

# Terms of Reference for Request for Proposals

## First Fleming Fund Country Grant to Burkina Faso

### 1 Overview of this grant

This is a Request for Proposals (RFP) for the first Country Grant to address gaps in surveillance of antimicrobial-resistant bacteria in Burkina Faso. It has been created in response to a Request for Support from the Minister of Health, on behalf of the Government of Burkina Faso. The grant will be funded by the UK Department of Health and Social Care (DHSC), under its Fleming Fund Grants Programme, which is managed by Mott MacDonald, the Management Agent.

This first Fleming Fund Country Grant for Burkina Faso will focus on putting in place the foundations for antimicrobial resistance (AMR) and antimicrobial use (AMU) surveillance in the human and animal health sectors, as well as some aspects of AMR surveillance in the environment. It will facilitate a stronger One Health (OH) approach to surveillance, bringing together multi-sectoral stakeholders to share surveillance data and gain a better understanding of AMR and AMU.

This grant will align with the National Action Plan (NAP) for antimicrobial resistance and with the investments made by other donors and stakeholders in this area. In both the human and animal health sectors, the grant will invest in the improvement of AMR and AMU data collection, management, analysis and use in multi-sectoral decision making, as well as in the reinforcement of both reference and surveillance site laboratories. In addition, the grant will further develop and support the coordination with ministries as well as between technical institutions involved in AMR/AMU surveillance.

The grantee will be responsible to Mott MacDonald for all aspects of the grant, including the management of any partners, their performance, technical delivery and financial accountability. The grantee will be expected to sign the Grant Agreement and will be expected to enter into sub-granting arrangements with partners, if any, on the same back-to-back terms.

The grantee will need to work in close coordination with the AMR Coordinating Committee (AMRCC), as well as Mott MacDonald and other national stakeholders. The grantee will also be required to harmonize efforts on this Country Grant with other types of grants under the Fleming Fund Grants Programme, namely Regional Grants and the Fleming Fellowship Scheme.

This grant is expected to last 21 months ending no later than September 2021. Grant applications should be in the region of £2-3 million, including all capital and recurrent costs, overheads and management costs.

### 2 Overview of the Fleming Fund

#### 2.1 Introduction

The UK Government has established the Fleming Fund to respond to the global threat of drug-resistant infections due to bacterial Antimicrobial Resistance (AMR). The Fleming Fund will be a critical tool in achieving the resolution of the 68th World Health Assembly, 2015 (WHA A68/20), and in realising the 'Political Declaration of the High-Level Meeting of the United Nations General Assembly (UNGA) on Antimicrobial Resistance, 2016'. These recognise that urgent cross-sectoral rationalisation of antimicrobial use, and prevention and control of infections in humans, animals, food, agriculture, and aquaculture sectors, are key to tackling AMR and call for: innovative research and development; affordable and accessible antimicrobial medicines and vaccines; improved surveillance and monitoring; increased governance on antimicrobial use; and increased international cooperation to control and prevent AMR.

The Fleming Fund aims to address critical gaps in surveillance of antimicrobial-resistant bacteria in low- and middle-income countries (LMICs) in Asia and Sub-Saharan Africa. Countries in these areas are set to bear the

highest burden of drug resistant infections. A Global Action Plan on Antimicrobial Resistance (GAP-AMR) has been developed by the World Health Organization (WHO), which acts as the blueprint for a multi-stakeholder global response to averting a global health crisis caused by AMR.<sup>1</sup> The Fleming Fund comprises a number of workstreams (see [www.flemingfund.org](http://www.flemingfund.org) for more information). One workstream provides support to the Tripartite Alliance – the Food and Agriculture Organization (FAO), the World Organisation for Animal Health (OIE) and the World Health Organization (WHO) – as part of the OH approach. Through funding to the Tripartite Alliance, the Fleming Fund has contributed to the development of National Action Plans (NAPs) in Sub-Saharan Africa, South and South East Asia, and to the building of the evidence base and guidance for AMR surveillance. This work will be critical for the overall success of the Fleming Fund Grant Programme and underpins the delivery of the portfolio of Country and Regional Grants and the Fleming Fellowship Scheme, as these will target capacity gaps identified in NAPs. The Fleming Fund also funds initiatives in academic institutions to develop guidance on the development of AMR surveillance systems.

