharan Africa. This contributed to a reduction in the proportion of Malawians living below the poverty line from 52% in 2004 to 39% in 2009, which however is now estimated at 50.7% in 2016. However, poverty remains deep-rooted in rural areas.

[1] *National Statistical Office in 2016 Population Projections*

[2] *Unicef 2015*

[3] *Audit Report – Global Fund Grants for Malawi – October 2016*

Malawi is predominantly an agricultural country. Agriculture accounts for 35% of the GDP and more than 80% of export earnings (primarily from tobacco sales) and it supports more than 80% of the population. Government plans to transit from an agricultural economy to an industrial, service driven economy. Development aid has played a key role in stabilizing and improving the economy over the past 30 years. In addition, diaspora remittances increasingly contribute to the country's economy.

The country has made significant improvements in social services, such as health, housing, education, water, sanitation and others. Most social services, health inclusive, are provided free at point of use, to reduce financial barriers to their utilization. Government introduced free primary education in 1991 and enrolment increased from 1.9 million to about 3 million. Although enrolment increased, government data reveals that only 30% of the children who start in standard 1 actually reach standard 8 in primary school. Literacy rate is estimated at 62% and it is higher among men (69%) than women (59%). However, there are still many barriers to uptake of social services, mainly on the demand side (decision-making inability, especially, for women, household financial status with women having to rely on their spouses and lack of transport among others).

In spite of having made significant progress in improving gender disparities, there are still hindrances to achieving gender parity. Examples include the impact on women of social and economic inequality. Up to 90% of all rural women work in agriculture, largely on production of food for domestic consumption. In addition, women are responsible for caretaking within their families, meaning women on average work longer hours compared to men and their work seldom generates an income. Many small entrepreneurial activities have been initiated targeting women and girls but they often find it hard to engage with these because of their heavy domestic and agricultural workload.

Health is essential in every country's development. Investments in health and healthcare are therefore central to the achievements of a country's improvements. The relationship between health, wellbeing, economic growth, sound environment interventions and global partnerships is widely understood. Health is a basic human right. It is thus increasingly becoming evident that everybody should have unhindered access to healthcare. Consequently, attention has been drawn to certain categories of the population such as pregnant mothers, the elderly, children and people with disabilities among others. To this effect, the country has developed a national strategic framework aimed at promoting a human rights approach to service delivery. The health sector has also taken steps in mainstreaming human rights and gender at various levels through building capacity for service delivery in programming and implementation. The sector also works in partnership with Civil Society Organizations (CSOs) in promoting the rights for individuals and communities.

1.2 The Global Health Development Agenda

There is global recognition on the key role health plays in achieving International Development Goals. Some of the key global commitments that impact on health include:

- Implementation of the International Health Regulation (IHR) – to guide the country on key actions needed to assure adherence to international regulations;
- Ouagadougou declaration on Primary Health Care and Health Systems – a reiteration of and rededication to the principles of the primary healthcare (PHC) approach to improve the health of the people, within the context of an overall health system strengthening approach;
- International Health Partnership (IHP+) on Aid Effectiveness;
- The United Nations (UN) Millennium Development Goals (MDGs 4, 5 and 6 were directly on health and MDGs 1, 2, 3, 7 and 8 were health related) and the Post MDG 2015 agenda – a focus of global efforts in improving health impacts through implementing the Universal Health Coverage (UHC) agenda in health.

The UN launched the Sustainable Development Goals (SDGs) which builds upon the MDGs. 17 SDGs were agreed and of these, SDG 3: *"Ensure healthy lives and promote well-being for all ages"* is directly

related to health. Other SDGs related to health are: Goal 1: End poverty in all its forms everywhere; Goal 2: End hunger, achieve food security and improve nutrition and promote sustainable agriculture; Goal 4: Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all; Goal 5: Achieve gender equality and empower all women and girls; and Goal 6: Ensure availability and sustainable management of water and sanitation for all.
SDG 3, which is directly related to health, has the following targets:

Target 1: By 2030, reduce the global maternal mortality ratio to less than 70 per 100,000 live births.

Target 2: By 2030, end preventable deaths of newborns and under five children.

Target 3: By 2030, end the epidemics of AIDS, TB, malaria and Neglected Tropical Diseases, and combat hepatitis, water-borne diseases and other communicable diseases.

Target 4: By 2030, reduce by one third premature mortality from NCDs through prevention and treatment, and promote mental health and wellbeing.

Target 5: Strengthen prevention and treatment of substance abuse, including narcotic drug abuse and harmful use of alcohol.

Target 6: By 2020, halve deaths and injuries from road traffic accidents.

Target 7: By 2030, achieve universal access to sexual and reproductive health care services, including family planning, information and education, and the integration of reproductive health into national strategies and programmes.

Target 8: Achieve universal health coverage, including financial risk protection, access to quality essential health care services, and access to safe, effective, quality, and affordable essential medicines and vaccines for all.

Target 9: By 2030, substantially reduce the number of deaths and illness from hazardous chemicals and air, water and soil pollution and contamination.

The Government of Malawi (GoM) is a signatory to all these global health development agenda and is committed to fully participating in their implementation. As such, implementation of these international commitments is well integrated into the strategic focus of the health sector with regular monitoring and reporting on progress carried out. Malawi is expected to incorporate the SDGs into its national planning frameworks and ensure their full implementation.

1.3 Development of the AMR Strategy and Alignment with the Health Sector Strategic Framework

1.3.1 Alignment of the AMR strategy to Government of Malawi Strategic Framework

As part of the national planning process, the GoM developed the Vision 2020 as its long-term strategy and the Malawi Growth and Development Strategy II (2012-2016) (and is in the process of developing the MGDS III 2017-2021) as the country's medium term strategies to guide national development. The national strategies are aligned to and incorporate the international commitments and obligations. The national strategies provide guidance and priorities for the different sectors of government. In both the long-term and medium-term national strategies, the GoM prioritizes the health sector. The MDGs II has a significant health focus, with nearly all its nine priority areas directly or indirectly impacting on population health.

In order to effectively implement national strategies and global health development agenda and contribute to national development, the health sector has been developing and implementing National Health Sector Strategic Plans (HSSPs) that are aligned to both national strategies and the Global health development agenda/commitments. The Health Sector Strategic Plan I was implemented from 2011 to 2016. In order to ensure continuity and integration of national priorities and international commitments into the strategic focus of the health sector, the health sector developed a successor strategic plan, the Health Sector Strategic Plan II (2017-2022) that articulates the priorities for health sector development in Malawi for the next five years.

The AMR strategy has been drawn from the HSSP II where AMR has been strategically integrated as a critical area of intervention within the next five (5) years (2017-2022). The HSSP II recognizes the unprecedented fundamental challenges around anti-biotic drug resistance in Malawi which has significantly contributed to high mortality rates. The AMR strategy therefore unpacks the broad strategy on AMR as highlighted in the HSSP II.

1.3.2 Alignment of the AMR strategy to the Global Strategy on AMR

At the sixty-eighth World Health Assembly (WHA) 2015, the WHA endorsed a Global Action Plan (GAP) to tackle antimicrobial resistance, including antibiotic resistance, the most urgent drug resistance trend. Particular emphasis is placed on an agreed upon strategic objectives to deal with AMR namely; (i) Education and Awareness; (ii) Surveillance and Research; (iii) Infection Prevention and Care; (iv) Optimal Use; and (v) Investment and Sustainability.

The health sector in Malawi, as explained above, is signatory to numerous international global protocols on health and thus this strategy has closely been aligned to the global agenda on AMR outlined concisely above. The thought process behind the development of this strategy extensively considered the dynamism of the health sector in Malawi and in the process factoring in various contextual issues relevant to Malawi pertaining to AMR. This strategy is therefore a true representation of the critical issues that will have to be addressed in Malawi that are primarily underpinned in the World Health Organization's (WHO) GAP on AMR.

1.3.3 Development Process of the AMR strategy

Development of this strategy was guided by the advice of the MoH, taking the lead, and all key health stakeholders, adopting a multi-stakeholder consultation approach at different country level forums. The process was extensively rigorous and inclusive which will ensure that this strategy is widely embraced in Malawi.

1.4 Guiding Principles/Core Values

The guiding principles demonstrate the government's commitment towards attainment of equitable, accessible, affordable and sustainable high quality evidence-based health care. The following are the guiding principles for the AMR strategy:

1.4.1 National ownership and leadership:

In the interest of national development and self-reliance, all partners in the health sector shall respect national ownership and Government leadership will remain central in guiding the implementation of the AMR strategy;

1.4.2 Human rights-based approach and equity:

All the people of Malawi shall have the right to good health, and equitable access to AMR services without any form of discrimination, whether it be based on ethnicity, gender, age, disability, religion, political belief, geographical location, or economic and/or other social conditions;

1.4.3 Ethical considerations:

The ethical requirement of confidentiality, safety and efficacy in both the provision of AMR services and AMR research shall be adhered to;

1.4.4 Efficiency and effectiveness:

All stakeholders shall be expected to use available resources for AMR efficiently and effectively to maximize health gains. Opportunities shall be created to facilitate integration of AMR service delivery to leverage on efficiency and effectiveness in addressing health needs of the people of Malawi;

1.4.5 Transparency and accountability:

Stakeholders shall discharge their respective mandates in a manner that is transparent and takes full responsibility for the decision they make;

1.4.6 Inter-sectoral and inter-ministerial collaboration:

Collaboration shall be strengthened between Ministries, Departments and Agencies (MDAs), the private sector and Civil Society Organizations in the development and implementation of this strategy;

1.4.7 Community participation:

Community participation shall be central in addressing health needs of the people of Malawi;

1.4.8 Evidence-based decision-making:

All health interventions shall be based on proven and cost-effective national and international best practice;

1.4.9 Decentralization:

AMR service provision and management shall be in line with the Local Government Act 1998, which entails devolving some health service delivery to Local Government structures.

1.4.10 Appropriate Technology:

Health care providers shall use health care technologies that are safe, appropriate, relevant and cost-effective and beneficial to Malawi.

CHAPTER 2: PERSPECTIVES ON AMR (GLOBAL AND MALAWI)

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2.1 Background

Escalating antimicrobial resistance is a growing global public health threat with extensive health, economic and social implications. Infections caused by resistant microorganisms result in longer duration of illness, higher mortality rates and increased cost with alternative treatments. Recent modeling by the independent review on AMR, projected that AMR will cause an additional 10 million deaths per year and a loss of up to US$100 trillion from global GDP by 2017 The review's final report reinforces that AMR is a multifaceted and complex problem that cannot be tackled by one nation alone or one sector alone. Combating AMR will require sustained global action across a variety of sectors (Human, Agriculture, Veterinary and environmental) in order to understand, prevent and control resistance; to preserve existing treatments; and to develop and implement a variety of new solutions.

Infectious diseases remain the leading cause of death in African countries and are responsible for the majority of years of life lost as well as the majority of deaths of children under 5 years old. [4] Infectious diseases featured prominently amongst the top 10 causes of death in Malawi in 2012 where HIV/AIDS, lower respiratory tract infections, malaria and diarrheal diseases accounted for 40,800; 13,000; 9, 500 and 6,900 deaths respectively. Of the total 100,000 recorded deaths in Malawi in 2012, 70,200 (70.1%) were attributable to infectious diseases.[5]

The high burden of communicable diseases, particularly the HIV/AIDS burden intimates extensive antimicrobial use and subsequent resistance but the burden, nature, extent and sequelae of AMR) in Malawi are yet to be quantified. AMR is a direct consequence of the selection pressure from both legitimate and indiscriminate antibiotic use in human, animal and environmental health, requiring a One Health approach for its containment. Infections caused by resistant microorganisms result in treatment failure in humans and animals, increase the risk of spread to communities and herds ,result in longer duration of illness, higher mortality rates, and increased costs of alternative treatment.[6]

Malawi is a signatory to the United Nations Political Declaration on AMR and the World Health Assembly Resolution (WHA 68.7) that urges member states to have in place National Action Plans (NAPs). Malawi is thus amongst the UN member states that endorsed the Global Action Plan (GAP) which was developed by a tripartite collaboration of the WHO, Food and Agriculture Organization of the United Nations (FAO) and the World Organization for Animal Health (OIE) which integrated the One Health Approach as a blueprint for developing its NAP.

2.2 Global Interventions on AMR

Over the years WHO has engineered specific activities in combating AMR:

- 1959 - WHO scientific group on antibiotics research recommends studies on resistance (The Work of WHO, 1959, Official Records of WHO no. 98)
- 1981 - WHO Scientific Working Group on Antimicrobial Resistance report includes guidelines for the appropriate use of antibiotics) (WHO/BVI/PHA/ANT/82.1)
- 2001 - WHO Global Strategy for containment of antimicrobial resistance (WHO/CDS/CSR/DRS/2001.2)
- 2011 - World Health Day "Antimicrobial resistance: no action today, no cure tomorrow" policy package
- 2012 - The evolving threat of antimicrobial resistance Options for action
- 2015 - Adoption by WHA of Global Action Plan for AMR
- 2016 - AMR resolution at the UN General Assembly

[4] *http://apps.who.int/iris/bitstream/10665/112738/1/9789240692671_eng.pdf*

[5] *http://www.who.int/gho/countries/mwi.pdf?ua=1*

[6] *http://www.sciencedirect.com/science/article/pii/S1473309913703189*

2.3 Global framework on AMR NAP

The WHO has developed materials, tools and templates to facilitate NAPs development by member states, which has been drawn from the Global GAP. The NAP manual[7] and associated template[8] provides a stepwise process for NAP development.

The five strategic objectives of the GAP are as follows:

1. Improve awareness and understanding of AMR through effective communication, education and training.
2. Strengthen the knowledge and evidence base through surveillance and research.
3. Reduce the incidence of infection through effective sanitation, hygiene and infection prevention measures.
4. Optimize the use of antimicrobial medicines in human and animal health.
5. Develop the economic case for sustainable investment that takes account of the needs of all countries and increase investment in new medicines diagnostic tools, vaccines and other interventions.[9]

2.4 Malawi AMR Goal

To ensure, for as long as possible, continuity of successful treatment and prevention of infectious diseases with effective and safe medicines that are quality-assured, used in a responsible way, and accessible to all who need them.

A thorough situational analysis on the burden, nature and extent of AMR in the human, animal and environmental health sectors is critical to the development of a relevant, evidence-based NAP.

2.4.1 Situational Analysis on AMR in Malawi

Malawi has completed a comprehensive situational analysis on AMR as part of the project entitled "Antibiotic Stewardship and Conservancy in Africa" which is funded as part of the Norwegian Programme for Capacity Development in Higher Education and Research for Development (NORHED) by the Norwegian Agency for Cooperation Development (NORAD). The project has an overarching aim of human capital and research development in a global health priority - the optimal management of infections in the context of antimicrobial stewardship and conservancy. It is a 3-phased project which encompasses a situational analysis and infrastructure development in phase 1, curriculum development and student recruitment into the online coursework masters programme on antibiotic stewardship in phase 2 and human capital development in research and teaching in phase 3.

The situational analysis was conceptualized as a situational and gap analysis of antimicrobial use and resistance to be undertaken by way of discrete research projects, systematic and literature reviews and canvassing expert opinion on aspects including but not limited to the health and economic context of the country, antimicrobial supply chain and management, surveillance of antimicrobial use and resistance in human health, animal health, agriculture and the environment, and, evidence-based best practice interventions and strategies. Expert opinion was sourced using the NAP checklist which was adapted into a situational analysis tool.

[7] *http://apps.who.int/iris/bitstream/10665/204470/1/9789241549530_eng.pdf?ua=1*

[8] *http://www.who.int/antimicrobial-resistance/national-action-plans/supporting-documents-tools/en/*

[9] *http://www.wpro.who.int/entity/drug_resistance/resources/global_action_plan_eng.pdf*

Table 2: SWOT analysis results

Strengths	Weaknesses
• Multi-sectoral network built on trust and willingness to co-operate. • Prescription and dispensing of medicines (including antibiotics) are regulated by the Pharmacy, Medicines and Poisons Board (PMPB) as are pesticides by the Pesticides Control Board.	• Inadequate human resource and infrastructural capacity. • Lack of coordination of existing AMR-related initiatives and activities. • Lack of public awareness campaigns on AMR.
Opportunities	**Threats**
• 'One health' concept note and roadmap endorsed by relevant Ministries. • Malawi endorsed the WHA Resolution 68.7 that required it to develop a NAP on AMR by May 2017. • Mechanisms exist to raise public awareness on AMR via City Councils, City Assemblies, the PMPB and the Malawi Bureau of Standards and should be coordinated by the Ministry of information. • The Medical Council, PMPB and the Veterinary Council can make AMR and antimicrobial stewardship mandatory in health professional curricula.	• Absence of a formally mandated committee/ mechanism and dedicated budget to address AMR holistically, substantively, consultatively and collaboratively. • Practices and adherence to antibiotic therapy in public, community and private sectors. • Illegal selling of antibiotics.

CHAPTER 3: AMR STRATEGIC DIRECTION/AGENDA FOR MALAWI

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3.1 Health Sector Vision

The vision of the health sector is to achieve a state of health for all the people of Malawi that would enable them to lead a quality and productive life.

3.2 Health Sector Mission

The mission of the health sector is to provide strategic leadership by the MoH for the delivery of a comprehensive range of quality, equitable and efficient health services to all people in Malawi by creating an enabling environment for health promoting activities.

3.3 Broad Outcomes of the AMR Strategy

1.1.1 Improved awareness and understanding of antimicrobial resistance through effective communication, education and training;
1.1.2 Improved knowledge and evidence of AMR through research and surveillance;
1.1.3 Reduced incidence of infection through effective sanitation, hygiene and prevention measures;
1.1.4 Ensure sustainable investment through research and development; and
1.1.5 Optimal use of antimicrobials medicines in human & animal health and agriculture.

Table 3: Key AMR targets

No.	Outcomes	Baseline 2016	Target 2022
1	Improved awareness and understanding of antimicrobial resistance through effective communication, education and training	0%	90%
2	Improved knowledge and evidence of AMR through research and surveillance	5%	70%
3	Reduced incidence of infection through effective sanitation, hygiene and prevention measures	5%	90%
4	Ensure sustainable investment through research and development	5%	60%
5	Optimal use of antimicrobials medicines in agriculture, human and animal health	5%	100%

3.4 Detailed Objectives and Strategies

The Malawi AMR strategy objectives define the health sector focus on AMR as prescribed by the Global Action Plan for AMR. To achieve the set objectives, the AMR strategy has clearly defined strategies for each of the objectives that will be implemented over five years (2017-2022). Detailed outputs and corresponding indicators for each of the strategies have been presented in the annexes below.

3.4.1 Education and awareness

Raising awareness on AMR and promoting behavioral change through public communication programmes that target different audiences in human health, animal health and agricultural practice as well as consumers is critical to tackling this issue. Including the use of antimicrobial agents and resistance in school curricula will also promote a better understanding and awareness from an early age. Making AMR a core component of professional education, training, certification, continuing education and development in the health and veterinary sectors and agricultural practice will help to ensure proper understanding and awareness among professionals. Thus the objectives and strategies under this area have ensured that all critical issues on education and awareness on AMR have been well articulated and that targets are realistic and attainable by 2030.

Objective 1: *To increase national awareness on antimicrobial resistance.*
Strategies

1) Establish an evidence-based awareness programme targeting audiences in general public, policy makers and health care providers, veterinarians and other animal health providers, environmental practitioners and farmers;
2) Educate and engage with media, pharmaceutical industries, CSOs, NGOs, politicians, community leaders and other relevant stakeholders on AMR;
3) Conduct an assessment on socio behavioural drivers and determinants of AMR;
4) Establish a formal multi-sectoral and multi-disciplinary Advocacy, Communication, and Social Mobilization (ACSM) Working group;
5) Plan, launch and implement a series of media and public communication events every 2 months, each focused separately on objectives 1 to 5 of the global action plan/national action plan (GAP/NAP); and
6) Develop a mechanism and digital platform that links social behavioural practices to the Global Antimicrobial Resistance Surveillance System (GLASS) AMR surveillance network.

Objective 2: *Impart knowledge on AMR and related topics for human and animal health, agriculture and environmental professionals through pre-service training.*
Strategies

1) Lobby with training institutions, regulatory bodies and other relevant stakeholders on AMR pre-service training; and
2) Strengthen and consolidate AMR and related topics as a core component of professional education, training, certification and development for human and animal health and environmental professionals.

Objective 3: *To Improve knowledge of AMR and related topics for human and animal health, agriculture & environmental professionals through in-service training.*
Strategies

1) Plan and implement in-service trainings.
2) Develop a monitoring, evaluation plan and tools for the in-service training.

Objective 4: *To impart knowledge on AMR and related topics through formal education system at primary and secondary school level.*

Strategies

1) Introduce and strengthen the concept of AMR and appropriate use of antimicrobials as part of school curriculum.
2) Lobby with Ministry of Education, Science & Technology (MoEST) and the Malawi Institute of Education (MIE) and relevant stakeholders on the inclusion or mainstreaming of AMR and related topics in the primary and secondary school curricula.