The Fleming Fund Grants Programme is the largest stream of financial support available through the wider Fleming Fund. The DHSC has appointed Mott MacDonald as the Fleming Fund Management Agent for the Fleming Fund Grants Programme. Mott MacDonald is a global company with expertise in multi-sectoral international development and fund management. On behalf of the UK Government, Mott MacDonald is responsible for funding allocation and oversight of all investments made across the whole portfolio of grants in different activities and in different countries.

The aim of the Fleming Fund Grants Programme is to improve the ability of recipient countries to diagnose drug-resistant infections, with an emphasis on bacterial infections, and to improve data and surveillance to inform policy and practice at national and international levels. The overall goal is to avert the human and economic burden of AMR.

The geographic focus of the Fleming Fund Grants Programme is 20-24 LMICs from Sub-Saharan Africa, and South and South East Asia. It can provide financial support up to 2021 to participating countries via three funding channels:

- Country Grants
- Fleming Fellowship Scheme Grants
- Regional Grants

The Fleming Fund will be independently evaluated by Itad, a specialist evaluation firm appointed by DHSC for this purpose.

## 2.2 Problem statement to be addressed by the Fleming Fund

The main issues to be addressed by Fleming Fund Country Grants are outlined below:

- There are too few trained microbiologists to undertake the volume of testing required for representative surveillance on AMR.
- There are few health facilities that routinely undertake bacterial culture; still fewer facilities that meet the requirements for accreditation, or which do routine antimicrobial susceptibility testing.
- There is no culture of surveillance for AMR in healthcare delivery and there are barriers to developing it.
- There is little perceived use of surveillance data on any level, including low demand for the data from policy makers.
- There is a lack of knowledge on the use and consumption of antimicrobial agents across One Health sectors.

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<sup>1</sup> <http://www.who.int/antimicrobial-resistance/global-action-plan/en/>

- There is a lack of antimicrobial stewardship.
- Logistical challenges are significant: transporting samples in a safe and secure manner under challenging transport conditions; ensuring a quality assured and sustained supply chain for reagents and consumables; and ensuring appropriate servicing of equipment are a few examples.
- Surveillance systems (national, regional and global) that do exist are often vertical in nature, are not linked, and are not integrated.
- There are weak One Health structures and there is poor inter-sectoral collaboration.
- There is a heterogeneous picture across countries and regions in terms of starting points, political will, capability, and donor interest and engagement.
- There are poorly defined and applied quality assurance standards in laboratory testing.
- There is lack of understanding on transmission patterns and drivers such as inappropriate use of antimicrobial drugs across all sectors.

### 2.3 Fleming Fund investment areas and outputs

To address the problems above, the Fleming Fund Grants Programme invests in:

- Laboratory infrastructure enhancement.
- Human resource strengthening and workforce reforms.
- Surveillance systems strengthening.
- Building foundations for AMR surveillance data use.
- Promoting rational use of antimicrobial medicines.

Investment in these areas is expected to achieve the following outputs:

- Improved laboratory skills and conditions for bacterial identification and Antimicrobial Susceptibility Testing (AST); and, therefore, improved data quality.
- A Strengthened One Health workforce with a range of relevant skills for AMR surveillance.
- Stronger AMR surveillance systems and processes at country and regional levels.
- Higher demand for AMR data at regional, country, subnational and facility levels.
- Better knowledge of country level patterns of prescribing practice and use of antimicrobials (particularly for bacterial infection) across sectors.

Fleming Fund outputs are expected to contribute to the following country outputs:

- Increase in quality and quantity of AMR and AMU data collected.
- AMR and AMU data shared in country to support evidence-based policy and practice
- AMR and AMU data shared internationally to improve and inform the global response, in particular via the WHO Global Antimicrobial Resistance Surveillance System (GLASS) for human health AMR data.

The RFPs for Country Grants have been designed to ensure that investments and activities contribute directly to outputs. Grantees are expected to adhere to and demonstrate this alignment and contribution to outputs in their applications.

## 2.4 Core principles within the Fleming Fund Grants Programme

The Fleming Fund is built on four core principles. Grantees are expected to demonstrate how they will align with these principles while implementing the grant.