3.4.2 Surveillance and research

To better understand and respond to AMR patterns and key drivers, information about antimicrobial resistance incidence, prevalence, and trends must be gathered.

There are significant gaps in the information available on the development and global economic implications of antimicrobial resistance. Stronger networks of information sharing and a global strategic research agenda would improve global understanding of AMR. The Malawi Government, working with, research organizations professional bodies, non-governmental organizations, industry and the academia will pursue research on the causes and impacts of antimicrobial resistance. A global emphasis on surveillance and evidence based research will inform policies and the actions we will take to address the growing health security challenges of antimicrobial resistance. In addition, increased information about antimicrobial resistance will assist research and development of medical and agriculture alternatives to antimicrobials.

Malawi's AMR strategy has carefully devised strategies that will ensure that the existing data challenges/gaps on AMR in Malawi are addressed in the medium term.

Objective 1: *To strengthen the national AMR surveillance system.*

Strategies

1) Incorporate AMR into the existing surveillance system (take into account issues of one health concept when developing activities);
2) Establish a national coordinating centre for surveillance of AMR;
3) Strengthen the national epidemiological surveillance system on AMR in human health, animal health, agriculture and environment;
4) Establish mechanism for regular sharing of AMR data across human, animal health, agriculture and environmental sectors.

Objective 2: *To identify key stakeholders and resources in AMR research.*

Strategies

1) Create a multi-disciplinary AMR research platform.

Objective 3: *To develop and incorporate AMR research priorities into the National (Health) Research Agenda.*

Strategies

1) Develop an AMR research agenda; and
2) Incorporate AMR research priorities into the National (Health) Research Agenda.

3.4.3 Infection prevention and control

Stronger hygiene and infection prevention measures, including vaccination, can limit the spread of resistant microorganisms and reduce antimicrobial misuse and overuse. Infection prevention measures such as sanitation, hand washing, food and water safety, and vaccination can decrease the spread of microorganisms resistant to antimicrobial medicines. By preventing infectious diseases whose treatment would require antimicrobial medicines and viral infections which are frequently mistreated with antimicrobial medicines, the global community can better steward these essential medicines. Sustainable antimicrobial use extends beyond human well-being to animal production. Antibiotics are frequently used to stimulate growth and prevent infections in farms and slaughterhouses. Sustainable animal husbandry practices can reduce the risk of resistant bacteria spreading through the food chain to humans.

Objective 1: *To prevent and control infection at national level.*

Strategies

1) Establish systems and processes for Infection Prevention and Control (IPC);
2) Develop appropriate infrastructure for IPC implementation.
3) Re-introduce health promotion week.

Objective 2: *To prevent and control infection at community level.*

Strategies

1) Promote personal hygiene and sanitation through behaviour change activities in communities.
2) Promote safe disposal of antimicrobials.

Objective 3: *To prevent and control infection at health care and animal health settings.*

Strategies

1) Strengthen hand hygiene in health care and animal waste.
2) Ensure safety of health care and animal health workers.
3) Strengthen availability of IPC supplies in health care and animal health settings.

Objective 4: To prevent and control infection in agriculture.

Strategies

1) Promote good agricultural practices.
2) Ensure workers' safety during use of chemicals.

Objective 5: To reduce impacts of AMR on the environment.

Strategies

1) Promote safe management of waste from health care, animal health, industry and agriculture.

3.4.4 Optimal Use

To increase the longevity of antimicrobials, clinical, pharmacy, and veterinary practices must eliminate unnecessary dispensing. Evidence based prescribing through effective, rapid, low-cost diagnostic tools are needed to optimize use of antimicrobials for humans and animals. In addition to better prescribing practices, the Malawi community must adjust patients' and the agricultural industry's inappropriate and unregulated use of antimicrobial agents. Stronger compliance to antibiotic treatment regimes, quality assurance measures to prevent consumption of substandard medications, and restrictions of non-therapeutic uses of antibiotics within agriculture will provide

a foundation for antimicrobial stewardship. Regulations for antibiotic distribution, quality, and use could preserve the effectiveness of antibiotics as a public good.

Objective 1: *To ensure uninterrupted access to high-quality antimicrobial medicines*
Strategies

1) Strengthen national regulatory authorities for improved quality, safety and efficacy of antimicrobials.
2) Strengthen legislation to regulate prescription and dispensing of antimicrobials.
3) Develop and enforce an enabling regulatory framework and coordination for regulations on use of antimicrobials in human, animals and agriculture.
4) Promote good governance on antimicrobial use.
5) Strengthen supply chain systems.

Objective 2: *To improve appropriate use of antimicrobials in health systems.*
Strategies

1) Establish antimicrobial stewardship programmes in human and animal health systems.
2) Develop antibiotic policy to enforce rational use of antibiotics.

3.4.5 Investment and Sustainability

Research and development of new antimicrobial medicines, diagnostic tools, and vaccines must be reinvigorated. The Malawi community must encourage sustainable investments in new medicines, diagnostic tools, vaccines, and alternative interventions. The majority of pharmaceutical companies are no longer researching a new antibiotic which is a global concern for human and animal health. Research and development is needed to produce new treatments that can be deployed against multi-drug resistant infections. To stimulate the development and production of affordable, equitable access to new medicines, diagnostic tools, vaccines, and alternatives, these medications may need to be de-linked from price and sales volume.

Objective 1: *To develop an economic case for investment that addresses the country's AMR needs.*
Strategies

1) Develop an all-inclusive plan used for securing and lobbying funding for AMR implementation.

Objective 2: *To develop an effective mechanism for a sustainable AMR implementation.*
Strategies

1) Develop an all-inclusive effective plan for sustainable AMR implementation.
2) Strengthen organizational capacity for a sustainable AMR implementation.
3) Monitoring and evaluation.

Objective 3: *To identify operational research priorities for participation in international collaborative research to support the development of new medicines, diagnostic tools and vaccines.*
Strategies

1) Establish procedures for participation in international collaborative research to support the development of new medicine, diagnostic tool and vaccines.

Objective 4: *To identify operational research priorities for participation in international collaborative research to support the development of new medicines, diagnostic tools and vaccines.*

Strategies

1) Strengthen and streamline international collaboration on AMR.
2) Strengthen inter-sectoral coordination of AMR activities.

Objective 5: *Strengthen national collaboration to address AMR containment in disease control programs.*

Strategies

1) Strengthen drug resistance containment activities of disease control programs with AMR program.

CHAPTER 4:
FINANCING

CHAPTER 4: FINANCING

This AMR strategy will primarily be financed through the MoH budget system. It is envisaged that since AMR is integrated into the HSSP II, resources will trickle down from the Ministry of Finance to the Ministry of Health through the existing structures. However, it is well documented that the resource envelope for the HSSP II is hugely limited and hence there will be need to mobilize additional financial resources from different sources. It is imperative that various financing options be critically explored to ensure that adequate resources will be available for the AMR strategy implementation. It is envisaged that the Health Sector Development Partners will also play a critical role in the financing of this strategy over the entire period of the strategy. To this effect, some financing options already under discussion include the Health Sector Joint Fund (HSJF) and also the Global Fund, from where some of the resources will potentially be drawn. NGOs and other partners involved in AMR activities will also complement the MoH in implementing the strategy.

Detailed cost estimates for the various strategic interventions included in this strategy that will form the basis for funding are listed in Annex 1.

CHAPTER 5: MONITORING AND EVALUATION

CHAPTER 5: MONITORING AND EVALUATION

The health sector intends to strengthen the management and use of health information from all sources, to better guide decision-making. In order to effectively monitor the performance of the AMR strategy during the implementation period, the health system strengthening framework for monitoring and evaluation will be used. This framework will provide a single platform for monitoring and evaluation that is relevant to Malawi and even for the implementing partners. The performance of the AMR will be measured using an agreed set of indicators.

5.1 Sources of Data for Monitoring and Evaluation

5.1.1 Routine HMIS data and routine reports

The main source of data for monitoring the effective implementation of the AMR strategy will be the routine HMIS. The HMIS data is available on monthly, quarterly and annual basis. The HMIS will need to be modified to capture the necessary indicators for antibiotics use and development of resistance. The private hospitals and other sectors will also need to provide the AMR report which will be integrated in the HMIS. The AMR secretariat will need to produce a report which will be shared with the different stakeholders.

5.1.2 National surveys and demographic health surveys

The demographic health surveys which are conducted at specific intervals will be used to inform the implementation and progress of the AMR strategy in Malawi. This process will provide important information on impact indicators such as neonatal mortality rate, maternal mortality rate and prevalence of diseases. The AMR strategy will also be informed by several national surveys which will act as important sources of data.

5.1.3 Program reviews

The AMR program will be reviewed annually to monitor progress being made in each financial year. These reviews will be done at districts, zonal and national levels in coordination with all the sectors supporting AMR. In addition there will be two main reviews, the mid-term and the final reviews. The mid-term review will evaluate the progress that has been made and identify some strategies that will enable the MoH to meet some of the indicators that have been missed. The review will also assist the MoH to accelerate some interventions that have missed their targets. The end of program review will be conducted to assess the extent and effectiveness on how the AMR strategy has been implemented and provide recommendations from the lessons learnt.

5.1.4 Antimicrobial stewardship

Improving the use of antibiotics is an important patient safety and public health issue as well as a national priority. A growing body of evidence demonstrates that hospital-based programs dedicated to improving antibiotic use, commonly referred to as “Antibiotic Stewardship Programs” (ASPs), can both optimize the treatment of infections and reduce adverse events associated with antibiotic use. These programs help clinicians improve the quality of patient care and improve patient safety through increased infection cure rates, reduced treatment failures, and increased frequency of correct prescribing for therapy and prophylaxis. They also significantly reduce hospital cost and antibiotic resistance. In recognition of the urgent need to improve antibiotic use in hospitals and the benefits of antibiotic stewardship programs, the report of the situation analysis conducted in 2016, recommended that all hospitals should implement Antibiotic Stewardship Programs.

Malawi has addressed Antimicrobial stewardship programs in strategy number 4; which talks about optimizing the use of antimicrobial medicines in both humans and animals; the strategy further stipulates in one of the key outputs that it will establish antimicrobial stewardship programs in all health facilities by instituting these core elements:

- *Leadership commitment*: Dedicating necessary human, financial and information technology resources.
- *Accountability:* Appointing a single leader responsible for program outcomes. Experience with successful programs show that a physician or a microbiologist leader is effective.
- *Medicines expertise:* Appointing a single pharmacist leader responsible for working to improve antibiotic use.
- *Action:* Implementing at least one recommended action, such as systemic evaluation of ongoing treatment need after a set period of initial treatment (i.e. "antibiotic time out" after 48 hours)
- *Tracking:* Monitoring antibiotic prescribing and resistance patterns.
- *Reporting:* Regular reporting of information on antibiotic use and resistance to doctors, nurses and relevant staff.
- *Education:* Educating clinicians about resistance and optimal prescribing.

5.2 Monitoring and Evaluation Framework and Process

The Monitoring and Evaluation (M&E) framework, shown in annex 7 provides guidance on the focus and priorities it will have, as it improves on the generation and use of required knowledge for evidence based decision-making.

CHAPTER 6: IMPLEMENTATION

CHAPTER 6: IMPLEMENTATION

The implementation of the AMR Strategy will be the responsibility of all health sector stakeholders in Malawi. It will be implemented under the health sector partner alignment, coordination arrangement and the decentralization system. The systems and structures established by the Government of Malawi and those created under the partnership alignment, the coordination and the decentralization system will play their defined role and responsibilities during the implementation of the AMR strategy. The AMR National Coordinating Centre under the Department of Preventive Health Services in the Ministry of Health will play a central role of coordinating all AMR activities. It will provide its overall stewardship role of the sector and provision of policy and technical support to implementing partners. It will also have an important role of stimulating wider public debate and innovation. This chapter discusses the implementation arrangements for the AMR NAP, including roles and responsibilities of various stakeholders.

6.1 Governance, Management and Partnership Structures in AMR

AMR activities need to be better coordinated in order to maximize the outputs the health sector provides to the people of Malawi. Improvement in coordination and management of the surveillance system will enable the country to have evidence based policy formulation in regulating antibiotic use in human and animal health.

The Malawi MoH guidance on coordination and governance is provided through three oversight structures:

- **The management structure:** This guides internal Ministry coordination, to guide implementation of defined interventions and activities at the different levels.
- **The governance structure:** This looks at defining the guiding strategic direction and following up on the operation of interventions. It is largely defined through formal legislation, with members and functions formally gazetted by the government.
- **The partnership structure:** This guides external coordination of service delivery by all stakeholders at the respective levels of care. All partners providing services at a given level of care engage with each other through this structure.

The existing partnership instrument (the partnership alignment and coordination Memorandum of Understanding) will serve as the formal instrument to guide the functioning of the partnership in health. It is guided by interpretation of the principles of the 2005 Paris Declaration on Aid Effectiveness.

6.2 Management Structure for Stewardship

The key oversight functions of the AMR activities will be managed by the Minister of Health through the AMR National Coordinating Centre, whose duties are defined by AMR Technical Working Group. As a government agency, the MoH, through the AMR National Coordinating Centre, will set the agenda for AMR surveillance in Malawi in collaboration with key stakeholders. The MoH has an organizational structure, with establishment for both technical and administrative staff. Each of the established position has specified job descriptions. Several partner institutions and civil society will complement the work of the Ministry in discharging its core functions on AMR through advocacy, surveillance, research and training as well as quality assurance.

Table 4: Roles and responsibilities

Stakeholder	Roles and responsibilities in AMR NAP
Ministry of Health	• Overall stewardship of the sector, and provision of policy, strategic guidance and technical support • Development of operational tools and monitoring progress of implementation of AMR strategy through the National Coordinating Centre • Provision of finances and resources for the planning and implementation of AMR activities • Training/Education of all health workers
AMR National Coordinating Centre	• Coordinate the planning and implementation of AMR activities in all sectors to ensure a systematic and comprehensive approach
Ministry of Agriculture	• Development and implementation of policies and plans relating to AMR activities in animal health • Collaborates with MoH to increase access to AMR data in animals
Ministry of Education / Malawi Institute of Education	• Training/Education of all health workers • Collaborates with MoH in curriculum development incorporating AMR
Ministry of Natural Resources, Energy and Mining / Environmental Affairs Department	• Coordinate environmental assessments in the implementation of AMR activities • Collaborates with MoH on the safe management of waste disposal to avoid contaminating the environment • Conduct environmental monitoring of activities to ensure compliance with national/International guidelines
Ministry of Local Government	• Mobilization of additional resources for AMR activities at local government level
Ministry of Finance, Economic Planning and Development / National Statistical Office	• Mobilizing financial resources for GoM and allocating the resources to government ministries and departments • Provide technical support on national surveillance and research
Health Development Partners	• Complement financing of the AMR NAP priorities with earmarked or un earmarked funds • Provision of demand driven technical assistance and inputs into implementation of the AMR priorities • Actively participate in joint sector monitoring and review
Partner Institutions	• Actively participate in collection of AMR data in Non-State institutions to contribute to the AMR National database • Participate in joint sector monitoring
Central Medical Stores Trust	• Procurement and distribution of antibiotics and related medical supplies

Table 4: Roles and responsibilities; cont'd

Stakeholder	Roles and responsibilities in AMR NAP
Pharmacy, Medicines and Poisons Board	• Strengthen legislation on antibiotic use in Malawi • Monitor antibiotic use and provide quality control and quality assurance activities
Civil Society Organizations	• Advocacy • Provide a link between health services and households in articulating health issues of importance • Participate in joint sector monitoring

6.3 Operationalization of the AMR Strategy

In order to operationalize the AMR strategy, Annual Work Plans (AWPs) from the output tables have been developed that articulate the activities to be implemented for each of the priority objectives, strategies, outputs and broad activities. These AWPs are detailed, costed and will be implemented following a typical GoM financial year.

ANNEX 1: SUMMARY OF COSTS ESTIMATES (MALAWI KWACHA)

1. EDUCATION & RESEARCH	Annual Costs (MWK)						Funding Source	Responsibility
	2017/2018	2018/2019	2019/2020	2020/2021	2021/2022	Total Cost (MK)		
EDUCATION & RESEARCH	63,100,000	56,358,500	60,098,685	63,477,215	63,801,087	306,835,487	ORT, DPs, NGOs	MoH
Objective 1: To increase national awareness on AMR	40,000,000	31,940,000	34,437,000	36,508,850	35,459,293	178,345,143	ORT, DPs, NGOs	MoH
Strategies								
1.1 Establishment of an evidence-based awareness programme targeting audiences in general public, policy makers and health care providers, veterinarians and other animal health providers, environmental practitioners and farmers	8,600,000	4,780,000	5,019,000	5,269,950	5,533,448	29,202,398	ORT, DPs, NGOs	MoH
1.2 Educate and engage with media, pharmaceutical industries, CSOs, NGOs, politicians, community leaders and other relevant stakeholders	15,350,000	16,117,500	16,923,375	17,769,544	18,658,021	84,818,440	ORT. DPs, NGOs	MoH, MoA & DEA
1.3 Conduct an assessment on socio behavioral drivers and determinants	4,000,000	2,000,000	3,000,000	3,500,000	800,000	13,300,000	ORT. DPs, NGOs	MoH, MoA & DEA
1.4 Establish a formal multi-sectoral and multi-disciplinary Advocacy, Communication, and Social Mobilization (ACSM) Working group.	3,950,000	3,637,500	3,819,375	4,010,344	4,210,861	19,628,080	ORT. DPs, NGOs	MoH, MoA, DEA, DISTMS
1.1 Plan, launch and implement a series of media and public communication events every 2 months, each focused separately on Objectives 1 to 5 of the GAP/NAP	2,100,000	2,205,000	2,315,250	2,431,013	2,552,563	11,603,826	ORT. DPs, NGOs	MoH, MoA , DEA, DISTMS
1.2 Develop a mechanism and digital platform that links social behavioral practices to the GLAS AMR surveillance network.	6,000,000	3,200,000	3,360,000	3,528,000	3,704,400	19,792,400	ORT. DPs, NGOs	MoH, MoA, DEA, DISTMS, Defense
Objective 2: To Impart knowledge of AMR and related topics for human and animal health, agriculture and environmental professionals through pre-service training	6,700,000	7,626,000	8,029,560	8,454,634	8,902,377	39,712,570	ORT, DPs, NGOs	MoH
Strategies								
2.1 Lobbying with training institutions, regulatory bodies and other relevant stakeholders on AMR pre-service training	2,100,000	2,226,000	2,359,560	2,501,134	2,651,202	11,837,895	ORT, DPs, NGOs	MoH, MoA , DEA, MIE
2.2 Strengthen and consolidate AMR and related topics as a core component of professional education, training, certification and development for human, animal and environmental professionals	4,600,000	5,400,000	5,670,000	5,953,500	6,251,175	27,874,675	ORT. DPs, NGOs	

ANNEX 1: SUMMARY OF COSTS ESTIMATES (MALAWI KWACHA) CONT'D

1. EDUCATION & RESEARCH	Annual Costs (MWK)						Funding Source	Responsibility
	2017/2018	2018/2019	2019/2020	2020/2021	2021/2022	Total Cost (MK)		
EDUCATION & RESEARCH	63,100,000	56,358,500	60,098,685	63,477,215	63,801,087	306,835,487	ORT, DPs, NGOs	MoH
Objective 3: To improve knowledge of AMR and related topics for human and animal health, agriculture and environmental professionals through in-service training	14,800,000	15,150,000	15,907,500	16,702,875	17,538,019	80,098,394	ORT, DPs, NGOs	MoH
Strategies								
3.1 Plan and implement in-service trainings.	14,000,000	14,400,000	15,120,000	15,876,000	16,669,800	76,065,800	ORT. DPs, NGOs	MoH, MoA , DEA, MIE
3.2 Development of monitoring and evaluation plan and tools for the in-service training	800,000	750,000	787,500	826,875	868,219	4,032,594	ORT. DPs, NGOs	MoH, MoA , DEA, MIE
Objective 4: To impart knowledge of AMR and related topics through formal education system at primary and secondary school level	1,600,000	1,642,500	1,724,625	1,810,856	1,901,399	8,679,380	ORT, DPs, NGOs	MoH
Strategies								
4.1 Introduce and strengthen concept of AMR and appropriate use of antimicrobials as part of school curriculum.	750,000	750,000	787,500	826,875	868,219	3,982,594	ORT. DPs, NGOs	MoH, MoA , DEA, MIE
4.2 Lobby with Ministry of Education, Malawi Institute of Education and relevant stakeholders on the inclusion or mainstreaming of AMR and related topics in the primary and secondary school curricula	850,000	892,500	937,125	983,981	1,033,180	4,696,787	ORT. DPs, NGOs	MoH

ANNEX 1: SUMMARY OF COSTS ESTIMATES (MALAWI KWACHA) CONT'D

2. OPTIMAL USE	Annual Costs (MK)					Total Cost (MK)	Funding Source	Responsibility
	2017/2018	2018/2019	2019/2020	2020/2021	2021/2022			
OPTIMAL USE	26,900,000	71,470,000	39,856,000	14,548,800	15,276,240	168,051,040	ORT, DPs, NGOs	MoH
Objective 1: Ensure uninterrupted access to high-quality antimicrobial medicines	25,150,000	54,350,000	25,680,000	5,964,000	6,262,200	117,406,200	ORT, DPs, NGOs	MoH
Strategy								
1.1 Strengthen national regulatory authorities for improved quality, safety and efficacy of antimicrobials	1,500,000	5,000,000	-	-	-	6,500,000	ORT, DPs, NGOs	MoH
1.2 Strengthen legislation to regulate prescription and dispensing of antimicrobials	750,000	-	-	-	-	750,000	ORT, DPs, NGOs	MoH
1.3 Develop and enforce an enabling regulatory framework and coordination for regulations on use of antimicrobials in human, animals and agriculture	15,250,000	19,750,000	12,000,000	-	-	47,000,000	ORT, DPs, NGOs	MoH
1.4 Promote good governance on antimicrobial use	3,500,000	15,000,000	-	-	-	18,500,000	ORT, DPs, NGOs	MoH
1.5 Strengthen supply chain systems	4,150,000	14,600,000	13,680,000	5,964,000	6,262,200	44,656,200	ORT, DPs, NGOs	MoH
Objective 2: Improve appropriate use of antimicrobials in health systems	1,750,000	17,120,000	14,176,000	8,584,800	9,014,040	50,644,840	ORT, DPs, NGOs	
Strategy								
2.1 Establish antimicrobial stewardship programmes in human and animal health systems	1,750,000	17,120,000	14,176,000	8,584,800	9,014,040	50,644,840	ORT, DPs, NGOs	MoH / MoAIWD / Health facilities

ANNEX 1: SUMMARY OF COSTS ESTIMATES (MALAWI KWACHA) CONT'D

3. SURVEILLANCE AND RESEARCH	Annual COSTS (MK)					Total Cost (MK)	Funding Source	Responsibility
	2017/2018	2018/2019	2019/2020	2020/2021	2021/2022			
SURVEILLANCE & RESEARCH	57,750,000	82,325,000	39,191,250	41,150,813	43,208,353	263,625,416	ORT, DPs, NGOs	MoH
Objective 1: To strengthen the national AMR surveillance system	38,250,000	80,750,000	37,537,500	39,414,375	41,385,094	237,336,969	ORT, DPs, NGOs	MoH
Strategy								
1.1 Incorporate AMR into the existing surveillance system (take into account issues of one health concept when developing activities)	4,500,000	750,000	787,500	826,875	868,219	7,732,594	ORT. DPs, NGOs	MoH
1.2 Establish a national coordinating centre for surveillance of AMR	5,450,000	56,250,000	11,812,500	12,403,125	13,023,281	98,938,906	ORT. DPs, NGOs	MoH
1.3 Strengthen the national epidemiological surveillance system on AMR in Human Health, Animal Health, Agriculture and Environment	16,800,000	16,250,000	17,062,500	17,915,625	18,811,406	86,839,531	ORT. DPs, NGOs	MoH
1.4 Establish mechanism for regular sharing of AMR data across human, animal health, agriculture and environmental sectors	11,500,000	7,500,000	7,875,000	8,268,750	8,682,188	43,825,938	ORT. DPs, NGOs	MoH
Objective 2 To identify key stakeholders and resources in AMR research	3,000,000	-	-	-	-	3,000,000	ORT, DPs, NGOs	MoH
Strategy								
2.1 Create a multi-disciplinary AMR research platform	3,000,000	-	-	-	-	3,000,000		MoH
Objective 3: To develop and incorporate AMR research priorities into the National (Health) Research Agenda	16,500,000	1,575,000	1,653,750	1,736,438	1,823,259	23,288,447	ORT, DPs, NGOs	MoH
Strategy								
3.1 Develop AMR research agenda	15,000,000	1,575,000	1,653,750	1,736,438	1,823,259	21,788,447	ORT, DPs, NGOs	MoH
3.2 Incorporate AMR research priorities into the National (Health) Research Agenda (Liaise with Agriculture and Environment Ministries)	1,500,000	-	-	-	-	1,500,000	ORT, DPs, NGOs	MoH

ANNEX 1: SUMMARY OF COSTS ESTIMATES (MALAWI KWACHA) CONT'D

4. INFECTION, PREVENTION AND CONTROL	Annual Costs (MK)					Total Cost (MK)	Funding Source	Responsibility
	2017/2018	2018/2019	2019/2020	2020/2021	2021/2022			
INFECTION, PREVENTION & CONTROL	629,800,000	980,340,000	1,014,072,000	1,012,944,600	1,114,997,730	4,752,154,330	ORT, DPs, NGOs	MoH
Objective 1: To prevent and control Infection at national level	43,050,000	199,992,500	118,167,125	124,075,481	131,279,255	616,564,362	ORT, DPs, NGOs	MoH
Strategy								
2.1 Establish systems and processes for IPC	12,600,000	13,100,000	1,680,000	1,764,000	2,852,200	31,996,200	ORT, DPs, NGOs	MoH
2.2 Develop appropriate infrastructure for IPC implementation	20,000,000	186,000,000	115,550,000	121,327,500	127,393,875	570,271,375	ORT, DPs, NGOs	MoH
2.3 Reintroduce Health Promotion week	10,450,000	892,500	937,125	983,981	1,033,180	14,296,787	ORT, DPs, NGOs	MoH
Objective 2: To prevent and control infection at community level	49,400,000	74,420,000	95,141,000	82,048,050	104,000,453	405,009,503	ORT, DPs, NGOs	MoH
Strategy								
2.1 Promote personal hygiene and sanitation through behaviour change activities in the communities	39,200,000	63,710,000	83,895,500	70,240,275	91,602,289	348,648,064	ORT, DPs, NGOs	MoH
2.2 Promote safe disposal of antimicrobials	10,200,000	10,710,000	11,245,500	11,807,775	12,398,164	56,361,439	ORT, DPs, NGOs	MoH
Objective 3: To prevent and control Infection at health care and animal health setting	246,800,000	279,665,000	308,188,250	307,466,663	337,545,896	1,479,665,808	ORT, DPs, NGOs	MoH
Strategy								
3.1 Strengthen hand hygiene in health care and animal waste	22,300,000	22,865,000	24,008,250	25,208,663	26,469,096	120,851,008	ORT, DPs, NGOs	MoH
3.2 Ensure safety of health care and animal health workers	154,500,000	183,300,000	207,005,000	201,224,250	225,991,363	972,020,613	ORT, DPs, NGOs	MoH
3.3 Strengthen availability of IPC supplies in health care and animal health settings	70,000,000	73,500,000	77,175,000	81,033,750	85,085,438	386,794,188	ORT, DPs, NGOs	MoH
Objective 4: To prevent & control Infection in Agriculture	51,500,000	45,000,000	64,250,000	49,612,500	69,943,125	280,305,625	ORT, DPs, NGOs	MoH
Strategy								
4.1 Promote good agriculture practices	30,000,000	31,500,000	50,075,000	34,728,750	54,315,188	200,618,938	ORT, DPs, NGOs	MoH
4.2 Ensure workers safety during use of chemicals	21,500,000	13,500,000	14,175,000	14,883,750	15,627,938	79,686,688	ORT, DPs, NGOs	MoH
Objective 5: To reduce impacts of AMR on the environment	239,050,000	381,262,500	428,325,625	449,741,906	472,229,002	1,970,609,033	ORT, DPs, NGOs	MoH
Strategy								
5.1 Promote safe management of waste from health care, animal health, industry and agriculture	239,050,000	381,262,500	428,325,625	449,741,906	472,229,002	1,970,609,033	ORT, DPs, NGOs	MoH

ANNEX 1: SUMMARY OF COSTS ESTIMATES (MALAWI KWACHA) CONT'D

5. INVESTMENT & SUSTAINABILITY	Annual Costs (MK)						Funding Source	Responsibility
	2017/2018	2018/2019	2019/2020	2020/2021	2021/2022	Total Costs (MK)		
INVESTMENT & SUSTAINABILITY	264,300,000	40,687,500	13,441,875	7,813,969	8,204,667	334,448,011	ORT, DPs, NGOs	MoH
Strategic Objective 1: To develop the economic case for investment that addresses the country's AMR needs	137,700,000	27,000,000	6,000,000	-	-	170,700,000	ORT, DPs, NGOs	MoH
Strategy								
1.1 Develop an all-inclusive plan used for securing and lobbying funding for AMR implementation	137,700,000	27,000,000	6,000,000	-	-	170,700,000	ORT, DPs, NGOs	MoH
Strategic Objective 2: To develop an effective mechanism for a sustainable AMR implementation	113,600,000	4,600,000	-	-	-	118,200,000	ORT, DPs, NGOs	MoH
Strategy								
2.1 Develop an all-inclusive effective plan for sustainable AMR implementation	9,600,000	4,600,000	-	-	-	14,200,000	ORT, DPs, NGOs	MoH
2.2 Organization capacity for a sustainable AMR implementation	104,000,000	-	-	-	-	104,000,000	ORT, DPs, NGOs	MoH
2.3 Monitoring and Evaluation	-	-	-	-	-	-	ORT, DPs, NGOs	MoH
Objective 3: Identify operational research priorities for participation in international collaborative research to support the development of new medicines, diagnostic tools and vaccines	3,750,000	2,362,500	2,480,625	2,604,656	2,734,889	13,932,670	ORT, DPs, NGOs	MoH
Strategy								
3.1 Establish procedures for participation in international collaborative research to support the development of new medicine, diagnostic tool and vaccines	3,750,000	2,362,500	2,480,625	2,604,656	2,734,889	13,932,670	ORT, DPs, NGOs	MoH
Strategic Objective 4: Identify operational research priorities for participation in international collaborative research to support the development of new medicines, diagnostic tools and vaccines	6,000,000	6,725,000	4,961,250	5,209,313	5,469,778	28,365,341	ORT, DPs, NGOs	MoH
Strategy								
4.1 Strengthen and streamline international collaboration on AMR	3,000,000	5,150,000	3,307,500	3,472,875	3,646,519	18,576,894	ORT, DPs, NGOs	MoH
4.2 Strengthen inter-sectoral coordination of AMR activities	3,000,000	1,575,000	1,653,750	1,736,438	1,823,259	9,788,447	ORT, DPs, NGOs	MoH
Strategic Objective 5: Strengthen National collaboration to address AMR containment in disease control programs	3,250,000	-	-	-	-	3,250,000	ORT, DPs, NGOs	MoH
Strategy								
5.1 Strengthen drug resistance containment activities of disease control programs with AMR program	3,250,000	-	-	-	-	3,250,000	ORT, DPs, NGOs	MoH
GRAND TOTAL (MK)	1,041,850,000	1,231,181,000	1,166,659,810	1,139,935,396	1,245,488,077	5,825,114,283	ORT, DPs, NGOs	MoH

ANNEX 2: EDUCATION & AWARENESS (OUTCOMES, OBJECTIVES, STRATEGIES AND OUTPUTS)

Strategic Outcome		Improved Awareness and Understanding of Antimicrobial Resistance through Effective Communication, Education and Training							
Strategic Objective 1		To increase national awareness on AMR							
Strategy 1.1		Establishment of an evidence-based awareness programme targeting audiences in general public, policy makers and health care providers, veterinarians and other animal health providers, environmental practitioners and farmers							
Output Description		Objectively Verifiable Indicator	Annual Output Targets					Source and Means of Verification	Risks and Assumptions	Responsibility
			2017/2018	2018/2019	2019/2020	2020/2021	2021/2022			
Output 1	AMR awareness and advocacy materials developed, adopted, translated	No. of advocacy materials developed	One meeting Two workshops	Two meetings	Two meetings	Two meetings	Two meetings	Minutes		Core team
Output 2	Targeted awareness activities to the specific audiences Implemented	No. of targeted activities implemented	Four workshops	Four workshops	Four workshops	Four workshops	Four workshops	Minutes	Lack of funds	MOH, MOA, DEA
Output 3	Conduct a behaviour change study on AMR	Behaviour change study conducted	One study	One study	One study	One study	One study	Study report		
Output 4	Awareness raising events in line with world AMR awareness week Implemented	No. of events in line with WAMR awareness week implemented	One field day; two press releases; one press conference; one panel discussion; 20 press airings	One field day; two press releases; one press conference; one panel discussion; 20 press airings	One field day; two press releases; one press conference; one panel discussion; 20 press airings	One field day; two press releases; one press conference; one panel discussion; 20 press airings	One field day; two press releases; one press conference; one panel discussion; 20 press airings	Minutes, reports	Lack of funds	MOH, MOA, DEA, Information
Output 5	A platform to communicate information on AMR (Website) Launched and running	Digital platform for AMR launched	One development meeting; one field pretesting; 33 training sessions	Four quarterly meetings	Four quarterly meetings	Four quarterly meetings	Four quarterly meetings	Website		MOH, MOA, DEA, Information

ANNEX 2: EDUCATION & AWARENESS (OUTCOMES, OBJECTIVES, STRATEGIES AND OUTPUTS) CONT'D

Strategy 1.2		Educate and engage with media, pharmaceutical industries, CSOs, NGOs, politicians, community leaders and other relevant stakeholders								
Output Description		Objectively Verifiable Indicator	Annual Output Targets					Source and Means of Verification	Risks and Assumptions	Responsibility
			2017/2018	2018/2019	2019/2020	2020/2021	2021/2022			
Output 1	Regional seminars with media, Pharmaceutical industries and other stakeholders on AMR conducted	No. of regional seminars with relevant stakeholders on AMR conducted	Three seminars	Three seminars	Three seminars	Three seminars	Three seminars	Minutes	Lack of funding	MOH, MOA, DEA, Information
Output 2	District seminars with community leaders, politicians, religious leaders and other relevant stakeholders conducted	No. of district seminars with relevant stakeholders on AMR conducted	Twenty nine seminars	Twenty nine seminars	Twenty nine seminars	Twenty nine seminars	Twenty nine seminars	Minutes	Lack of funding	MOH, MOA, DEA, Information
Output 3	Media and other stakeholders in all AMR activities in Malawi engaged	Media and other stakeholders engaged in all AMR activities in Malawi	Four media briefings	Four media briefings	Four media briefings	Four media briefings	Four media briefings	Minutes		MOH, MOA, DEA, Information
Output 4	Media coverage of AMR activities Monitored and Evaluated	No of media coverage of AMR activities monitored and evaluated	Six media coverage reviews	Six media coverage reviews	Six media coverage reviews	Six media coverage reviews	Six media coverage reviews	Minutes, reports	Lack of funding	MOH, MOA, DEA, Information
Strategy 1.3		Conduct an assessment on socio-behavioral drivers and determinants								
Output Description		Objectively Verifiable Indicator	Annual Output Targets					Source and Means of Verification	Risks and Assumptions	Responsibility
			2017/2018	2018/2019	2019/2020	2020/2021	2021/2022			
Output 1	Rapid qualitative assessment among patients, communities, healthcare providers, pharmacists, drug dispensers, pharmaceutical sales representatives, animal production units, farmers, feed producers and environmental workers conducted	No of rapid qualitative assessment conducted	One baseline assessment	One baseline assessment	One mid-term assessment	One end of programme assessment	One end of programme assessment	Study report	Lack of funding	MOH, MOA, DEA
Output 2	A national quantitative survey on knowledge, awareness and practices (KAP) among public healthcare, animal production, agriculture and pharmaceutical sector conducted	No. of national quantitative survey conducted	One baseline assessment	One baseline assessment	One mid-term assessment	One end of programme assessment	One end of programme assessment	Study report	Lack of funding	MOH, MOA, DEA

ANNEX 2: EDUCATION & AWARENESS (OUTCOMES, OBJECTIVES, STRATEGIES AND OUTPUTS) CONT'D

Strategy 1.4		Establish a formal multi-sectoral and multi-disciplinary advocacy, communication and social mobilization (ACSM) working group							
Output Description		Objectively Verifiable Indicator	Annual Output Targets					Source and Means of Verification	Risks and Assumptions	Responsibility
			2017/2018	2018/2019	2019/2020	2020/2021	2021/2022			
Output 1	TORs of the ACSM WG, with members nominated from key constituencies and stakeholders developed	No. of meetings to develop TORs conducted	One orientation meeting; one development and finalization of TORs meeting	Four quarterly review meetings	Four quarterly review meetings	Four quarterly review meetings	Four quarterly review meetings	TOR document		MOH, MOA, DEA
Output 2	A robust evidence-based ACSM strategy and action plan to respond to the social behavioural drivers and determinants of AMR developed	No. of meetings conducted	One evidence-based strategic action plan	One evidence-based strategic action plan	One evidence-based strategic action plan	One evidence-based strategic action plan	One evidence-based strategic action plan	Minutes		MOH, MOA, DEA
Output 3	Resources from government and donors to finance strategy development, research studies, and implementation of ASCM activities identified	No. of meetings to identify source of resources	Three regional resource mobilization meetings	Three regional resource mobilization meetings	Three regional resource mobilization meetings	Three regional resource mobilization meetings	Three regional resource mobilization meetings	Minutes		MOH, MOA, DEA
Strategy 1.5		Plan, launch and implement a series of media and public communication events every two months, each focused separately on Objectives 1 to 5 of the GAP/NAP								
Output Description		Objectively Verifiable Indicator	Annual Output Targets					Source and Means of Verification	Risks and Assumptions	Responsibility
			2017/2018	2018/2019	2019/2020	2020/2021	2021/2022			
Output 1	Activities to commemorate annual world AMR awareness week planned and implemented	Number of activities to commemorate annual world AMR awareness week planned and implemented	One field day; two press releases; one press conference; one panel discussion; twenty press airings	One field day; two press releases; one press conference; one panel discussion; twenty press airings	One field day; two press releases; one press conference; one panel discussion; twenty press airings	One field day; two press releases; one press conference; one panel discussion; twenty press airings	One field day; two press releases; one press conference; one panel discussion; twenty press airings	Minutes, reports	Lack of funds	MOH, MOA, DEA, Information, Defense

ANNEX 2: EDUCATION & AWARENESS (OUTCOMES, OBJECTIVES, STRATEGIES AND OUTPUTS) CONT'D

Strategy 1.5		Plan, launch and implement a series of media and public communication events every two months, each focused separately on Objectives 1 to 5 of the GAP/NAP							
Output Description		Objectively Verifiable Indicator	Annual Output Targets					Source and Means of Verification	Risks and Assumptions	Responsibility
			2017/2018	2018/2019	2019/2020	2020/2021	2021/2022			
Output 2	Sets of specific activities and events grouped around each of objectives 1 to 5, developed and implemented every two months spread over 2021 to enhance and sustain awareness among professionals and the public	No. of sets of specific and events developed and implemented.	Four review meetings	Four review meetings	Four review meetings	Four review meetings	Four review meetings	Minutes		MOH, MOA, DEA, Information
Strategy 1.6		**Develop a mechanism and digital platform that links social behavioural practices to the GLAS AMR surveillance network.**								
Output Description		Objectively Verifiable Indicator	Annual Output Targets					Source and Means of Verification	Risks and Assumptions	Responsibility
			2017/2018	2018/2019	2019/2020	2020/2021	2021/2022			
Output 1	Protocols and cross-referenced data collection and analysis for establishing an AMR behavioural surveillance system to help inform target policy, regulatory, and practice reforms including community and hospital-based stewardship programmes	No. of protocols and cross-referenced data collection and analysis for establishing an AMR developed and implemented	One development workshop; one finalization	Two review meetings	Two review meetings	Two review meetings	Two review meetings	Study report, minutes	Lack of funding	MOH, MOA, DEA
Output 2	Use of digital platform developed, trained, implemented, monitored and evaluated	Number of digital platforms developed and implemented	One workshop to develop and pretest the digital platform 33 training sessions	Four review meetings	Four review meetings	Four review meetings	Four review meetings	Minutes	Lack of funding	MOH, MOA, DEA

ANNEX 2: EDUCATION & AWARENESS (OUTCOMES, OBJECTIVES, STRATEGIES AND OUTPUTS) CONT'D

Strategic Objective 2		To Impart knowledge of AMR and related topics for human and animal health, agriculture and environmental professionals through preservice training							
Strategy 2.2		Lobbying with training institutions, regulatory bodies and other relevant stakeholders on AMR preservice training							
Output Description		Objectively Verifiable Indicator	Output Targets (Per Financial Year)					Source and Means of Verification	Risks and Assumptions	Responsibility
			2017/2018	2018/2019	2019/2020	2020/2021	2021/2022			
Output 1	Meetings with training institutions (human and animal health), regulatory bodies and other relevant stakeholders on AMR pre-service training conducted	No. of meetings with training institutions, regulatory bodies and relevant stakeholders on AMR conducted	Three regional meetings	Three regional meetings	Three regional meetings	Three regional meetings	Three regional meetings	Minutes		MOH, MOA, DEA, Education
Strategy 2.3		Strengthen and consolidate AMR and related topics as a core component of professional education, training, certification and development for human and animal health and environmental professionals								
Output Description		Objectively Verifiable Indicator	Output Targets (Per Financial Year)					Source and Means of Verification	Risks and Assumptions	Responsibility
			2017/2018	2018/2019	2019/2020	2020/2021	2021/2022			
Output 1	Curriculum review committee with clear TORs and road map established.	No. of review committee meetings conducted	One orientation meeting; one development and finalization of TORs meeting	Two regional review meetings	Two regional review meetings	Two regional review meetings	Two regional review meetings	Minutes	Lack of funding	MOH, MOA, DEA, Education
Output 2	Curriculum in relation to AMR for human and animal health, agriculture and environmental pre-service training reviewed.	Number of review meetings conducted	Four curriculum review meetings	One review meeting	One review meeting	One review meeting	One review meeting	Minutes, review finding report	Lack of funding	MOH, MOA, DEA, Education