- 1) **Country Ownership:** The Fleming Fund Grants Programme will be implemented in line with national plans and aspirations, as laid out in the National Action Plan. Unless there are good reasons not to do so, Fleming Fund grants will chiefly invest in public sector laboratories and surveillance systems, thereby supporting national public health systems.
- 2) **One Health:** The Fleming Fund recognises that the problem of AMR is a great danger to human health and cannot be controlled without a One Health approach. A specific set of One Health investment parameters has also been developed and is summarised below. This approach is aligned with key documents and guidelines from OIE<sup>2</sup> and FAO<sup>3</sup> as well as the Global Action Plan.
  - a. **Collaborative multi-sectoral governance of AMR:** Leadership and resourcing of AMR surveillance and mitigation measures in all sectors that contribute to the emergence of AMR.
  - b. **Integrated AMR and antimicrobial use and consumption surveillance in all sectors:** Surveillance in humans, livestock, aquaculture, crops, food and the environment to produce information that is interpreted by multi-sectoral teams to help understand factors associated with AMR emergence within and between sectors.
  - c. **AMR mitigation policies and programmes prioritised across multiple sectors:** Evidence-based policies and programmes for AMR mitigation measures that are prioritised across the relevant sectors, based on information generated through AMR and AMU/C surveillance in all sectors.
- 3) **Alignment of Approach:** The Fleming Fund Grants Programme will seek to invest in areas which complement and build on work done to date, rather than create new systems. Grant applicants will need to demonstrate that they understand other actors' work in the field of improved laboratory capacity (both within and outside the sphere of AMR surveillance), improved disease surveillance, and the One Health approach. The Fleming Fund Grants Programme will assess grants for duplication of efforts and/or the development of parallel systems. To the extent possible, prospective Grantees will need to demonstrate how their proposals add value to existing and planned investments and systems.
- 4) **Sustainability:** The Fleming Fund Grants Programme will focus assistance on national systems with a view to long-term sustainability. Investment size and scope should, as far as possible, be aligned with national government spending so that systems created with Fleming Fund grants are sustainable within the public health system. We also recognise that the public good of conducting AMR surveillance means medium- to long-term support, and it is expected that countries that demonstrate good performance will have access to additional funds to provide ongoing support.

## 2.5 Fleming Fellowship Scheme

The Fleming Fellowship Scheme is part of the broader Fleming Fund Grants Programme and is managed by Mott MacDonald. Fellowships provide funding to support on-the-job training over an 18- to 24-month programme of structured learning, mentoring and skills development for four to eight Fellows in each investment country. The Fellowships do not duplicate basic training, rather they focus on building advanced skills and leadership to promote the application of best practice in identified 'Beneficiary Institutions', while promoting the One Health principle. Beneficiary Institutions are organisations such as AMR reference

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<sup>2</sup> OIE Standards, Guideline and Resolution on Antimicrobial resistance and the use of antimicrobial agents;

<sup>3</sup> The FAO Action Plan on Antimicrobial Resistance, 2016-2020.

laboratories national epidemiology units in the human and animal health sectors, hospitals and/or national drug administration agencies that add strategic value and complementarity to achieve the Fleming Fund's aims in the country. They are also institutions most likely to derive sustainable benefit from the Fellowship activities.

The initial focus of the Professional Fellowship Scheme is on strengthening the quality of laboratory diagnostic data and the analysis and use of AMR and AMU surveillance data in Beneficiary Institutions. Fellows in each country are supported by mentors who provide the expertise required to support the needs of the Fellows as well as to help them to improve the sustainability of AMR programmes in their institution. The data they generate will be applied to deliver evidence-based approaches to tackling AMR, for example to improve antimicrobial stewardship.

Priority areas to be supported through the Fellowship Scheme are discussed by a Mott MacDonald scoping team together with the national AMR committee in each country and reviewed with the Beneficiary Institutions to which they are assigned. A template is provided for each Fellowship terms of reference which is adapted to the Beneficiary Institutional needs. One, or at most two, expert 'Host Institutions' are matched with all the Fellowships in a specific country. The Host Institution is drawn from a preselected pool, and after attending an initial workshop with the Fellows and Beneficiary Institution, the Host Institution develops a budgeted work plan. Once workplans and budgets have been agreed by Mott MacDonald, Fellows are formally accepted, and their Fellowship activities expensed through the Host Institution.

## 2.6 Fleming Fund activities in Burkina Faso to date

This is the first Fleming Fund Country Grant to be released in Burkina Faso. In preparation for this grant, Mott MacDonald carried out a Scoping Visit in January 2019, which was followed by Positioning Activities in March 2019 to review existing surveillance system capacity, conduct 6 laboratory assessments, and to better understand the priority areas to be supported through this first Country Grant. These activities culminated in the identification of major gaps and needs for strengthening AMR and AMU surveillance in humans, animals and the environment in Burkina Faso, and informed agreement with the AMRCC about grant objectives and outputs.

## 3 Current situation of AMR in Burkina Faso

### 3.1 National Action Plan for AMR

A National Multisectoral AMR Surveillance and Control Action Plan (2017-2021) was prepared by the former General Directorate of Pharmacy, Medicine and Laboratories (DGPML) which was split in 2018 into a National Agency for Pharmaceutical Regulation (ANRP) and in the General Direction of Access to Health Products (DGAPS), with technical and financial support from WHO, FAO and JHPIEGO. Its implementation will be coordinated by the AMR Coordination Committee (AMRCC), composed of representatives from the four ministries involved in AMR and supported by 6 technical subcommittees (Laboratories and surveillance, AMC and AMU, Vigilance and AM quality, Policies and Regulation, Communication and sensitization, IPC and patient safety). This national AMR action plan was written in 2017. However, to date the AMR action plan has not yet been officially approved or implemented.

The overall objective of the NAP for AMR is to provide an effective response, through an integrated approach (One Health), to the growing threat of antimicrobial resistance in Burkina Faso. The NAP follows the priorities outlined by the WHO Global Action Plan. It includes five specific objectives and 11 subobjectives, as follows:

1. Strengthen surveillance and research on AMR and AMU,
  - Set up a national surveillance system on AMR/AMU
  - Strengthen laboratory capacities in order to produce quality data for patient care and surveillance, in the domains of human and animal health, and environment

- Implement priority operational research for a better use of AM agents and better IPC practices in human and animal health
- 2. Reduce incidence of infections through better IPC programmes,
  - Prevent healthcare associated infections
  - Promote vaccination for humans and animals
  - Promote hospital and community hygiene
- 3. Improve proper and safe antibiotic use in humans, animals and agriculture,
  - Promote rational use of AM in humans, animals and agriculture
  - Improve access to expertise and assistance for health providers
  - Ensure adequate supply of quality medicines to meet the needs of people
- 4. Strengthen regulatory frameworks for AMR prevention,
  - Set up a regulatory framework
- 5. Improve awareness to AMR through communication, education and training,
  - Strengthen engagement of actors on AM rational use and the fight against AMR
  - Improve knowledge, attitudes and practice of healthcare providers and environment actors on AMR/AMU

In terms of AMR/AMU surveillance, the NAP foresees the development of a joint system for HH and AH. The planned system consists in a unique and integrated network of laboratories including two National Reference Labs (one in HH and one in AH) and fourteen sentinel labs. In this network, the only veterinary lab is the LNE (which is the NRL for AH); all other labs are HH labs. The planned data collection system also integrates HH and AH: data on AMR in HH will be collected by the DLBM of the MoH and then transferred to the DSIS of the MoH; data on AMR in AH will be collected by the LNE and transferred to the DSV of the MARH.

The activities within the NAP are costed and a budget is provided, but there is limited confirmation of availability of funding for these activities.

### 3.2 One Health

Burkina Faso is in the process of establishing a National One Health Platform (OHP) for Zoonotic Diseases, under the Prime Minister office, with funding support coming from USAID. The OHP includes representatives from ministries, donors and international agencies. It aims at supporting information sharing through formal meetings.

The OHP is supported by the USAID-funded EPT2 programme. FAO and WHO collaborate to strengthen a OH approach to zoonotic disease control and to addressing Global Health Security agenda, including AMR.

In relation to AMR, however, there is not yet a functional framework for collaboration between the human and animal health sectors. The OHP and the AMRCC do not communicate formally. Burkina Faso has recently established a National Commission on AMR (AMRNC), under the Prime Minister office. A more structured and coordinated OH approach to AMR and AMU surveillance is therefore necessary and should be developed and supported.