ANNEX 2: EDUCATION & AWARENESS (OUTCOMES, OBJECTIVES, STRATEGIES AND OUTPUTS) CONT'D

Strategy 2.3		Strengthen and consolidate AMR and related topics as a core component of professional education, training, certification and development for human and animal health and environmental professionals								
Output 3	Tutors and lecturers in relevant sectors trained.	No. of trainings conducted	Three regional training sessions	Three regional training sessions	Three regional training sessions	Three regional training sessions	Three regional training sessions		Lack of funding	
Strategic Objective 3		To improve knowledge of AMR and related topics for human and animal health, agriculture and environmental professionals through in-service training								
Strategy 3.1		Plan and implement in-service trainings								
Output Description		Objectively Verifiable Indicator	Output Targets (Per Financial Year)					Source and Means of Verification	Risks and Assumptions	Responsibility
			2017/2018	2018/2019	2019/2020	2020/2021	2021/2022			
Output 1	Training manuals and materials developed, pretested and adopted	Number of training manuals developed and adopted	One workshop for development; one workshop to pretest and finalize	One review meeting for training manuals	One review meeting for training manuals	One review meeting for training manuals	One review meeting for training manuals	Minutes, training manuals	Lack of funds	MOH, MOA, DEA, Education
Output 2	Training of trainers conducted	Number of trainings conducted	Three training sessions	Three training sessions	Three training sessions	Three training sessions	Three training sessions	Training reports	Lack of funds	MOH, MOA, DEA, Education
Output 3	In-service training for human and animal health, agriculture and environmental professionals conducted	Number of in-service trainings conducted	100 training sessions (3 per central/ DHO)	100 training sessions (3 per central/DHO)	100 training sessions (3 per central/DHO)	100 training sessions (3 per central/DHO)	100 training sessions (3 per central/ DHO)	Training reports	Lack of funds	MOH, MOA, DEA, Education

ANNEX 2: EDUCATION & AWARENESS (OUTCOMES, OBJECTIVES, STRATEGIES AND OUTPUTS) CONT'D

Strategy 3.2		Development of monitoring and evaluation plan and tools for the in-service training (Establish indicators for various cadres)							
Output Description		Objectively Verifiable Indicator	Output Targets (Per Financial Year)					Source and Means of Verification	Risks and Assumptions	Responsibility
			2017/2018	2018/2019	2019/2020	2020/2021	2021/2022			
Output 1	Monitoring and evaluation plan and tools for the in-service training developed	Number of monitoring and evaluation plan tools developed	One development; one pretesting and finalization	One review meeting	One review meeting	One review meeting	One review meeting	Evaluation tool	Lack of funds	MOH, MOA, DEA, Education
Strategic Objective 4		To Impart knowledge of AMR and related topics through formal education system at primary and secondary school level								
Strategy 4.1		Introduce and strengthen concept of AMR and appropriate use of antimicrobials as part of school curriculum.								
Output Description		Objectively Verifiable Indicator	Output Targets (Per Financial Year)					Source and Means of Verification	Risks and Assumptions	Responsibility
			2017/2018	2018/2019	2019/2020	2020/2021	2021/2022			
Output 1	Curriculum review committees for primary and secondary schools with clear TORs and roadmap established.	Number of review meetings conducted	One orientation meeting; one development and finalization of TORs meeting	One review meeting	One review meeting	One review meeting	One review meeting	Minutes	Lack of funds	MOH, MOA, DEA, Education
Strategy 4.2		Lobby with Ministry of Education, Malawi Institute of Education and relevant stakeholders on the inclusion or mainstreaming of AMR and related topics in the primary and secondary school curricula								
Output Description		Objectively Verifiable Indicator	Output Targets (Per Financial Year)					Source and Means of Verification	Risks and Assumptions	Responsibility
			2017/2018	2018/2019	2019/2020	2020/2021	2021/2022			
Output 1	Meetings conducted with the Ministry of Education, Malawi Institute of Education and relevant stakeholders	Number of meetings conducted	One stakeholder's meeting	One stakeholder's meeting	One stakeholder's meeting	One stakeholder's meeting	One stakeholder's meeting	Minutes		MOH, MOA, DEA, Education

ANNEX 3: SURVEILLANCE & RESEARCH (OUTCOMES, OBJECTIVES, STRATEGIES AND OUTPUTS)

Strategic Outcome		Improved knowledge and evidence of AMR through research and surveillance							
Strategic Objective 1		To strengthen the national AMR surveillance system							
Strategy 1.1		Incorporate AMR into the existing surveillance system							
Output Description		Objectively Verifiable Indicator	Annual Output Targets					Source and Means of Verification	Risks and Assumptions	Responsibility
			2017/2018	2018/2019	2019/2020	2020/2021	2021/2022			
Output 1	Document listing AMR priority pathogens for Malawi developed	AMR priority pathogen document	Three meetings (60 participants each)	Three meetings (60 participants each)	Three meetings (60 participants each)	Three meetings (60 participants each)	Three meetings (60 participants each)			
Output 2	AMR incorporated into the national surveillance system	Number of review meetings conducted	Three meetings (60 participants each)							
Strategy 1.2		Establish a national coordinating centre for surveillance of AMR								
Output Description		Objectively Verifiable Indicator	Annual Output Targets					Source and Means of Verification	Risks and Assumptions	Responsibility
			2017/2018	2018/2019	2019/2020	2020/2021	2021/2022			
Output 1	A multi-disciplinary Taskforce to formalize utilization of the national coordinating centre formed	Formation of a Taskforce	Two meetings (20 participants each)							
Output 2	TORs for AMR National Coordinating Centre developed	TOR Document developed; Number of sensitization meetings conducted	One Meeting (20 participants); Four sensitization meetings							
Output 3	Laboratory based surveillance on AMR strengthened	Training manual developed; Number of staff trained	One workshop to develop manual; Three TOT trainings - one per region; Ten staff trained per district; Sample transport system established	150 new staff trained; One refresher for previously trained staff	150 new staff trained; One refresher for previously trained staff	150 new staff trained; One refresher for previously trained staff	150 new staff trained; One refresher for previously trained staff			

ANNEX 3: SURVEILLANCE & RESEARCH (OUTCOMES, OBJECTIVES, STRATEGIES AND OUTPUTS) CONT'D

Strategy 1.2		Establish a national coordinating centre for surveillance of AMR							
Output Description		Objectively Verifiable Indicator	Annual Output Targets					Source and Means of Verification	Risks and Assumptions	Responsibility
			2017/2018	2018/2019	2019/2020	2020/2021	2021/2022			
Output 4	Equipment and supplies procured	National AMR Coordinating Centre office established and equipped; Number of sites identified for infrastructure development (equipment/supplies procured)	Develop essential and standardized equipment list; equip National Coordinating Centre, Two National reference (CHS and Veterinary) and four central hospital laboratories.	Equip 10 more labs with basic equipment for cultures - identification to be done at Central Hospitals						
Strategy 1.3		Strengthen the national epidemiological surveillance system on AMR in Human Health, Animal Health, Agriculture and Environment								
Output Description		Objectively Verifiable Indicator	Output Targets (Per Financial Year)					Source and Means of Verification	Risks and Assumptions	Responsibility
			2017/2018	2018/2019	2019/2020	2020/2021	2021/2022			
Output 1	Standardized surveillance protocols developed	Protocols and Forms developed	Protocols and Forms developed							
Output 2	Trainings on systematic data collection done	Training manual developed; Number of staff trained	One workshop to develop manual; Three TOT trainings - one per region; Ten staff trained per district	150 new staff trained; One refresher for previously trained staff	150 new staff trained; One refresher for previously trained staff	150 new staff trained; One refresher for previously trained staff	150 new staff trained; One refresher for previously trained staff			
Output 3	AMR Surveillance Web Database developed	Web database developed	Web database development							

ANNEX 3: SURVEILLANCE & RESEARCH (OUTCOMES, OBJECTIVES, STRATEGIES AND OUTPUTS) CONT'D

Strategy 1.3		Strengthen the national epidemiological surveillance system on AMR in Human Health, Animal Health, Agriculture and Environment								
Output Description		Objectively Verifiable Indicator	Output Targets (Per Financial Year)					Source and Means of Verification	Risks and Assumptions	Responsibility
			2017/2018	2018/2019	2019/2020	2020/2021	2021/2022			
Output 4	AMR External Quality Assurance (EQA) System established	EQA program developed	Study tour to NICD; Lab enrolment into EQA; EQA sample preparation and distribution; EQA review meeting	Lab enrolment into EQA; EQA sample preparation and distribution; EQA review meeting	EQA sample preparation and distribution; EQA review meeting	EQA sample preparation and distribution; EQA review meeting	EQA sample preparation and distribution; EQA review meeting			
Output 5	Quarterly reporting system established	Quarterly reports	Four supervision visits; refresher training	Four supervision visits	Four supervision visits	Four supervision visits	Four supervision visits			
Strategy 1.4		Establish mechanism for regular sharing of AMR data across human, animal health, agriculture and environmental sectors								
Output Description		Objectively Verifiable Indicator	Output Targets (Per Financial Year)					Source and Means of Verification	Risks and Assumptions	Responsibility
			2017/2018	2018/2019	2019/2020	2020/2021	2021/2022			
Output 1	MoU of sharing existing surveillance platforms developed	MoU developed	MoU developed							
Output 2	Establishment of a taskforce to review abstracts	Taskforce established	One meeting to establish, One review meeting	Two abstracts review meetings	Two abstracts review meetings	Two abstracts review meetings	Two abstracts review meetings			
Output 3	Dissemination of surveillance data and research findings	Conferences conducted; Number of meetings done	One conference; three meetings; ten workshops targeting media, church and schools	Two conferences; four meetings	Two conferences; four meetings	Two conferences; four meetings	Two conferences; four meetings			

ANNEX 3: SURVEILLANCE & RESEARCH (OUTCOMES, OBJECTIVES, STRATEGIES AND OUTPUTS) CONT'D

Strategic Objective 2		To identify key stakeholders and resources in AMR research							
Strategy 2.1		Create a multi-disciplinary AMR research platform							
Output Description		Objectively Verifiable Indicator	Output Targets (Per Financial Year)					Source and Means of Verification	Risks and Assumptions	Responsibility
			2017/2018	2018/2019	2019/2020	2020/2021	2021/2022			
Output 1	AMR TWG for research composing membership from all key stakeholders established	TWG established	Two meetings - 30 participants each							
Output 2	TORs for TWG developed	TOR document developed; Number of meetings conducted	One meeting - 10 participants							
Output 3	A directory of key stakeholders and resources on AMR research across all sectors – government, academia, NGOs formed	Directory developed; number of meetings conducted	One meeting -30 participants							
Strategic Objective 3		To develop and incorporate AMR research priorities into the National (Health) Research Agenda							
Strategy 3.1		Develop AMR research agenda							
Output Description		Objectively Verifiable Indicator	Output Targets (Per Financial Year)					Source and Means of Verification	Risks and Assumptions	Responsibility
			2017/2018	2018/2019	2019/2020	2020/2021	2021/2022			
Output 1	Task force to develop a research agenda formed	Taskforce formed	One meeting (10 participants)							
Output 2	TORs of the Taskforce developed	TOR document developed; number of meetings	One meeting (10 participants)							
Output 3	AMR research gaps identified	AMR research gaps document; survey conducted	One survey done across the country							
Output 4	Existing situational analysis of AMR research in Malawi updated	Situation analysis document; number of meetings	Two meetings - 30 participants	Two meetings - 30 participants	Two meetings - 30 participants	Two meetings - 30 participants	Two meetings - 30 participants			

ANNEX 3: SURVEILLANCE & RESEARCH (OUTCOMES, OBJECTIVES, STRATEGIES AND OUTPUTS) CONT'D

Strategic Objective 3		To develop and incorporate AMR research priorities into the National (Health) Research Agenda								
Strategy 3.2		Incorporate AMR research priorities into the National (Health) Research Agenda ()								
Output Description		Objectively Verifiable Indicator	OUTPUT TARGETS (PER FINANCIAL YEAR)					Source and Means of Verification	Risks and Assumptions	Responsibility
			2017/2018	2018/2019	2019/2020	2020/2021	2021/2022			
Output 1	AMR research agenda to the National Commission of Science and Technology (NCST) Submitted	AMR research agenda document submitted; AMR research priorities incorporated into national research agenda	1							

ANNEX 4: INFECTION, PREVENTION & CONTROL (OUTCOMES, OBJECTIVES, STRATEGIES & OUTPUTS)

Strategic Outcome		Reduced the incidence of infection through effective sanitation, hygiene and prevention measures							
Strategic Objective 1		To prevent and control infection at national level							
Strategy 1.1		Establish systems and processes for IPC							
Output Description		Objectively Verifiable Indicator	Annual Output Targets					Source and Means of Verification	Risks and Assumptions	Responsibility
			2017/2018	2018/2019	2019/2020	2020/2021	2021/2022			
Output 1	Systems and processes established	TORs developed	One TOR			One TOR				
		Number of policies, guidelines, standards and SOPs developed	One IPC policy	Six guidelines, six SOPs						
		Number of trainings conducted		Six training sessions						
Output 2	National Coordinating Unit strengthened	Presence of national coordinating unit	One coordinating unit							
Output 3	IPC assessments conducted	Number of IPC assessments conducted	One IPC assessment							
Output 4	Adherence to policies monitored	Number of monitoring visits	Two monitoring visits	Two monitoring visits	Two monitoring visits	Two monitoring visits	Two monitoring visits			
Strategy 1.2		Develop appropriate infrastructure for IPC implementation								
Output Description		Objectively Verifiable Indicator	Annual Output Targets					Source and Means of Verification	Risks and Assumptions	Responsibility
			2017/2018	2018/2019	2019/2020	2020/2021	2021/2022			
Output 1	Incinerators constructed	No. of incinerators constructed		Two Incinerators	Two Incinerators	Two Incinerators				
Output 2	Isolation rooms constructed/renovated	No. of Isolation rooms constructed / renovated		Four isolation rooms	Two isolation rooms	Two isolation rooms	Two isolation rooms			
Output 3	Hand washing facilities constructed/ renovated	No. of hand washing facilities	50 hand washing facilities	50 hand washing facilities	50 hand washing facilities	50 hand washing facilities	50 hand washing facilities			
Output 4	Quarantine facilities constructed	No. of quarantine facilities constructed		Two quarantine facilities	One quarantine facility	One quarantine facility	One quarantine facility			

ANNEX 4: INFECTION, PREVENTION & CONTROL (OUTCOMES, OBJECTIVES, STRATEGIES & OUTPUTS) CONT'D

Strategy 1.2		Develop appropriate infrastructure for IPC implementation								
Output 5	IPC infrastructure inspected	No. of inspections	Four inspections	Four Inspections	Four Inspections	Four Inspections	Four Inspections			
Strategy 13		Reintroduce Health Promotion week								
Output Description		Objectively Verifiable Indicator	Annual Output Targets					Source and Means of Verification	Risks and Assumptions	Responsibility
			2017/2018	2018/2019	2019/2020	2020/2021	2021/2022			
Output 1	Health promotion week re-introduced	No. of consultation meetings	Four consultation meetings							
		No. of workshops	Three regional workshops							
		No. of press releases	Eight press releases in different media houses							
		Observance of health promotion week		One health promotion week	One health promotion week	One health promotion week	One health promotion week			
Strategic Objective 2		To prevent and control infection at community level								
Strategy 2.2		Promote personal hygiene and sanitation through behaviour change activities in the communities								
Output Description		Objectively Verifiable Indicator	Output Targets (Per Financial Year)					Source and Means of Verification	Risks and Assumptions	Responsibility
			2017/2018	2018/2019	2019/2020	2020/2021	2021/2022			
Output 1	Personal hygiene and sanitation promoted	No. of assessments on personal hygiene and sanitation	One personal hygiene and sanitation assessment							
		No. of refresher courses conducted	28 trainings	84 trainings	84 trainings	84 trainings	84 trainings			
		No. of awareness campaigns conducted	28 awareness campaigns	28 awareness campaigns	28 awareness campaigns	28 awareness campaigns	28 awareness campaigns			
Output 2	Behaviour change surveys conducted	No. of surveys on personal hygiene conducted			One survey on personal hygiene		One survey on personal hygiene			

ANNEX 4: INFECTION, PREVENTION & CONTROL (OUTCOMES, OBJECTIVES, STRATEGIES & OUTPUTS) CONT'D

Strategy 2.3		Promote safe disposal of antimicrobials								
Output Description		Objectively Verifiable Indicator	Output Targets (Per Financial Year)					Source and Means of Verification	Risks and Assumptions	Responsibility
			2017/2018	2018/2019	2019/2020	2020/2021	2021/2022			
Output 1	Awareness campaigns on proper disposal conducted	No. of awareness campaigns conducted	28 awareness campaigns	28 awareness campaigns	28 awareness campaigns	28 awareness campaigns	28 awareness campaigns			
Strategic Objective 3		To prevent and control Infection at health care and animal health setting								
Strategy 3.1		Strengthen hand hygiene in health care and animal waste								
Output Description		Objectively Verifiable Indicator	Output Targets (Per Financial Year)					Source and Means of Verification	Risks and Assumptions	Responsibility
			2017/2018	2018/2019	2019/2020	2020/2021	2021/2022			
Output 1	Hand hygiene strengthened	No. assessments conducted	One hand hygiene assessment							
		No. of workshops conducted on hand hygiene	Six TOT workshops on hand hygiene	Six TOT workshops on hand hygiene	Six TOT workshops on hand hygiene	Six TOT workshops on hand hygiene	Six TOT workshops on hand hygiene			
		No. of IEC materials developed	1,000 posters; 1,000 fliers; 2,500 t-shirts; 4 bill boards	20 banners; 1,000 posters, 1,000 fliers; 3000 t-shirts	20 banners; 1,000 posters, 1,000 fliers; 3000 t-shirts	20 banners; 1,000 posters, 1,000 fliers; 3000 t-shirts	20 banners; 1,000 posters, 1,000 fliers; 3000 t-shirts			
Output 2	World hand hygiene day observed	No. of hand hygiene campaigns conducted	28 campaigns	28 campaigns	28 campaigns	28 campaigns	28 campaigns			
		Observance of hand hygiene day	One hand hygiene day	One hand hygiene day	One hand hygiene day	One hand hygiene day	One hand hygiene day			
Output 3	Hand hygiene standards monitored	No. of monitoring visits	Four monitoring visits	Four monitoring visits	Four monitoring visits	Four monitoring visits	Four monitoring visits			

ANNEX 4: INFECTION, PREVENTION & CONTROL (OUTCOMES, OBJECTIVES, STRATEGIES & OUTPUTS) CONT'D

Strategy 3.2		Ensure safety of health care and animal health workers								
Output Description		Objectively Verifiable Indicator	Output Targets (Per Financial Year)					Source and Means of Verification	Risks and Assumptions	Responsibility
			2017/2018	2018/2019	2019/2020	2020/2021	2021/2022			
Output 1	Safety of health care and animal health workers ensured	No. of safety policies, standards and protocols developed	Four policies on safety of workers							
		No. of heavy duty gloves procured	10,000 heavy duty gloves	15,000 heavy duty gloves	20,000 heavy duty gloves	15,000 heavy duty gloves	20,000 heavy duty gloves			
		No. of aprons procured	15,000 heavy duty aprons	20,000 heavy duty aprons	20,000 heavy duty aprons	20,000 heavy duty aprons	20,000 heavy duty aprons			
		No of gumboots procured	15,000 gumboots	20,000 gumboots	20,000 gumboots	20,000 gumboots	20,000 gumboots			
		No. of head gears procured	15,000 head gear	20,000 head gear	20,000 head gear	20,000 head gear	20,000 head gear			
		No. of face shields/ masks procured	15,000 Masks	20,000 masks	20,000 masks	20,000 masks	20,000 masks			
		No. of overalls, work suits and uniforms procured	15,000 uniforms	20,000 uniforms	20,000 uniforms	20,000 uniforms	20,000 uniforms			
		No. of workers vaccinated	5,000 vials	7,000 vials	7,000 vials	7,000 vials	7,000 vials			
		No. of workers gone for medical checkups	20,000 workers	20,000 workers	20,000 workers	20,000 workers	20,000 workers			
Output 2	Inspections conducted	No. of inspections	Two inspections	Four inspections	Four inspections	Four inspections	Four inspections			

ANNEX 4: INFECTION, PREVENTION & CONTROL (OUTCOMES, OBJECTIVES, STRATEGIES & OUTPUTS)

Strategy 3.2		Strengthen availability of IPC supplies in health care and animal health settings								
Output Description		Objectively Verifiable Indicator	Output Targets (Per Financial Year)					Source and Means of Verification	Risks and Assumptions	Responsibility
			2017/2018	2018/2019	2019/2020	2020/2021	2021/2022			
Output 1	IPC supplies made available	No. of chemicals procured	2,000L Chlorine; 500L Iodine; 500 L chlorhexidine; 1,000 L; methylated spirit, 1,000L hand rub	2,000L Chlorine; 500L Iodine; 500 L chlorhexidine; 1,000 L; methylated spirit, 1,000L hand rub	2,000L Chlorine; 500L Iodine; 500 L chlorhexidine; 1,000 L; methylated spirit, 1,000L hand rub	2,000L Chlorine; 500L Iodine; 500 L chlorhexidine; 1,000 L; methylated spirit, 1,000L hand rub	2,000L Chlorine; 500L Iodine; 500 L chlorhexidine; 1,000 L; methylated spirit, 1,000L hand rub			
		No. of soaps procured	2,000 cartons soap, 1,000L liquid soap	2,000 cartons soap, 1,000 L liquid soap	2,000 cartons soap, 1,000L liquid soap	2,000 cartons soap, 1,000L liquid soap	2,000 cartons soap, 1,000L liquid soap			
		No. of mops procured	1,0000 mops	15,000 mops	15,000 mops	15,000 mops	15,000 mops			
		No. of moping buckets procured	100,000 buckets	100,000 buckets	150,000 buckets	150,000 buckets	150,000 buckets			
		No. of scrub brushes procured	10,000 brushes	10,000 brushes	10,000 brushes	10,000 brushes	10,000 brushes			
Strategic Objective 4		To prevent and control Infection in Agriculture								
Strategy 4.1		Promote good agriculture practices								
Output Description		Objectively Verifiable Indicator	Output Targets (Per Financial Year)					Source and Means of Verification	Risks and Assumptions	Responsibility
			2017/2018	2018/2019	2019/2020	2020/2021	2021/2022			
Output 1	Good agriculture practices promoted	No of trainings conducted	Six trainings sessions	Six trainings sessions	Six trainings sessions	Six trainings sessions	Six trainings sessions			

ANNEX 4: INFECTION, PREVENTION & CONTROL (OUTCOMES, OBJECTIVES, STRATEGIES & OUTPUTS)

Strategy 4.1		Promote good agriculture practices							
Output Description		Objectively Verifiable Indicator	Output Targets (Per Financial Year)					Source and Means of Verification	Risks and Assumptions	Responsibility
			2017/2018	2018/2019	2019/2020	2020/2021	2021/2022			
Output1	Good agriculture practices promoted	No. of trainings conducted	Six trainings sessions	Six trainings sessions	Six trainings sessions	Six trainings sessions	Six trainings sessions			
		No. of farmers trained	Six training sessions	Six training sessions	Six training sessions	Six training sessions	Six training sessions			
		No. of collaborative sessions conducted	Six sessions	Six sessions	Six sessions	Six sessions	Six sessions			
Output 2	A survey on existing practices conducted	No. of surveys conducted			One survey		One survey			
Strategy 4.2		Ensure workers safety during use of chemicals								
Output Description		Objectively Verifiable Indicator	Output Targets (Per Financial Year)					Source and Means of Verification	Risks and Assumptions	Responsibility
			2017/2018	2018/2019	2019/2020	2020/2021	2021/2022			
Output 1	Workers safety ensured	No. of safety policies, standards and protocols developed	Four safety policies, standards and protocols							
		No. workers gone for medical checkups	20,000 workers	20,000 workers	20,000 workers	20,000 workers	20,000 workers			
Output 2	Routine Inspections conducted	No. of routine inspections	Two inspections	Four Inspections	Four Inspections	Four Inspections	Four Inspections			
Strategic Objective 5		To reduce impacts of AMR on the environment								
Strategy 5.1		Promote safe management of waste from health care, animal health, industry and agriculture								
Output Description		Objectively Verifiable Indicator	Output Targets (Per Financial Year)					Source and Means of Verification	Risks and Assumptions	Responsibility
			2017/2018	2018/2019	2019/2020	2020/2021	2021/2022			
Output 1	Safe management of waste promoted	Availability of waste management plans in all sectors	Four waste management plans							
		No. of waste receptacles procured	50,000 bins	60,000 bins	60,000 bins	70,000 bins	70,000 bins			

ANNEX 4: INFECTION, PREVENTION & CONTROL (OUTCOMES, OBJECTIVES, STRATEGIES & OUTPUTS)

Strategy 4.1		Promote safe management of waste from health care, animal health, industry and Agriculture								
Output 1	Safe management of waste promoted	No. of bin liners procured	100,000 bin liners	120,000 bin liners	120,000 bin liners	140,000 bin liners	140,000 bin liners			
		No. of lobbying meetings	Ten meetings	Ten meetings	Ten meetings	Ten meetings	Ten meetings			
		No. of sensitization meetings	Three regional meetings	Three regional meetings	Three regional meetings	Three regional meetings	Three regional meetings			
		No. workers trained on proper waste disposal	Three regional training sessions	Three regional training sessions	Three regional training sessions	Three regional training sessions	Three regional training sessions			
		No. of inspection conducted	Two inspections	Four Inspections	Four Inspections	Four Inspections	Four Inspections			

ANNEX 5: OPTIMAL USE (OUTCOMES, OBJECTIVES, STRATEGIES AND OUTPUTS)

Strategic Outcome		Optimimal use of antimicrobials medicines in Human and Animal Health and Agriculture								
Strategic Objective 1		Ensure uninterrupted access to high-quality antimicrobial medicines								
Strategy 1.1		Strengthen national regulatory authorities for improved quality, safety and efficacy of antimicrobials								
Output Description		Objectively Verifiable Indicator	Annual Output Targets					Source and Means of Verification	Risks and Assumptions	Responsibility
			2017/2018	2018/2019	2019/2020	2020/2021	2021/2022			
Output 1	National regulatory authority strengthened and regulations implemented	Number of regulatory tools and guidelines updated and disseminated	One consultation meeting; one inception meeting; one review meetings	6,640 copies printed; Four regional dissemination meetings				Reports and documents	Coordination and funding	MoH
Strategy 1.2		Strengthen legislation to regulate prescription and dispensing of antimicrobials								
Output Description										
Output 1	Legislation and regulations strengthened and implemented to regulate prescription and dispensing	Number of prescription and dispensing guidelines developed	One consultation meeting; one review meeting; 19,500 copies printed					Produced documents	Funding	MoH
Strategy 1.3		Develop and enforce an enabling regulatory framework and coordination for regulations on use of antimicrobials in human, animals and agriculture								
Output Description		Objectively Verifiable Indicator	Annual Output Targets					Source and Means of Verification	Risks and Assumptions	Responsibility
			2017/2018	2018/2019	2019/2020	2020/2021	2021/2022			
Output 1	Updated and disseminated guidelines of antimicrobial use in human, animal and agriculture	Number of updated and disseminated guidelines of antimicrobial use	One consultation meeting; one review meeting; and 20,000 copies printed; dissemination of guidelines					The document and report on dissemination	Dissemination funding availability	MoH
Output 2	Regulatory mechanism established for assuring rational use of antibiotics in human, animal and agriculture	Number of regulatory mechanisms established	Two consultation meetings; One review meetings; One workshop on documentation of mechanisms	One review meeting; 6,640 copies printed				The document	Stakeholder cooperation	MoH/MoAIWD

ANNEX 5: OPTIMAL USE (OUTCOMES, OBJECTIVES, STRATEGIES AND OUTPUTS)

Strategy 1.3		Develop and enforce an enabling regulatory framework and coordination for regulations on use of antimicrobials in human, animals and agriculture							
Output Description		Objectively Verifiable Indicator	Annual Output Targets					Source and Means of Verification	Risks and Assumptions	Responsibility
			2017/2018	2018/2019	2019/2020	2020/2021	2021/2022			
Output 3	Developed Integrated Essential Medicines list for use in human, animal and agriculture	Integrated EML	One consultation meeting; One review meeting; One workshop for developing EML; 6,640 EML copies printed; 4 dissemination sessions of EML			One consultation meeting; one review meeting; one workshop for developing EML; 6,640 EML copies printed; Four dissemination sessions of EML		Report/s and EML copies	Cooperation	MoH/ MoAIWD
Output 4	Developed policy document guiding the use of critically important antibiotics in animals and agriculture	Developed policy	Two consultation meetings; one review meeting; one workshop on documentation of policy. Print 6,640 policy document copies	Four dissemination sessions				Report/s and policy document	Lack of funding and coordination	MoH/ MoAIWD/NCC
Strategy 1.4		**Promote good governance on antimicrobial use**								
Output description		Objectively Verifiable Indicator	Annual Output Targets					Source and Means of Verification	Risks and Assumptions	Responsibility
			2017/2018	2018/2019	2019/2020	2020/2021	2021/2022			
Output 1	Structured reporting system established on corruption and theft in human, animal and agriculture	Number of reporting systems established		Three consultation meetings; four workshops for sensitization of the system				Reports	Lack of interest in some stakeholders	NCC and Regulatory bodies
		Number of guidelines produced and disseminated		One multi-sectoral workshop; 6,640 copies printed and distributed				Guidelines document; distribution report		MoH/MoAIWD

ANNEX 5: OPTIMAL USE (OUTCOMES, OBJECTIVES, STRATEGIES AND OUTPUTS)

Strategy 1.4		Promote good governance on antimicrobial use								
Output description		Objectively Verifiable Indicator	Annual Output Targets					Source and Means of Verification	Risks and Assumptions	Responsibility
			2017/2018	2018/2019	2019/2020	2020/2021	2021/2022			
Output 2	Adopted WHO model framework for Good Governance in the Pharmaceutical sector (Malawi Framework for Good Governance in the Pharmaceutical sector)	Number of documents products	Three consultation meeting; One workshop to adopt the document					Reports and produced document		MoH/MoAIWD

Strategy 1.5		Strengthen supply chain systems								
Output Description		Objectively Verifiable Indicator	Output Targets (Per Financial Year)					Source and Means of Verification	Risks and	Responsibility
			2017/2018	2018/2019	2019/2020	2020/2021	2021/2022			
Output 1	Disseminated drug donation guidelines to donors and recipients	Number of guidelines disseminated		6,640 copies printed				Guidelines documents		PMPB and MoH
Output 2	Developed importation and sale guidelines for veterinary medicines	Number of guidelines developed	One consultation meeting; one workshop to develop the guidelines	3,000 copies printed and disseminated				Printed guidelines	Funds available	MoAIWD / Regulatory bodies
Output 3	Minimized utilization of informal antimicrobial supply chains by public	Proportion of facilities utilizing formal antimicrobial supply chain		Two country wide supervisions	Four country wide supervision	Four country wide supervision	Four country wide supervision	Supervision reports	Funds available	MoH / MoAIWD / Regulatory bodies
Output 5	Developed monitoring systems for antimicrobial medicines supply chains	Number of monitoring tools developed and disseminated	Two consultation meeting; 1 workshop to develop the monitoring tools	One test for M& E tools ; printing M&E 40,00 copies; Four distribution sessions of tools	4,000 copies printed and distributed	4,000 copies printed and distributed	4,000 copies printed and distributed	M&E tools	Funds available	MoH / MoAIWD / Regulatory bodies

ANNEX 5: OPTIMAL USE (OUTCOMES, OBJECTIVES, STRATEGIES AND OUTPUTS)

Strategic Objective 2		Improve appropriate use of antimicrobials in health systems								
Strategy 2.1		Establish antimicrobial stewardship programmes in human and animal health systems								
Output Description		Objectively Verifiable Indicator	OUTPUT TARGETS (PER FINANCIAL YEAR)					Source and Means of Verification	Risks and Assumptions	Responsibility
			2017/2018	2018/2019	2019/2020	2020/2021	2021/2022			
Output 1	Antimicrobial stewardship programmes implemented in human, animal and agriculture facilities	Number of stewardship committees formed at facility level		Four regional briefings; 32 committees formed	384 committee monthly meetings	384 committee monthly meetings	384 committee monthly meetings	Reports / minutes	Funds available	MoH / MoAIWD / Health facilities
Output 2	Regular review of antimicrobial stewardship programmes done	Number of programmes reviewed	Two consultation meeting; One workshop to develop the monitoring tools	One test for M& E tools ; printing M&E 40 copies; one supervisory visit	40 copies printed; 1 annual supervisory visit	40 copies printed; 1 annual supervisory visit	40 copies printed; 1 annual supervisory visit	M&E tools	Funds available	MoH / MoAIWD / Regulatory bodies
Output 3	Developed structured (and mandatory) training materials / tool on optimal antimicrobial use	Number of training materials/tools developed		Two consultation meetings; Two workshops to develop training tool; testing training tool	Testing training tools ; 20,000 copies					MoH / MoAIWD / Regulatory bodies
		Number of trainings conducted			Four regional sessions	Four regional sessions	Four regional sessions			MoH / MoAIWD / Regulatory bodies
		% of attendance at training session			50%	60%	70%	Report / Register	Funds available	MoH / MoAIWD / Regulatory bodies

ANNEX 6: INVESTMENT & SUSTAINABILITY (OUTCOMES, OBJECTIVES, STRATEGIES AND OUTPUTS)

Strategic Outcome		Ensure sustainable investment through research and development.							
Strategic Objective 1		To Develop the economic case for investment that address the country's AMR needs							
Strategy 1.1		Develop an all-inclusive plan used for securing and lobbing funding for AMR implementation							
Output Description		Objectively Verifiable Indicator	Annual Output Targets					Source and Means of Verification	Risks and Assumptions	Responsibility
			2017/2018	2018/2019	2019/2020	2020/2021	2021/2022			
Output 1	Economic impact needs assessment Conducted on AMR	Economic Impact Needs Assessment report produced and disseminated	46 stakeholder meetings	1,780 copies of the report						MoH
Output 2	Economic gaps identified to inform priorities for investment in AMR implementation	Report on economic gap compiled	Ten inspection reports	1,000 Copies printed	Six Stakeholder meetings					MoH
Output 3	Funding investment plan developed	Investment plan produced and disseminated	Six dissemination meetings							MoH
Output 4	Donors and key implementing partners mapped out	List of donors and key implementing partners produced	Six stakeholder meetings	Two review meetings						MoH
Output 5	Increased funding within government ministries	AMR activities incorporated with ORT funding with government ministries	20 stakeholder meeting	10 review meetings						MoH
Output 6	Monitoring and Evaluation plan developed	M&E tools developed and implemented	30 stakeholder meeting, 10 review meeting, 1 piloting tool	Five review meetings						MoH
Output 7	Adaptation mechanism of AMR activities developed	M&E plan adapted	Six dissemination meeting, six trainings	Six review meetings						MoH

ANNEX 6: INVESTMENT & SUSTAINABILITY (OUTCOMES, OBJECTIVES, STRATEGIES AND OUTPUTS)

Strategic Objective 2		To develop an effective mechanism for a sustainable AMR implementation							
Strategy 2.1		**Develop an all-inclusive effective plan for sustainable AMR implementation**							
Output Description		Objectively Verifiable Indicator	Output Targets (Per Financial Year)						
			2017/2018	2018/2019	2019/2020	2020/2021	2021/2022	Source and Means of Verification	Risks and Assumptions	Responsibility
Output 1	Investment need for a sustainable AMR National Action Plan established	Investment needs produced and disseminated	Six dissemination meetings							MoH
Output 2	Policy makers and other stake holders engaged in implementation of AMR activities	Report on engagement meetings with policy makers and stakeholders compiled	Three meetings on development of TORs	Four meetings to share and disseminate TORs						MoH
Output 3	Partnership strengthened both at national, regional and international level for AMR implementation.	MOU for partnership signed	Four quarterly meetings	Four review meetings						MoH
Strategy 2.2		**Strengthen organization capacity for a sustainable AMR implementation**							
Output Description		Objectively Verifiable Indicator	Output Targets (Per Financial Year)					Source and Means of Verification	Risks and Assumptions	Responsibility
			2017/2018	2018/2019	2019/2020	2020/2021	2021/2022			
Output 1	Infrastructure constructed	No. of infrastructure constructed, No of vehicles procured and No of computers procured	Three vehicles procured; four computers procured							
Output 2	Equipment improved for AMR implementation	No. of equipment procured, No. of office supplies procured	Ten office supplies procured							
Strategy 2.3		**Monitoring and Evaluation**							
Output Description		Objectively Verifiable Indicator	Output Targets (Per Financial Year)					Source and Means of Verification	Risks and Assumptions	Responsibility
			2017/2018	2018/2019	2019/2020	2020/2021	2021/2022			
Output 1	Data capturing tools developed for AMR implementation	No. of data capturing tools developed	Three workshops to develop the tools							

ANNEX 6: INVESTMENT & SUSTAINABILITY (OUTCOMES, OBJECTIVES, STRATEGIES AND OUTPUTS)

Strategic Objective 3		Identify operational research priorities for participation in international collaborative research to support the development of new medicines, diagnostic tools and vaccines							
Strategy 3.1		Establish procedures for participation in international collaborative research to support the development of new medicine, diagnostic tool and vaccines							
Output Description		Objectively Verifiable Indicator	Output Targets (Per Financial Year)					Source and Means of Verification	Risks and Assumptions	Responsibility
			2017/2018	2018/2019	2019/2020	2020/2021	2021/2022			
Output 1	Research priorities for AMR innovation defined	No. of defined research priorities for AMR innovation	A workshop to compile a document on research priorities							MoH
Output 2	Need for new medicines and diagnostic tools and vaccines analyzed	No. of needs identified for AMR innovation	One workshop to compile needs							MoH
Output 3	Plan to promote research for innovation to address AMR developed	No. of meetings conducted to promote research for AMR innovation	Three regional meetings	Three regional meetings	Three regional meetings	Three regional meetings	Three regional meetings			MoH

Strategic Objective 4		Identify operational research priorities for participation in international collaborative research to support the development of new medicines, diagnostic tools and vaccines							
Strategy 4.1		Strengthen and streamline international collaboration on AMR							
Output Description		Objectively Verifiable Indicator	Output Targets (Per Financial Year)					Source and Means of Verification	Risks and Assumptions	Responsibility
			2017/2018	2018/2019	2019/2020	2020/2021	2021/2022			
Output 1	Existing collaboration on AMR reviewed	MOU signed		100 copies printed						MoH
Output 2	Collaboration at national, Regional and international level	No. of collaboration meetings conducted	Four meetings	Four meetings	Four meetings	Four meetings	Four meetings			MoH

Strategy 4.2		Strengthen inter-sectoral coordination of AMR activities							
Output Description		Objectively Verifiable Indicator	Output Targets (Per Financial Year)					Source and Means of Verification	Risks and Assumptions	Responsibility
			2017/2018	2018/2019	2019/2020	2020/2021	2021/2022			
Output 1	Cross-cutting inter-sectoral coordination mechanism on AMR established	No. of meetings on inter-sectoral coordination	Two meetings	Two meetings	Two meetings	Two meetings	Two meetings			MoH
Output 2	Priority areas of action to strengthen coordination mechanism identified	No. of priority areas documented	Two workshops to compile priority areas							MoH

ANNEX 6: INVESTMENT & SUSTAINABILITY (OUTCOMES, OBJECTIVES, STRATEGIES AND OUTPUTS)

Strategic Objective 5		Strengthen National collaboration to address AMR containment in disease control programs							
Strategy 5.1		Strengthen drug resistance containment activities of disease control programs with AMR program							
Output Description		Objectively Verifiable Indicator	Output Targets (Per Financial Year)					Source and Means of Verification	Risks and Assumptions	Responsibility
			2017/2018	2018/2019	2019/2020	2020/2021	2021/2022			
Output 1	Linkages between HIV drug resistance activities and MDR/XDR-TB activities established	Percentage of HIV &MDR/XDR-TB activities linked to AMR containment activities	Two workshops to link HIV drug resistance activities to IDSR programme							MoH
Output 2	AMR containment activities in alignment with IDSR program integrated	No. of integrated activities for IDSR & AMR containment	Three workshops to align AMR containment activities to IDSR programme							MoH

ANNEX 7: ANNUAL WORK PLAN (2017/18)

EDUCATION AND RESEARCH											
Strategic Objective			To Increase National Awareness of AMR								
Strategy				Monthly Costs (MK) (2017/18)							
Output 1	Sub-Activity	Specific Quantities	Unit Costs	2017		2018		TOTAL Budget	Source of Funds	Risks and Assumptions	Responsibility
				Jul–Sep 2017	Oct-Dec 2017	Jan- Mar 2018	Apr-Jun 2018				
Establishment of an evidence-based awareness programme targeting audiences in general public, policy makers and health care providers, veterinarians and other animal health providers, environmental practitioners and farmers											
AMR awareness and advocacy materials Developed / adopted / translated	Form a task force	1		Form a task force	Translate materials	Conduct a meeting to adopt materials				Lack of funds	MOH; MOA; DEA; MoEST
	Conduct meetings to review advocacy materials	1		Conduct meetings to review advocacy materials	Pre-test the materials	Disseminate materials					
	Pre-test the materials	1			Print materials						
	Conduct a meeting to adopt materials	4									
	Translate materials										
	Print materials	1									
	Disseminate materials	6									