### 3.3 AMR Surveillance and Laboratory Capacity in Human Health

In Burkina Faso, the Ministry of Health Laboratories Directorate (DLBM) manages the AMR surveillance system for human health (HH). This system, which is currently being set up, relies on a network of 15 laboratories including 14 sentinel laboratories (public and private) distributed nationally, including the National Veterinary Reference Laboratory (LNE/Laboratoire National d'Élevage) and one NRL in charge of capacity strengthening and appropriate identification when needed. The network was initially built on laboratories with AMR detection capacities, but only few of them are currently providing AMR data due to lack of reagents, culture media and antibiotics discs, The Microbiology Lab at the University Hospital Sourou Sanou in Bobo Dioulasso has been identified as the National Reference Laboratory (NRL) for AMR surveillance.

AMR monitoring is in an early stage, with laboratories currently transmitting incomplete data to the DLBM. The collection of AMR data is being reported in the WHONET information system, with the support of WHO. The LABBOOK information system has been installed in some laboratories by Foundation Mérieux, who intends to provide soon an updated version. The AMR monitoring data collected by the DLBM is not uploaded into GLASS yet.

In the visited laboratories, Antimicrobial Susceptibility Testing (AST) is carried out regularly but there is a need to improve laboratory practices for culture media preparation, quality control, reagent storage, samples and isolates transport.

Guidelines have been written for standardisation of bacterial detection and AST (Guide national de surveillance au laboratoire de la résistance aux antimicrobiens, Manuel de procédures de réalisation de l'antibiogramme au Burkina Faso, Guide de bonnes pratiques de stockage des réactifs et consommables de laboratoire d'analyse de biologie médicale) but are awaiting diffusion.

Laboratories - including the 14 sentinel laboratories - have very unequal capacities in terms of infrastructure, equipment, human resources, quality assurance and biosafety. Most laboratories do not have maintenance and waste management capacities.

There is also a need to strengthen the biosafety and biosecurity capacity in all laboratories. Of the sites visited, there were no laboratories with biosecurity documents (manuals, standard operating procedures or protocols). At the national level, a biosecurity guideline for laboratories is available, but still under validation (Guide national de sécurité dans les laboratoires de biologie médicale). The capacity of the network must be supported to conserve biological strains to be used for the surveillance of AMR. Some laboratories have low-temperature freezers (-70 °C, -80 °C) for preserving bacterial strains, but frequent power cuts and lack of maintenance cause temperature fluctuations and equipment malfunction, and more reliable storage methods should be utilized. Support is needed for a centralized biorepository at the NRL to ensure safe storage of important strains, along with protocols for selection, transport and use of isolates.

It should be noted that health information and surveillance systems (including AMR) are fragmented in Burkina Faso. Each National Programme has its own system and these multiple systems are not integrated into the health information system placed under the responsibility of the Directorate General of Studies and Sectoral Statistics (DGESS). The DSIS (Directorate of Health Information and Surveillance Systems) has recently opened a data center, with the objective of centralizing and integrating all MoH information systems.

### 3.4 AMR Surveillance and Laboratory Capacity in Animal Health

At present, there is no surveillance strategy and very little if any activities in the area of AMR and AMU in animals. The animal health (AH) surveillance system (RESUREP) reports animal diseases in general on a routine basis, based on passive surveillance in 104 veterinary observation posts. However, due to low capacity of field AH professionals for sampling and sample handling, and lack of material and financial support for sample transport, few samples reach the National Reference Laboratory (LNE) for lab testing and AST resulting in few AMR data at national level. Additionally, AH/Animal production/lab technicians trained at the National school for Animal Health and Production (ENESA) and the 20 private schools receive a mostly theoretical training which does not prepare students for proper field diagnosis and sampling. There is no specific training module on AMU and AMR.

The LNE works under the General Directorate for Veterinary Services (DGSV), within the Ministry of Animal Resources and Fisheries (MARH). It has a bacteriology unit and has been designated as National veterinary reference laboratory for AMR. It performs bacteriology and some AST mainly for poultry but does not have the capacity and the material to carry out further testing. Infrastructure, equipment, internal organization and testing protocols of the bacteriology unit are not adequate. The LNE does not test manure or another farm material. The laboratory does not store isolates and does not have the equipment to do so. The six regional laboratories have not been visited but have been reported to have only basic equipment for microbiology and sampling. The LNE often runs out of reagents and consumables and national procurement

procedures are slow and complicated, resulting frequently in procurement delays and delivery of inadequate material.