ANNEX 7: ANNUAL WORK PLAN (2017/18)

EDUCATION AND RESEARCH											
Output 1	Sub-Activity	Specific Quantities	Unit Costs	2017		2018		TOTAL Budget	Source of Funds	Risks and Assumptions	Responsibility
				Jul–Sep 2017	Oct-Dec 2017	Jan- Mar 2018	Apr-Jun 2018				
	Establishment of an evidence-based awareness programme targeting audiences in general public, policy makers and health care providers, veterinarians and other animal health providers, environmental practitioners and farmers										
Targeted awareness activities to the specific audiences Implemented	Conduct planning meetings for targeted awareness activities				Conduct planning meetings for targeted awareness activities	Distribute awareness and advocacy materials	Conduct awareness campaigns				
	Conduct awareness campaigns					Conduct planning meetings for targeted awareness activities	Plan and conduct TV and radio programmes				
	Distribute awareness and advocacy materials										
	Plan and conduct TV and radio programmes										
Output 2											
Conduct a behaviour change study on AMR	Plan to conduct study				Start a baseline study						
	Study implementation										
	Data collection and supervision										
	Analysis of data										
	M&E of the study										
	Printing										
	Dissemination										

ANNEX 7: ANNUAL WORK PLAN (2017/18)

EDUCATION AND RESEARCH											
Output 1	Sub-Activity	Specific Quantities	Unit Costs	2017		2018		TOTAL Budget	Source of Funds	Risks and Assumptions	Responsibility
				Jul–Sep 2017	Oct-Dec 2017	Jan- Mar 2018	Apr-Jun 2018				
	Establishment of an evidence-based awareness programme targeting audiences in general public, policy makers and health care providers, veterinarians and other animal health providers, environmental practitioners and farmers										
Awareness raising events in line with world AMR awareness week Implemented	Form a task force				Form a task force	Printing of awareness materials	□ Implement awareness-raising events □ Review meeting				
	Implement awareness-raising events										
	Printing of awareness materials										
	Review meeting										
Output 2											
A platform to communicate information on AMR (Website) Launched and running	Plan, launch and run a platform to communicate				Plan, launch and run a platform to communicate						
	Educate and engage with media, pharmaceutical industries, CSOs, NGOs, politicians, community leaders and other relevant stakeholders										
Output 1											
Regional seminars with media, Pharmaceutical industries and other stakeholders on AMR conducted	Plan and conduct seminar					Plan and conduct seminar					
	Print materials					Print materials					
	Book conference centre										

ANNEX 7: ANNUAL WORK PLAN (2017/18) CONT'D

EDUCATION AND RESEARCH											
	Sub-Activity	Specific Quantities	Unit Costs	2017		2018		TOTAL Budget	Source of Funds	Risks and Assumptions	Responsibility
				Jul–Sep 2017	Oct-Dec 2017	Jan- Mar 2018	Apr-Jun 2018				
Output 2											
Media and other stakeholders in all AMR activities in Malawi engaged	Plan and conduct review meetings					Plan and conduct seminar					
	Print materials					Print materials					
Output 3											
Media coverage of AMR activities monitored	Conduct assessment of media coverage					Conduct assessment of media coverage					
	Conduct an assessment on socio behavioural drivers and determinants										
Output 1											
Media coverage of AMR activities Monitored	Conduct assessment of media coverage					Conduct assessment of media coverage					
Rapid qualitative assessment among patients, communities, healthcare providers, pharmacists, drug dispensers, pharmaceutical sales representatives, animal production units, farmers, feed producers and environmental workers conducted	Plan to conduct an assessment					Start a qualitative study					
	Run and implement the study										
	Collect data										
	Analyze data										
	Supervision										
	M&E of study										

ANNEX 7: ANNUAL WORK PLAN (2017/18) CONT'D

EDUCATION AND RESEARCH											
Output 2	Sub-Activity	Specific Quantities	Unit Costs	2017		2018		TOTAL Budget	Source of Funds	Risks and Assumptions	Responsibility
				Jul–Sep 2017	Oct-Dec 2017	Jan- Mar 2018	Apr-Jun 2018				
A national quantitative survey on knowledge, awareness and practices (KAP) among public healthcare, animal production, agriculture and pharmaceutical sector conducted	Plan to conduct an assessment					Start a quantitative assessment					
	Run and implement the study										
	Collect data										
	Analyze data										
	Supervision										
	M&E of study										
	Establish a formal multi-sectoral and multi-disciplinary advocacy, communication, and social mobilization (ACSM) working group										
Output 1											
TORs of the ACSM WG, with members nominated from key constituencies and stakeholders developed	Form a task-force team					Form a task-force team	Plan and conduct a workshop with the team				
	Develop TORs for the task-force										
	Plan and conduct a workshop with the team										
	Print materials for the workshop										

ANNEX 7: ANNUAL WORK PLAN (2017/18) CONT'D

EDUCATION AND RESEARCH											
	Sub-Activity	Specific Quantities	Unit Costs	2017		2018		TOTAL Budget	Source of Funds	Risks and Assumptions	Responsibility
				Jul–Sep 2017	Oct-Dec 2017	Jan- Mar 2018	Apr-Jun 2018				
Output 2											
A robust evidence-based ACSM strategy and action plan to respond to the social behavioural drivers and determinants of AMR developed	Plan and conduct review meeting on study findings						Plan and conduct review meeting on study findings				
	Develop strategic action plan						Develop strategic action plan				
Output 3											
Resources from government and donors to finance strategy development, research studies, and implementation of ASCM activities identified	Conduct and Plan review meetings with stakeholders				Conduct and Plan review meetings with stakeholders						
	Plan, launch and implement a series of media and public communication events every 2 months, each focused separately on Objectives 1 to 5 of the GAP/NAP										
Output 1											
Activities to commemorate annual world AMR awareness week planned and implemented	Form a task force			Form a task force		Implement awareness-raising events	☐ Printing of awareness materials ☐ Review meeting				
	Implement awareness-raising events										

ANNEX 7: ANNUAL WORK PLAN (2017/18) CONT'D

EDUCATION AND RESEARCH											
	Sub-Activity	Specific Quantities	Unit Costs	2017		2018		TOTAL Budget	Source of Funds	Risks and Assumptions	Responsibility
				Jul–Sep 2017	Oct-Dec 2017	Jan- Mar 2018	Apr-Jun 2018				
Activities to commemorate annual world AMR awareness week planned and implemented	Printing of awareness materials										
	Review meeting										
Output 2											
Sets of specific activities and events grouped around each of objectives 1 to 5, developed and implemented every two months spread	Plan and conduct review meetings			Plan and conduct review meetings	Plan and conduct review meetings	Plan and conduct review meetings	Plan and conduct review meetings				
	Develop a mechanism and digital platform that links social behavioural practices to the GLASS AMR surveillance network										
Output 1											
Protocols and cross-referenced data collection and analysis for establishing an AMR behavioural surveillance system to help inform target policy, regulatory, and practice reforms including community and hospital-based stewardship programmes	Form a task-force				Form a task-force		M&E meeting				
	Briefing meeting				Briefing meeting						
	M&E meeting										

ANNEX 7: ANNUAL WORK PLAN (2017/18) CONT'D

EDUCATION AND RESEARCH											
	Sub-Activity	Specific Quantities	Unit Costs	2017		2018		TOTAL Budget	Source of Funds	Risks and Assumptions	Responsibility
				Jul–Sep 2017	Oct-Dec 2017	Jan- Mar 2018	Apr-Jun 2018				
Output 2											
Use of digital platform developed, trained, implemented, monitored and evaluated	Develop and pre-test of the platform				Hire a consultant						
	Train the users				Develop and pre-test of the platform						
	Implementation				Train the users		M&E				
	M&E										
	Hire a consultant										
	Lobbying with training institutions, regulatory bodies and other relevant stakeholders on AMR pre-service training										
Output 1											
Meetings with training institutions (human and animal health), regulatory bodies and other relevant stakeholders on AMR pre-service training conducted	Plan and conduct a meeting					Plan and conduct a meeting					

ANNEX 7: ANNUAL WORK PLAN (2017/18) CONT'D

EDUCATION AND RESEARCH											
	Sub-Activity	Specific Quantities	Unit Costs	2017		2018		TOTAL Budget	Source of Funds	Risks and Assumptions	Responsibility
				Jul–Sep 2017	Oct-Dec 2017	Jan- Mar 2018	Apr-Jun 2018				
Output 2											
Curriculum review committee with clear TORs and road map established	Form a review committee										
	Develop clear TORs										
	Print materials										
	Conduct a review meeting										
Output 3											
Curriculum in relation to AMR for human and animal health, agriculture and environmental pre-service training reviewed	Plan and conduct review meetings		Plan and conduct review meetings				Plan and conduct review meetings				
	Meeting to present review findings										
Output 4											
Curriculum in relation to AMR for human and animal health, agriculture and environmental pre-service training reviewed	Plan and conduct review meetings			Plan and conduct review meetings							
	Meeting to present review findings										

ANNEX 7: ANNUAL WORK PLAN (2017/18) CONT'D

EDUCATION AND RESEARCH											
	Sub-Activity	Specific Quantities	Unit Costs	2017		2018		TOTAL Budget	Source of Funds	Risks and Assumptions	Responsibility
				Jul–Sep 2017	Oct-Dec 2017	Jan- Mar 2018	Apr-Jun 2018				
Output 5											
Tutors and lecturers in relevant sectors trained	Plan and conduct trainings					Plan and conduct trainings					
	Print training materials										
Output 6											
Training manuals and materials developed, pretested and adopted	Develop and pre-test training manuals				Develop and pre-test training manuals	Adoption and printing of manuals					
	Adoption and printing of manuals										
	Development of monitoring and evaluation plan and tools for the in-service training 2.3.2 Establish indicators for various cadres										
Output 1											
Monitoring and evaluation plan and tools for the in-service training developed	Develop and pre-test tools for in-service training										
	Adoption and implementation of tools										

ANNEX 7: ANNUAL WORK PLAN (2017/18) CONT'D

EDUCATION AND RESEARCH											
	Sub-Activity	Specific Quantities	Unit Costs	2017		2018		TOTAL Budget	Source of Funds	Risks and Assumptions	Responsibility
				Jul–Sep 2017	Oct-Dec 2017	Jan- Mar 2018	Apr-Jun 2018				
Output 2											
Curriculum review committees for primary and secondary schools with clear TORs and roadmap established	Form a review committee					Form a review committee					
	Develop clear TORs					Develop clear TORs					
	Print materials					Print materials					
	Conduct a review meeting					Form a review committee	Conduct a review meeting				
	Lobby with Ministry of Education, Malawi Institute of Education and relevant stakeholders on the inclusion or mainstreaming of AMR and related topics in the primary and secondary school curricula										
Output 1	Meetings conducted with the Ministry of Education, Malawi Institute of Education and relevant stakeholders	Plan and conduct meetings				Plan and conduct meetings					

ANNEX 7: ANNUAL WORK PLAN (2017/18) CONT'D

SURVEILLANCE & RESEARCH											
Strategic Objective 1			To strengthen the national AMR surveillance system								
Strategy 1.1			Incorporate AMR into the existing surveillance system								
				Monthly Costs (MK) (2017/18)							
Output 1	Sub-Activity	Specific Quantities	Unit Costs	2017		2018		TOTAL Budget	Source of Funds	Risks and Assumptions	Responsibility
				Jul–Sep 2017	Oct-Dec 2017	Jan- Mar 2018	Apr-Jun 2018				
Document listing AMR priority pathogens for Malawi developed	Conduct a meeting to define AMR Malawi priority pathogens to report and incorporate them into the existing surveillance system	Three meetings - 60 participants each		First & second meetings	Third meeting						
AMR incorporated into the national surveillance system	Conduct a table-top review on existing surveillance system to identify AMR gaps and surveillance platforms	Three meetings - 60 participants each		First & second meetings	Third meeting						
Strategy 1.2			Establish a national coordinating centre for surveillance of AMR								
A multi-disciplinary Taskforce to formalize utilization of the national coordinating centre formed	Form a multi-disciplinary Taskforce to formalize utilization of the national coordinating centre	Two meetings - 40 participants each		First & second meetings							
TORs for AMR National Coordinating Centre developed	Conduct a working session to develop TORs for AMR for the national coordinating centre	One meetings - 20 participants each		Meeting							

ANNEX 7: ANNUAL WORK PLAN (2017/18) CONT'D

SURVEILLANCE & RESEARCH											
	Sub-Activity	Specific Quantities	Unit Costs	2017		2018		TOTAL Budget	Source of Funds	Risks and Assumptions	Responsibility
				Jul–Sep 2017	Oct-Dec 2017	Jan- Mar 2018	Apr-Jun 2018				
Strategy 1.2			Establish a national coordinating centre for surveillance of AMR								
TORs for AMR National Coordinating Centre developed	Conduct a sensitization meeting on the formalization of the coordinating centre to the public and other stakeholders	Four sensitization meetings				Four sensitization meetings					
Laboratory based surveillance on AMR strengthened	Conduct a working session to develop standardized laboratory surveillance protocols	One workshop - 40 participants		One workshop							
	Train TOT	Three trainings - 2 participants per district (56 total)	Three trainings								
	Train staff on AMR surveillance	15 trainings (3 per zone) - 280 participants in total		15 trainings							
Equipment and supplies procured	Identify sites for infrastructure development for lab	One meeting - 40 participants	Site Identification								
	Site Assessment of equipment	One site visit	Assessment Visit								
	Procurement of lab equipment and supplies, consumables	Essential equipment based on site need									
	Procurement of office equipment and supplies	Essential equipment based on site need									

ANNEX 7: ANNUAL WORK PLAN (2017/18) CONT'D

SURVEILLANCE & RESEARCH											
	Sub-Activity	Specific Quantities	Unit Costs	2017		2018		TOTAL Budget	Source of Funds	Risks and Assumptions	Responsibility
				Jul–Sep 2017	Oct-Dec 2017	Jan- Mar 2018	Apr-Jun 2018				
Strategy 1.2			Establish a national coordinating centre for surveillance of AMR								
Equipment and supplies procured	Procurement of motor vehicles	Three vehicles	Vehicle Procurement								
Strategy 1.3			Strengthen the national epidemiological surveillance system on AMR in human health, animal health, agriculture and environment								
Standardized surveillance protocols developed	Conduct active and passive surveillance data collection on AMR from the satellite labs	Monthly visits - 6 sites									
	Document surveillance data	Computers, printers, toner, data entry clerks, stationery									
Trainings on systematic data collection done	Conduct trainings on systematic collection of data	15 trainings (3 per zone) - 280 participants in total			15 trainings						
AMR surveillance web database developed	Design a programme and web database	Procure Consultant		Consultant							
	Conduct trainings on web database use	One training		One training							
AMR External Quality Assurance System established	Conduct a study tour to NICD	One study tour		Tour							
	Test and adopt the procedures	National reference laboratory enrolled		☐ Procure EQA ☐ Review results							

SURVEILLANCE & RESEARCH											
	Sub-Activity	Specific Quantities	Unit Costs	2017		2018		TOTAL Budget	Source of Funds	Risks and Assumptions	Responsibility
				Jul–Sep 2017	Oct-Dec 2017	Jan- Mar 2018	Apr-Jun 2018				
Strategy 1.3			Strengthen the national epidemiological surveillance system on AMR in Human Health, Animal Health, Agriculture and Environment								
AMR External Quality Assurance System established	AMR External Quality Assurance System established	AMR External Quality Assurance System established		Five laboratories enrolled							
	Preparation of EQA samples	EQA materials		EQA							
	Distribution of EQA sample to enrolled labs	Courier/Transport									
	Consolidate EQA data and provide feedback	Quarterly meetings		First meeting	Second meeting	Third meeting	Fourth meeting				
	Conduct refresher training EQA system	One training		EQA training							
Quarterly reporting system established	Conduct supervisory visits			Three supervisory visits	First meeting	Second meeting	Third meeting				
	Conduct review meetings	Three meetings			First meeting	Second meeting	Third meeting				
Strategy 1.4			Establish mechanism for regular sharing of AMR data across human, animal health, agriculture and environmental sectors								
MoU of sharing existing surveillance platforms developed	Conduct a meeting to develop MoU with existing surveillance platforms for data sharing	One meeting			Meeting						

ANNEX 7: ANNUAL WORK PLAN (2017/18) CONT'D

SURVEILLANCE & RESEARCH											
	Sub-Activity	Specific Quantities	Unit Costs	2017		2018		TOTAL Budget	Source of Funds	Risks and Assumptions	Responsibility
				Jul–Sep 2017	Oct-Dec 2017	Jan- Mar 2018	Apr-Jun 2018				
Strategy 1.4			Establish mechanism for regular sharing of AMR data across human, animal health, agriculture and environmental sectors								
Standardized surveillance protocols developed	Conduct active and passive surveillance data collection on AMR from the satellite labs	Monthly visits - 6 sites									
	Document surveillance data	Computers, Printers, Toner, Data entry clerks, Stationery									
Trainings on systematic data collection done	Conduct trainings on systematic collection of data	15 trainings (3 per zone) - 280 participants in total		15 trainings							
AMR surveillance web database developed	Design a programme and web database	Procure Consultant		Consultant							
	Conduct trainings on web database use	One training		One training							
AMR External Quality Assurance System established	Conduct a study tour to NICD	One study Tour		Tour							
	Test and adopt the procedures	National reference laboratory enrolled		☐ Procure EQA ☐ Review results							
	AMR External Quality Assurance System established	AMR External Quality Assurance System established		Five laboratories enrolled							
	Preparation of EQA samples	EQA materials		EQA							

ANNEX 7: ANNUAL WORK PLAN (2017/18) CONT'D

SURVEILLANCE & RESEARCH											
	Sub-Activity	Specific Quantities	Unit Costs	2017		2018		TOTAL Budget	Source of Funds	Risks and Assumptions	Responsibility
				Jul–Sep 2017	Oct-Dec 2017	Jan- Mar 2018	Apr-Jun 2018				
Strategy 1.4			Establish mechanism for regular sharing of AMR data across human, animal health, agriculture and environmental sectors								
AMR External Quality Assurance System established	Preparation of EQA samples	EQA materials		EQA							
	Distribution of EQA sample to enrolled laboratory	Courier/Transport									
	Consolidate EQA data and provide feedback	Quarterly meetings		First meeting	Second meeting	Third meeting	Fourth meeting				
	Conduct refresher training EQA system	One training		EQA training							
Quarterly reporting system established	Conduct Supervisory visits	Three supervisory visits			First meeting	Second meeting	Third meeting				
	Conduct Supervisory visits	Three supervisory visits			First meeting	Second meeting	Third meeting				
	Conduct review meetings	Three meetings			First meeting	Second meeting	Third meeting				
Strategy 1.5			Establish mechanism for regular sharing of AMR data across human, animal health, agriculture and environmental sectors								
MoU of sharing existing surveillance platforms developed	Conduct a meeting to develop MoU with existing surveillance platforms for data sharing	One meeting				Meeting					
Establishment of a taskforce to review abstracts	Development of ToRs for the Taskforce	One meeting									

ANNEX 7: ANNUAL WORK PLAN (2017/18) CONT'D

SURVEILLANCE & RESEARCH											
	Sub-Activity	Specific Quantities	Unit Costs	2017		2018		TOTAL Budget	Source of Funds	Risks and Assumptions	Responsibility
				Jul–Sep 2017	Oct-Dec 2017	Jan- Mar 2018	Apr-Jun 2018				
Strategy 1.5			Establish mechanism for regular sharing of AMR data across human, animal health, agriculture and environmental sectors								
Establishment of a taskforce to review abstracts	Development of tools for grading and selection of abstracts	One meeting				Meeting					
	Conduct meetings to select abstracts for dissemination	One meeting					Meeting				
	Conduct biannual AMR conferences for human, animal health, agriculture and environmental sectors	One conference					Conference				
Dissemination of Surveillance data and research findings	Disseminate surveillance data through workshops, Media, website, churches and schools.	10 workshops				Five workshops	Five workshops				
	Conduct multi-sectoral (human, animal health, agriculture and environment) quarterly meetings to share AMR data	Three meetings			First meeting	Second meeting	Third meeting				

ANNEX 7: ANNUAL WORK PLAN (2017/18) CONT'D

SURVEILLANCE & RESEARCH											
Strategic Objective 2			To identify key stakeholders and resources in AMR research								
Strategy 2.1			Create a multi-disciplinary AMR research platform								
				Monthly Costs (MK) (2017/18)							
Output 1	Sub-Activity	Specific Quantities	Unit Costs	2017		2018		TOTAL Budget	Source of Funds	Risks and Assumptions	Responsibility
				Jul–Sep 2017	Oct-Dec 2017	Jan- Mar 2018	Apr-Jun 2018				
AMR TWG for research composing membership from all key stakeholders established	Create an AMR TWG for research composing membership from all key stakeholders	Two meetings		Two meetings							
TORs for TWG developed	Conduct meetings to develop ToRs for TWG for research	One meeting		One meeting							
	Conduct quarterly meetings for TWG	Three meetings			First meeting	Second meeting	Third meeting				
A directory of key stakeholders and resources on AMR research across all sectors – government, academia, NGOs formed	Conduct a meeting with stakeholders involved in AMR research across all sectors – government, academia, NGOs	One meeting		One meeting							
	Collect information on on-going studies in AMR in Malawi	One visit			Visits						
	Assess the human / infrastructure / equipment / financial resources that already exists for AMR research in Malawi	One visit			Visits						

ANNEX 7: ANNUAL WORK PLAN (2017/18) CONT'D

SURVEILLANCE & RESEARCH											
Strategic Objective 3			To develop and incorporate AMR research priorities into the National (Health) Research Agenda								
Strategy 3.1			Develop AMR research agenda								
				Monthly Costs (MK) (2017/18)							
Output 1	Sub-Activity	Specific Quantities	Unit Costs	2017		2018		TOTAL Budget	Source of Funds	Risks and Assumptions	Responsibility
				Jul–Sep 2017	Oct-Dec 2017	Jan- Mar 2018	Apr-Jun 2018				
Task force to develop a research agenda formed	Hold task force meetings to develop a research agenda				First and second meetings						
TORs of the Taskforce developed	Hold a meeting to develop ToRs for the task force				Meeting						
AMR research gaps identified	Conduct a baseline survey on research gaps in relation to AMR	Survey (procure consultant)		Survey							
	Conduct a literature review on AMR research that has been performed in Malawi to date	Computer, internet			Completed						
	Compile an abstract of past and present (both published and unpublished) AMR studies in Malawi	Computer, internet									
Existing situational analysis of AMR research in Malawi updated	Conduct meetings to update the existing situational analysis of AMR research in Malawi	Two meetings			First meeting		Second meeting				

ANNEX 7: ANNUAL WORK PLAN (2017/18) CONT'D

SURVEILLANCE & RESEARCH											
	Sub-Activity	Specific Quantities	Unit Costs	2017		2018		TOTAL Budget	Source of Funds	Risks and Assumptions	Responsibility
				Jul–Sep 2017	Oct-Dec 2017	Jan- Mar 2018	Apr-Jun 2018				
Strategy 3.2			Incorporate AMR research priorities into the National (Health) Research Agenda								
AMR research agenda to the National Commission of Science and Technology (NCST) Submitted	To submit AMR research agenda to the National Commission of Science and Technology (NCST)	One meeting			Meeting	Incorporation done					

ANNEX 7: ANNUAL WORK PLAN (2017/18) CONT'D

INFECTION, PREVENTION AND CONTROL											
Strategic Objective 1			To prevent and control infection at national level								
Strategy 1			Establish systems and processes for IPC								
				Monthly Costs (MK) (2017/18)							
Output 1	Sub-Activity	Specific Quantities	Unit Costs	2017		2018		TOTAL Budget	Source of Funds	Risks and Assumptions	Responsibility
				Jul–Sep 2017	Oct-Dec 2017	Jan- Mar 2018	Apr-Jun 2018				
Systems and processes established	List down all activities under each output	Specify quantities									
	Conduct workshops to review existing IPC policies, guidelines, standards and SOPs	Four workshops		One review workshop	One review workshop	One review workshop	One review workshop				
	Print and disseminate the reviewed IPC policies, guideline, standards and SOP										
	Train all relevant stake holders on how to use the reviewed IPC policies, guidelines standards and SOPs										
Output 2											
National co-coordinating unit strengthened	Strengthen and expand the TORs for the national coordinating unit for IPC to include animal health Agriculture and environment	One TOR		One workshop to develop TORs							

ANNEX 7: ANNUAL WORK PLAN (2017/18) CONT'D

INFECTION, PREVENTION AND CONTROL											
Strategic Objective 1			To prevent and control infection at national level								
Strategy 1			Establish systems and processes for IPC								
				Monthly Costs (MK) (2017/18)							
	Sub-Activity	Specific Quantities	Unit Costs	2017		2018		TOTAL Budget	Source of Funds	Risks and Assumptions	Responsibility
				Jul–Sep 2017	Oct-Dec 2017	Jan- Mar 2018	Apr-Jun 2018				
	Conduct consultative workshops to strengthen national coordinating unit	Three workshops		One consultative workshop	Two consultative workshop s						
Output 3											
IPC assessments conducted	Conduct IPC assessment and Gap analysis in animal health Agriculture and environment	One assessment to identify gaps		One assessment to identify gaps							
Output 4											
Adherence to policies monitored	Monitor adherence to the national policies, guidelines, standards and SOPs										
Strategy 2			Develop appropriate Infrastructure for IPC implementation								
				Monthly Costs (MK) (2017/18)							
Output 1	Sub-Activity	Specific Quantities	Unit Costs	2017		2018		TOTAL Budget	Source of Funds	Risks and Assumptions	Responsibility
				Jul–Sep 2017	Oct-Dec 2017	Jan- Mar 2018	Apr-Jun 2018				
Incinerators constructed	Construction of incinerators for central hospitals (KCH and QECH)	Two incinerators constructed				Construct two incinerators					

ANNEX 7: ANNUAL WORK PLAN (2017/18) CONT'D

INFECTION, PREVENTION AND CONTROL											
Strategic Objective 1			To prevent and control infection at national level								
Strategy 2			Establish systems and processes for IPC								
				Monthly Costs (MK) (2017/18)							
Output 2	Sub-Activity	Specific Quantities	Unit Costs	2017		2018		TOTAL Budget	Source of Funds	Risks and Assumptions	Responsibility
				Jul–Sep 2017	Oct-Dec 2017	Jan- Mar 2018	Apr-Jun 2018				
Isolation rooms constructed / renovated	Two Isolation rooms constructed / renovated for KCH and QECH	Two isolation rooms constructed				Construct two Isolation rooms					
Output 3											
Hand washing facilities constructed / renovated	Hand washing facilities constructed / renovated	Fifty hand washing facilities constructed / renovated		Construct 25 hand washing facilities	Construct 25 hand washing facilities						
Output 4											
Quarantine facilities constructed	Quarantine facilities constructed	One Quarantine facility constructed in Lilongwe					Construct one quarantine facility				
Output 5											
IPC infrastructure inspected					Conduct one inspection of construction	Conduct one inspection of construction	Conduct one inspection of construction				
Strategy 3			Reintroduce health promotion week								
Output 1											
Health promotion week reintroduced	Conduct consultation meetings on re-introduction of Health Promotion week	Three consultation meetings		Conduct two consultative meetings	Conduct one consultative meetings						

ANNEX 7: ANNUAL WORK PLAN (2017/18) CONT'D

INFECTION, PREVENTION AND CONTROL											
Strategic Objective 1			To prevent and control infection at national level								
Strategy 3			Reintroduce health promotion week								
				Monthly Costs (MK) (2017/18)							
Output 1	Sub-Activity	Specific Quantities	Unit Costs	2017		2018		TOTAL Budget	Source of Funds	Risks and Assumptions	Responsibility
				Jul–Sep 2017	Oct-Dec 2017	Jan- Mar 2018	Apr-Jun 2018				
Health promotion week reintroduced	Conduct workshop to sensitize target groups	Three workshops			Conduct one consultative meeting	Conduct one consultative meeting	Conduct one consultative meeting				
	Conduct workshop to sensitize target groups	Three workshops			Conduct one sensitization workshop	Conduct one sensitization workshop	Conduct one sensitization workshop				
	Publish and air press releases on reintroduction of health promotion week	Four press releases				Publish four press releases					
	Observance of health promotion week	Observance of health promotion week									
Strategic Objective 2			To prevent and control infection at community level								
Strategy 1			Promote personal hygiene and sanitation through behaviour change activities in the communities								
Output 1											
Personal hygiene and sanitation promoted	Conduct assessments of gaps on personal hygiene and sanitation	One personal hygiene and sanitation assessment		One personal hygiene and sanitation assessment	One review workshop						
	Conduct refresher courses for village health committees	One refresher course training per district		Conduct 7 workshops in 7 districts	Conduct 21 workshops in 21 districts						

ANNEX 7: ANNUAL WORK PLAN (2017/18) CONT'D

INFECTION, PREVENTION AND CONTROL											
Strategic Objective 1			To prevent and control infection at community level								
				Monthly Costs (MK) (2017/18)							
Output 1	Sub-Activity	Specific Quantities	Unit Costs	2017		2018		TOTAL Budget	Source of Funds	Risks and Assumptions	Responsibility
				Jul–Sep 2017	Oct-Dec 2017	Jan- Mar 2018	Apr-Jun 2018				
Strategy 1			Promote personal hygiene and sanitation through behaviour change activities in the communities								
Personal hygiene and sanitation promoted	Conduct awareness campaigns on personal hygiene and sanitation in communities	One awareness campaign per district				Conduct 14 awareness campaigns in 14 districts	Conduct 14 awareness campaigns in 14 districts				
Output 2											
Behaviour change surveys conducted.	Conduct a survey on personal hygiene	No. of surveys on personal hygiene conducted									
Strategy 2			Develop appropriate Infrastructure for IPC implementation								
Output 1											
Awareness campaigns on proper disposal conducted	Conduct 28 awareness campaigns 1 in each district	One campaign per district				Conduct 14 awareness campaigns in 14 districts	Conduct 14 awareness campaigns in 14 districts				
Strategic Objective 2			To prevent and control Infection at health care and animal health setting								
				Monthly Costs (MK) (2017/18)							
Output 1	Sub-Activity	Specific Quantities	Unit Costs	2017		2018		TOTAL Budget	Source of Funds	Risks and Assumptions	Responsibility
				Jul–Sep 2017	Oct-Dec 2017	Jan- Mar 2018	Apr-Jun 2018				
Strategy 1			Strengthen hand hygiene in health care and animal waste								
Hand hygiene strengthened	Conduct an assessments on hand hygiene	One assessment conducted		Conduct an assessment on hand hygiene							

ANNEX 7: ANNUAL WORK PLAN (2017/18) CONT'D

INFECTION, PREVENTION AND CONTROL											
Strategic Objective 1			To prevent and control infection at community level								
				Monthly Costs (MK) (2017/18)							
Output 1	Sub-Activity	Specific Quantities	Unit Costs	2017		2018		TOTAL Budget	Source of Funds	Risks and Assumptions	Responsibility
				Jul–Sep 2017	Oct-Dec 2017	Jan- Mar 2018	Apr-Jun 2018				
Strategy 1			Strengthen hand hygiene in health care and animal waste								
Hand hygiene strengthened	Conduct TOT workshops in 6 zones	Six TOT workshops conducted on hand hygiene			Conduct four TOT workshops	Conduct two TOT workshops					
	Develop IEC materials on hand hygiene	1,000 posters, 1,000 fliers, 2,500 T-shirts, 4 bill boards					1,000 posters, 1,000 fliers, 2,500 T-shirts, 4 bill boards				
Output 2											
World hand hygiene day observed	Conduct hand hygiene campaigns in each district	Twenty eight hand hygiene campaigns conducted									
	Observance of hand hygiene day	One hand hygiene day observed					Hand hygiene observed				
Output 3											
Hand hygiene standards monitored	Conduct monitoring of hand hygiene standards	Four monitoring visits		One monitoring visit	One monitoring visit	One monitoring visit	One monitoring visit				

ANNEX 7: ANNUAL WORK PLAN (2017/18) CONT'D

INFECTION, PREVENTION AND CONTROL											
Strategic Objective 1			To prevent and control infection at community level								
				Monthly Costs (MK) (2017/18)							
Output 1	Sub-Activity	Specific Quantities	Unit Costs	2017		2018		TOTAL Budget	Source of Funds	Risks and Assumptions	Responsibility
				Jul–Sep 2017	Oct-Dec 2017	Jan- Mar 2018	Apr-Jun 2018				
Strategy 2			Ensure safety of health care and animal health workers								
Safety of health care and animal health workers ensured	Develop safety policies, standards and protocols	Three workshops to develop safety policies, standards and protocols		Conduct two workshops to develop policies standards and protocols		Conduct one workshop to develop policies standards and protocols					
	Procure PPE	10,000 heavy duty gloves			10,000 heavy duty gloves						
		15,000 heavy duty aprons			15,000 heavy duty aprons						
		15,000 gumboots			15,000 gumboots						
		15,000 head gear			15,000 head gear						
		15,000 masks			15,000 masks						
		15,000 uniforms			15,000 uniforms						
		5,000 virals			5,000 virals						
	Conduct medical checkups of workers	20,000 workers undergo medical check ups		5,000 workers undergo medical checkups	5,000 workers undergo medical checkups	5,000 workers undergo medical checkups	5,000 workers undergo medical checkups				
	Inspections conducted	Four inspections conducted		One inspection conducted	One inspection conducted	One inspection conducted	One inspection conducted				

ANNEX 7: ANNUAL WORK PLAN (2017/18) CONT'D

INFECTION, PREVENTION AND CONTROL											
Strategic Objective 1			To prevent and control infection at community level								
				Monthly Costs (MK) (2017/18)							
Output 1	Sub-Activity	Specific Quantities	Unit Costs	2017		2018		TOTAL Budget	Source of Funds	Risks and Assumptions	Responsibility
				Jul–Sep 2017	Oct-Dec 2017	Jan- Mar 2018	Apr-Jun 2018				
Strategy 3			Strengthen availability of IPC supplies in health care and animal health settings								
IPC supplies made available	Procure IPC supplies	2,000 kg chlorine, 500L iodine, 500L chlorhexidine, 1,000L methylated spirit, 1,000L hand rub			2,000 kg chlorine, 500L iodine, 500L chlorhexidine, 1,000L methylated spirit, 1,000L hand rub						
		2,000 cartons soap, 1,000 L liquid soap			2,000 cartons soap, 1,000L liquid soap						
		10,000 mops			10,000 mops						
		10,0000 buckets			10,0000 buckets						
		10,000 brushes			10,000 brushes						
Strategic Objective 2			To prevent and control Infection in Agriculture								
Strategy 1			Promote good agriculture practices								
Output 1											
Good agriculture practices promoted	Conduct trainings on good farming practices	Six trainings sessions				Two trainings sessions	Four trainings sessions				
	No. of collaborative sessions conducted	Six sessions					Six sessions				
Output 2											
A survey on existing practices conducted	Conduct surveys to document existing practices			One survey conducted							

ANNEX 7: ANNUAL WORK PLAN (2017/18) CONT'D

INFECTION, PREVENTION AND CONTROL											
Strategic Objective 2			To prevent and control Infection in Agriculture								
				Monthly Costs (MK) (2017/18)							
Output 1	Sub-Activity	Specific Quantities	Unit Costs	2017		2018		TOTAL Budget	Source of Funds	Risks and Assumptions	Responsibility
				Jul–Sep 2017	Oct-Dec 2017	Jan- Mar 2018	Apr-Jun 2018				
Strategy 2			Ensure workers safety during use of chemicals								
Workers safety ensured	Conduct workshops to develop safety policies, standards and protocols developed	Four workshops to develop safety policies, standards and protocols developed		Two workshops	Two workshops						
Routine Inspections conducted	Conduct medical checkups for workers	20,000 workers undergo medical check ups		500 workers undergo checkups	500 workers undergo checkups	500 workers undergo checkups	500 workers undergo checkups				
	Conduct routine inspections	No. of routine inspections		One inspection	One inspection	One inspection					
Strategic Objective 3			To reduce impacts of AMR on the environment								
Strategy 1			Promote safe management of waste from health care, animal health, industry and Agriculture								
Output 1											
Safe management of waste promoted	Develop / revise waste management plans in all sectors	Four waste management plans		Developing and revision of waste management plans							
	Procure waste receptacles	50,000 bins			☐ Procure 50,000 bins ☐ Conduct two TOT workshops						
	Procure bin liners	100,000 bin liners			Procure 100,000 bin liners						

ANNEX 7: ANNUAL WORK PLAN (2017/18) CONT'D

INFECTION, PREVENTION AND CONTROL											
Strategic Objective 3			To reduce impacts of AMR on the environment								
Strategy 1			Promote safe management of waste from health care, animal health, industry and Agriculture								
Output 1	Sub-Activity	Specific Quantities	Unit Costs	2017		2018		TOTAL Budget	Source of Funds	Risks and Assumptions	Responsibility
				Jul–Sep 2017	Oct-Dec 2017	Jan- Mar 2018	Apr-Jun 2018				
Safe management of waste promoted	Conduct lobbying meetings for proper waste management	Ten meetings		Ten lobby meetings							
	Conduct sensitization meetings for industries, hospitals, vet clinics and city councils on proper waste management	Three regional meetings		One regional meeting	Two regional meetings						
	Conduct training of workers on proper waste disposal	Six zonal training sessions		Two zonal training sessions		Two zonal training sessions	Two zonal training sessions				
	No. of inspection conducted	Four inspections conducted		One inspection	One inspection	One inspection	One inspection				
Strategy 2			Strengthen environmental monitoring								
Output 1											
Environmental monitoring strengthened	Procure environmental monitoring equipment	Various equipment procured			Procure environmental monitoring equipment						
	Develop automated water quality monitoring system	One water quality system		Develop automated water quality system	Conduct two TOT workshops						

ANNEX 7: ANNUAL WORK PLAN (2017/18) CONT'D

INFECTION, PREVENTION AND CONTROL											
Strategic Objective 3			To reduce impacts of AMR on the environment								
Strategy 2			Strengthen environmental monitoring								
Output 1	Sub-Activity	Specific Quantities	Unit Costs	2017		2018		TOTAL Budget	Source of Funds	Risks and Assumptions	Responsibility
				Jul–Sep 2017	Oct-Dec 2017	Jan- Mar 2018	Apr-Jun 2018				
Environmental monitoring strengthened	Procure Environmental monitoring PPE	Various PPE			Procure PPE for environmental monitoring						
	Conduct environmental monitoring visits	Four monitoring visits		One monitoring visit	One monitoring visit	One monitoring visit	One monitoring visit				

ANNEX 7: ANNUAL WORK PLAN (2017/18) CONT'D

OPTIMAL USE											
Strategic Objective 1			Ensure uninterrupted access to high-quality antimicrobial medicines								
Strategy 1			Strengthen national regulatory authorities for improved quality, safety and efficacy of antimicrobials								
Output 1	Sub-Activity	Specific Quantities	Unit Costs	2017		2018		TOTAL Budget	Source of Funds	Risks and Assumptions	Responsibility
				Jul–Sep 2017	Oct-Dec 2017	Jan- Mar 2018	Apr-Jun 2018				
National regulatory authority strengthened and regulations implemented	Conduct consultation meeting with stakeholders to evaluate the current regulations on quality, safety and efficacy of antimicrobials	One				One meeting				Coordination and funding availability	MoH

ANNEX 7: ANNUAL WORK PLAN (2017/18) CONT'D

OPTIMAL USE											
Strategic Objective 1			Ensure uninterrupted access to high-quality antimicrobial medicines								
Strategy 1			Strengthen national regulatory authorities for improved quality, safety and efficacy of antimicrobials								
Output 1	Sub-Activity	Specific Quantities	Unit Costs	2017		2018		TOTAL Budget	Source of Funds	Risks and Assumptions	Responsibility
				Jul–Sep 2017	Oct-Dec 2017	Jan- Mar 2018	Apr-Jun 2018				
National regulatory authority strengthened and regulations implemented	Conduct an inception meeting with the stakeholders / consultants on the updating and disseminating regulatory tools	One				One inception meeting				Coordination and funding availability	MoH
	Review meeting to update the current regulatory tools					One review meeting				Coordination and funding availability	MoH
Strategy 2			Strengthen legislation to regulate prescription and dispensing of antimicrobials								
Output 2											
Legislation and regulations strengthened and implemented to regulate prescription and dispensing	Conduct consultation meeting with regulatory bodies. MoH, MoAIWD on prescription and dispensing of antimicrobial medicines	One		One consultation meeting						Funds available	MoH
	Conduct a review meeting on legislation of prescription and dispensing of antimicrobial medicines	One		One review meeting						Funds available	MoH
	Documentation and printing of the reviewed prescription and dispensing legislation	19,500 copies				19,500 copies				Funds available	MoH

ANNEX 7: ANNUAL WORK PLAN (2017/18) CONT'D

OPTIMAL USE											
Strategic Objective 1			Ensure uninterrupted access to high-quality antimicrobial medicines								
Strategy 1.1			Develop and enforce an enabling regulatory framework and coordination for regulations on use of antimicrobials in human, animals and agriculture								
Output 1	Sub-Activity	Specific Quantities	Unit Costs	2017		2018		TOTAL Budget	Source of Funds	Risks and Assumptions	Responsibility
				Jul–Sep 2017	Oct-Dec 2017	Jan- Mar 2018	Apr-Jun 2018				
Updated and disseminated guidelines of antimicrobial use in human, animal and agriculture	Consultation meeting with MoH, MoIWD	Two		Two consultative meetings						Disseminating funds availability	MoH
	Review meeting of the current guide lines	One									
	Documentation, printing and dissemination of the updated guidelines	20,000 copies			14,000 copies	6,000 copies				Disseminating funds availability	MoH
	Dissemination of updated guidelines	Four (regional sessions)				Four (regional sessions)					
Output 2											
Regulatory mechanism established for assuring rational use of antibiotics in human, animal and agriculture	Conduct consultation meetings with regulatory bodies, MoH and MoAIWD	Two		Two consultative meetings						Stakeholder cooperation and funds availability	MoH / MoAIWD
	Conduct a review meeting on the on existing regulatory mechanisms	One			One review meeting					Stakeholder cooperation and funds availability	MoH / MoAIWD
	Documentation and printing of the integrated mechanisms	One			13,000 copies	6,500 copies				Stakeholder cooperation and funds availability	MoH / MoAIWD

ANNEX 7: ANNUAL WORK PLAN (2017/18) CONT'D

OPTIMAL USE											
Strategic Objective 1			Ensure uninterrupted access to high-quality antimicrobial medicines								
Strategy 1.2			Develop and enforce an enabling regulatory framework and coordination for regulations on use of antimicrobials in human, animals and agriculture								
Output 1	Sub-Activity	Specific Quantities	Unit Costs	2017		2018		TOTAL Budget	Source of Funds	Risks and Assumptions	Responsibility
				Jul–Sep 2017	Oct-Dec 2017	Jan- Mar 2018	Apr-Jun 2018				
Developed Integrated essential medicines list for use in human, animal and agriculture	Conduct consultation meeting with stakeholders on EML										
	Conduct a review meeting on existing EML in humans, animal (literature) and agriculture (literature)	One					One review meeting			Cooperation	MoH / MoAIWD
	Workshop for developing the integrated EML;	One					One workshop			Cooperation	MoH / MoAIWD
	Document and print the integrated EML	6,640					2210 copies			Cooperation	MoH / MoAIWD
	Carry out dissemination sessions of integrated EML	Two					☐ One review meeting ☐ 6640 copies			Cooperation	MoH/ MoAIWD
Output 2											
Developed policy document guiding the use of critically important antibiotics in animals and agriculture	Conduct consultation meetings with stakeholder of policy document to guide the use of critically important antibiotics in animals and agriculture	Two				Two consultative meeting s				Lack of funding and coordination	MoH / MoAIWD / NCC
	Conduct review meeting on existing policy documents on use of critically important antibiotics in humans, animals and agriculture	One					One review meeting			Lack of funding and coordination	MoH / MoAIWD / NCC

ANNEX 7: ANNUAL WORK PLAN (2017/18) CONT'D

OPTIMAL USE											
Strategic Objective 1			Ensure uninterrupted access to high-quality antimicrobial medicines								
Strategy 1.2			Develop and enforce an enabling regulatory framework and coordination for regulations on use of antimicrobials in human, animals and agriculture								
Output 3	Sub-Activity	Specific Quantities	Unit Costs	2017		2018		TOTAL Budget	Source of Funds	Risks and Assumptions	Responsibility
				Jul–Sep 2017	Oct-Dec 2017	Jan- Mar 2018	Apr-Jun 2018				
	Workshop on documentation of policy	One					One workshop			Lack of funding and coordination	MoH / MoAIWD / NCC
	Print policy document copies	6,640 copies					6,640 copies			Lack of funding and coordination	MoH / MoAIWD / NCC
Strategy 1.3			Promote good governance on antimicrobial use								
Adopted WHO model framework for Good Governance in the Pharmaceutical sector (Malawi Framework for Good Governance in the Pharmaceutical sector)	Three consultation meetings on Adopting WHO model framework for Good Governance in the Pharmaceutical sector						Three meetings				MoH / MoAIWD
	Workshop to adopt the document	One					One workshop				MoH / MoAIWD
Strategy 1.4			Strengthen supply chain systems								
Developed importation and sale guidelines for veterinary medicines	Consultation meeting on developing importation and sale guidelines for veterinary medicines between MoAIWD and regulatory bodies	Two		Two meetings						Funds available	MoAIWD / Regulatory bodies
	Workshop to develop the guidelines	One								Funds available	MoAIWD / Regulatory bodies

ANNEX 7: ANNUAL WORK PLAN (2017/18) CONT'D

OPTIMAL USE											
Strategic Objective 1			Ensure uninterrupted access to high-quality antimicrobial medicines								
Strategy 1.5			Develop and enforce an enabling regulatory framework and coordination for regulations on use of antimicrobials in human, animals and agriculture								
Output 1	Sub-Activity	Specific Quantities	Unit Costs	2017		2018		TOTAL Budget	Source of Funds	Risks and Assumptions	Responsibility
				Jul–Sep 2017	Oct-Dec 2017	Jan- Mar 2018	Apr-Jun 2018				
Developed monitoring systems for antimicrobial medicines supply chains	Consultation meetings on developed monitoring systems for antimicrobial medicines supply chains	Two					Two consultation meetings			Funds available	MoH / MoAIWD / Regulatory bodies
	Workshop to develop the monitoring tools	One									
Strategic Objective 2			Improve appropriate use of antimicrobials in health systems								
Strategy 2.1			Establish antimicrobial stewardship programmes in human and animal health systems								
Regular review of antimicrobial stewardship programmes done	Consultation meetings on developing structured and mandatory training materials / tools on optimal antimicrobial use	Two				One consultative meeting	One consultative meeting			Funds available	MoH / MoAIWD / Regulatory bodies
	Workshop to develop the monitoring tools	One								Funds available	MoH / MoAIWD / Regulatory bodies

INVESTMENT AND SUSTAINABILITY											
Strategic Objective 1			To develop the economic case for investment that addresses the country's AMR needs								
Strategy 1			Develop an all-inclusive plan used for securing and lobbying funding for AMR implementation								
Output 1	Sub-Activity	Specific Quantities	Unit Costs	2017		2018		TOTAL Budget	Source of Funds	Risks and Assumptions	Responsibility
				Jul–Sep 2017	Oct-Dec 2017	Jan- Mar 2018	Apr-Jun 2018				
Economic impact needs assessment conducted on AMR	Form a task force	One		☐ One task force ☐ One planning meeting							

ANNEX 7: ANNUAL WORK PLAN (2017/18) CONT'D

INVESTMENT AND SUSTAINABILITY											
Strategic Objective 1			To develop the economic case for investment that addresses the country's AMR needs								
Strategy 1 .1			Develop an all-inclusive plan used for securing and lobbying funding for AMR implementation								
Output 1	Sub-Activity	Specific Quantities	Unit Costs	2017		2018		TOTAL Budget	Source of Funds	Risks and Assumptions	Responsibility
				Jul–Sep 2017	Oct-Dec 2017	Jan- Mar 2018	Apr-Jun 2018				
Economic impact needs assessment conducted on AMR	Hire a consultant to conduct assessment	One			One meeting to develop ToR						
Output 2											
Economic gaps identified to inform priorities for investment in AMR implementation	Hire consultant to conduct assessment	One			One meeting to review						
Output 3											
Funding investment plan developed	Conduct meeting to develop a funding investment plan	Six		Three meetings	Three meetings						
Output 4											
Donors and key implementing partners Mapped out	Conduct meeting to map out key stakeholders	Six		Three meetings	Three meetings						
	Conduct review meeting	Three			Three review meetings	Three review meetings	Three review meetings				
Output 5											
Increased funding within government ministries	Conduct stakeholder meetings to lobby for funding with government ministries	Twenty		Ten meeting s	Ten meeting s						

ANNEX 7: ANNUAL WORK PLAN (2017/18) CONT'D

INVESTMENT AND SUSTAINABILITY											
Strategic Objective 1			To develop the economic case for investment that addresses the country's AMR needs								
Strategy 1 .1			Develop an all-inclusive plan used for securing and lobbying funding for AMR implementation								
Output 6	Sub-Activity	Specific Quantities	Unit Costs	2017		2018		TOTAL Budget	Source of Funds	Risks and Assumptions	Responsibility
				Jul–Sep 2017	Oct-Dec 2017	Jan- Mar 2018	Apr-Jun 2018				
Monitoring and evaluation plan developed	Conduct meeting to develop M&E plan	One		One meeting							
	Develop M&E data tools	One		One workshop							
	Pre-test the tools	One		One pre testing survey							
	Pilot the tool in three districts	One		One pilot survey							
	Conduct a meeting to review the tool	One		One review meeting							
Output 7											
Adaptation mechanism of AMR activities developed	Conduct dissemination meetings for M&E adaptation			One meeting							
	Conduct training of M&E officers on the M&E tool			One training							
Strategic Objective 2			To develop an effective mechanism for a sustainable AMR implementation								
Strategy 2.1			Develop an all-inclusive effective plan for sustainable AMR implementation								
Output 1											
Investment need for a sustainable AMR National Action Plan established	Hire consultant to conduct assessment	One									
	Conduct dissemination meetings	Six		Four dissemination meetings	Two dissemination meetings						

ANNEX 7: ANNUAL WORK PLAN (2017/18) CONT'D

INVESTMENT AND SUSTAINABILITY											
Strategic Objective 2			To develop the economic case for investment that addresses the country's AMR needs								
Strategy 2 .1			Develop an all-inclusive plan used for securing and lobbying funding for AMR implementation								
Output 2	Sub-Activity	Specific Quantities	Unit Costs	2017		2018		TOTAL Budget	Source of Funds	Risks and Assumptions	Responsibility
				Jul–Sep 2017	Oct-Dec 2017	Jan- Mar 2018	Apr-Jun 2018				
Policy makers and other stake holders engaged in implementation of AMR activities	Conduct meeting to develop ToRs	One		One meeting							
Output 3											
Partnership Strengthened both at National, regional and international level for AMR implementation	Develop MOU	One		One meeting							
	Conduct partnership meetings	Ten		Four meetings	Six meetings						
	Hold AMR conference at national level	One				One conference					
	Participate in international conferences	Six			Two conferences	Two conferences	Two conferences				
Strategy 2 .2			Strengthen organization capacity for a sustainable AMR implementation								
Output 1											
Infrastructure constructed	Perform a baseline assessment for infrastructure needs	One		One assessment							
	Hire contractor based on infrastructure needs			One hire							
	Procure vehicles	Four		Four vehicles							
	Procure computers	Eight		Eight computers							
	Procure laptops	Eight		Eight laptops							

ANNEX 7: ANNUAL WORK PLAN (2017/18) CONT'D

INVESTMENT AND SUSTAINABILITY											
Strategic Objective 2			To develop the economic case for investment that addresses the country's AMR needs								
Strategy 2 .2			Develop an all-inclusive plan used for securing and lobbying funding for AMR implementation								
Output 2	Sub-Activity	Specific Quantities	Unit Costs	2017		2018		TOTAL Budget	Source of Funds	Risks and Assumptions	Responsibility
				Jul–Sep 2017	Oct-Dec 2017	Jan- Mar 2018	Apr-Jun 2018				
Equipment improved for AMR implementation	Procure laboratory equipment			Laboratory equipment							
	Procure Office Furniture and supplies			Office furniture and supplies							
Strategy 2 .3			Monitoring and Evaluation								
Output 1											
Data capturing tools developed for AMR implementation	Develop data capturing tools and reporting mechanism for AMR implementation	Three		Three tools							
	Pre- testing the tool	One		One pre-testing survey							
	Train M&E officers at all levels	One		One training workshop							
	Adopt M&E tool for AMR implementation	One		One workshop							
	Periodic evaluation of the tool	Four		One evaluation	One evaluation	One evaluation	One evaluation				
	Adaptation of M&E tool for AMR implementation	One				One workshop					
Strategic Objective 3			Identify operational research priorities for participation in international collaborative research to support the development of new medicines, diagnostic tools and vaccines								
Strategy 3.1			Establish procedures for participation in international collaborative research to support the development of new medicine, diagnostic tool and vaccines								
Output 1											
Research priorities for AMR innovation defined	Conduct a research priority setting workshop on AMR innovation	One			One workshop						

ANNEX 7: ANNUAL WORK PLAN (2017/18) CONT'D

INVESTMENT AND SUSTAINABILITY											
Strategic Objective 3			Identify operational research priorities for participation in international collaborative research to support the development of new medicines, diagnostic tools and vaccines								
Strategy 3.1			Establish procedures for participation in international collaborative research to support the development of new medicine, diagnostic tool and vaccines								
Output 2	Sub-Activity	Specific Quantities	Unit Costs	2017		2018		TOTAL Budget	Source of Funds	Risks and Assumptions	Responsibility
				Jul–Sep 2017	Oct-Dec 2017	Jan- Mar 2018	Apr-Jun 2018				
Need for new medicines, diagnostic tools and vaccines analyzed	Conduct a workshop to analyze the need for new medicines, diagnostic tools and vaccines	One			One workshop						
Output 3											
Plan to promote research for innovation to address AMR developed	Hold meetings to promote research for innovation	Two				Two workshops					
	Plan a study tour in a country where this innovation is underway	One					One study tour				
Strategic Objective 4			Identify operational research priorities for participation in international collaborative research to support the development of new medicines, diagnostic tools and vaccines								
Strategy 4.1			Strengthen and streamline international collaboration on AMR								
Output 1											
Existing collaboration on AMR reviewed	Develop MOU	One		One MOU							
	Review and sign MOU										
Output 2											
Collaboration at national, regional and international level	Conduct a collaboration meeting	Four		One meeting	One meeting	One meeting	One meeting				
Strategy 4.2			Strengthen inter-sectoral coordination of AMR activities								
Output 1											
Cross-cutting inter-sectoral coordination mechanism on AMR established	Conduct a cross cutting meeting	One				One meeting					

ANNEX 7: AMR STRATEGY CORE INDICATORS

Sub Objective	Domain	Indicator	Baseline (source, year)	Target 2017	Target 2019	Target 2022	Periodicity of reporting
To increase national awareness and understanding on AMR							
Establishment of an evidence-based awareness programme		AMR awareness and advocacy materials developed	No	40%	100%		
		Number of targeted activities on AMR awareness conducted	0	100%	100%		
		A behavior change study conducted	0	20%	100%		
		Digital platform for AMR launched	0	50%	100%		
To determine the socio behavioral drivers and determinants for AMR	Health status	Rapid qualitative and quantitative assessment conducted	To be determined	50%	50%	100%	
Establish an Advocacy, Communication and Social Mobilization (ACSM) Working group.	Health status	ACSM TWG established	No	Yes			
		Percentage of ACSM related issues effectively addressed by the TWG	0	50%	50%	100%	
Develop a mechanism and digital platform that links social behavioural practices to the GLASS AMR surveillance network.	Health status	Percentage of district using digital platforms	0	50%	100%	100%	
Improve knowledge and evidence of AMR through research and surveillance							
Strengthen the national AMR surveillance system	Health status	AMR incorporated into the national surveillance system	No	50%	100%		
	Coverage of interventions	Percentage of district implementing laboratory based surveillance for AMR	0	30%	60%	100%	

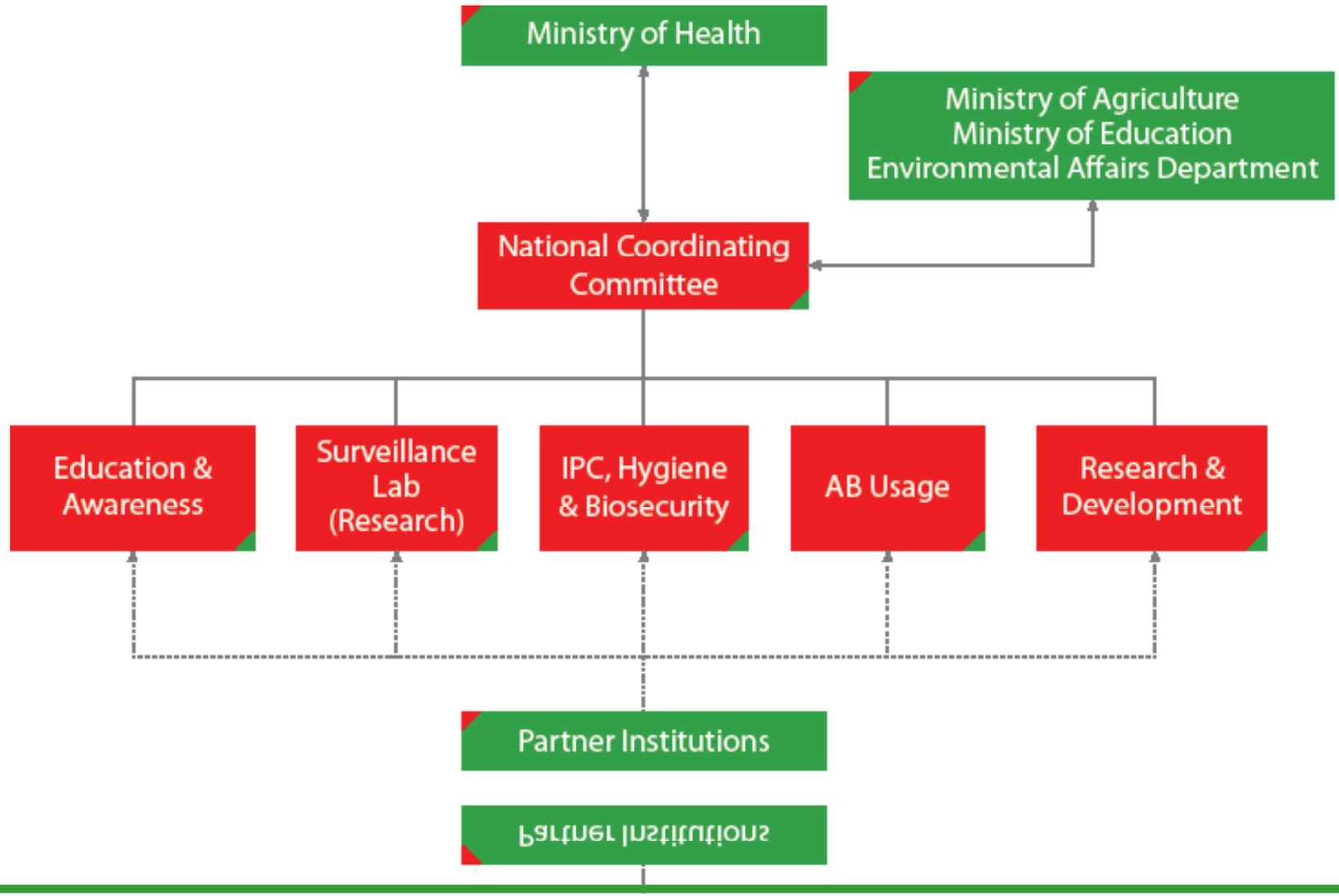
ANNEX 7: AMR STRATEGY CORE INDICATORS CONT'D

Sub Objective	Domain	Indicator	Baseline (source, year)	Target 2017	Target 2019	Target 2022	Periodicity of reporting
Strengthen the national epidemiological surveillance system on AMR in Human Health, Animal Health, Agriculture and Environment	Coverage of interventions	Percentage of districts with epidemiological surveillance system established	0	50%	50%	100%	
		Platform for regular sharing of AMR data across human, animal health, agriculture and environmental sectors established	0	100%	100%	100%	
To develop and incorporate AMR research priorities into the National (Health) Research Agenda	Quality and safety	A consolidated chapter of AMR research priorities incorporated in the National Health Research Agenda	0			100%	
Enhance infection control and prevention							
To prevent and control spread of resistant microorganisms	Quality and safety	Percentage of districts effectively implementing IPC	To be determined	25%	50%	100%	
		Percentage of communities that promote personal hygiene and sanitation	To be determined		50%	100%	
	Access	Percentage of Health personnel that have access to all the necessary PPE and Hand hygiene supplies to practice IPC	To be determined	25%	50%	100%	
Optimal use of antimicrobials medicines in human and animal health and agriculture							
Ensure uninterrupted access to high-quality antimicrobial medicines	Access	Percentage of availability of antimicrobials according to EML in all health establishments	To be determined		100%	100%	

ANNEX 7: AMR STRATEGY CORE INDICATORS CONT'D

Sub Objective	Domain	Indicator	Baseline (source, year)	Target 2017	Target 2019	Target 2022	Periodicity of reporting
Institutionalize antimicrobial stewardship	Access	Percentage of institutions adhering to the AMR policy	To be determined		50%	100%	
Address the use of antimicrobials in animal health	Health security	Policy to promote good governance on antimicrobial use developed	0	30%	70%	100%	
Ensure sustainable investment through research and development.							
Develop the economic case for investment that address the country's AMR needs	Health security	Percentage of financial allocation towards AMR	To be determined		50%	100%	
Strengthen and streamline international collaboration on AMR	Health Security	MOU with international stakeholders signed	To be determined	0	50%	Completed	

Governance Structure



GOVERNMENT OF THE REPUBLIC OF MALAWI