A database for storage, analysis and sharing of animal disease data and AMR is not available yet and awaiting the decision on the choice of a unique database system for animal health.

FAO is providing some support to the laboratory in form of QA training and procurement of material. A USAID funded project (IDDS – Infectious disease detection and surveillance), with focus on increasing laboratory and surveillance capacity for AMR, is in the pipeline. The World Bank financed PADEL-B project might consider supporting AMR activities to complement other projects.

### 3.5 AMR Surveillance and Laboratory Capacity in Environment and Food Safety

The Environmental Quality Analysis Laboratory (LAQE, Laboratoire d'Analyse de Qualité de l'Environnement) is mainly involved in water control. It does physico-chemical testing and has very basic bacteriology activity. It is not conducting AST. A small room is dedicated to bacteriological activities, including culture preparation, sample reception and analysis. While the environment department has the mandate to test effluents from hospitals, labs and farms, it does not have the capacities to perform the tests. The lab staff lacks skills required to run bacteriology and AMR related activities.

The Laboratory of Food and Environmental Control of the LNSP (Laboratoire National de Santé Publique) conducts food safety analysis. Although well equipped for food and water microbiological analysis, there are important capacity building needs (reagents, equipment, staff training, LIMS, biosecurity support) for them to be involved in AMR monitoring and surveillance.

To date, no organization has the capacity within the food and environmental sectors for reporting AMR surveillance data to the AMRCC.

### 3.6 Rational use of antimicrobials

Burkina Faso does not have a pharmaceutical industry and, therefore, depends on the foreign market for antimicrobials (AM). To cover its needs, the country relies on both public and private suppliers. AM import is officially regulated in all human, animal and agricultural sectors.

Regarding HH, the National Agency for Pharmaceutical Regulation (ANRP/MOH) is responsible for:

- Developing the regulatory framework for the production, importation, distribution and issuance of pharmaceuticals (including antimicrobials),
- Monitoring the implementation of national pharmaceutical policies,
- Inspecting public and private pharmacies,
- Promoting the rational use of drugs,

The General Directorate for Access to Health Products (DCAPS - Direction de la Chaîne d'Approvisionnement des Produits de Santé and the DPH- Direction de la pharmacie hospitalière) are responsible for:

- Supplying health products to health facilities,
- Monitoring hospital consumption and use of AM,
- Promoting rational use of drugs in hospitals,
- Developing the hospitals pharmacies.

The National Central Pharmacy (CAMEG; Centrale d'Achat des Médicaments Essentiels Génériques et des Consommables Médicaux) and its regional agencies purchase, store and distribute health products for the public and private sectors. Private health facilities also use private wholesalers-distributors who are subject to authorization by the ANRP. As a result, the ANRP knows the volumes of antimicrobials officially introduced into the country.

The National Laboratory for Public Health (LNSP, Laboratoire National de Santé Publique) is responsible for quality control of drugs in the country. However, the capacity of this laboratory is limited, and the quality of the drugs introduced and consumed in the country cannot always be measured effectively.

Despite the existing regulation on drug dispensing, direct purchase of antimicrobials at the pharmacy without a prescription is common. A parallel informal market exists and is difficult to measure.

The National Action Plan on AMR (2018-2021) contains the specific activities with the objective to improve the rational use of antimicrobials by prescribers, providers and consumers.

In the field of AH, antimicrobials are widely used in both intensive and extensive production systems whichever the species, with a very high consumption in poultry. Despite existing regulations on the prescription of antibiotics, farmers have free access to AM in veterinary drug shops and on the markets, including officially registered and illegal products. Most veterinarians and veterinary auxiliaries have a poor knowledge of the correct use of AM. In general, farmers treat their animals on their own and call AH professionals as the last resort. A routine quality control of veterinary drugs is not in place as the Department of Veterinary Drug Control and Legislation (DSPVL) laboratory lacks skilled staff and material. The LNSP (National Laboratory for Public health) does some testing on demand but lacks the standards for veterinary drugs. The DSPVL collects data on officially imported products but has little knowledge and control on the quantity and quality of AM available in country.

## 4 Scope of the Fleming Fund Burkina Faso Country Grant

The Fleming Fund Country Grant in Burkina Faso aims to strengthen diagnostic and surveillance systems for AMR and AMU in the areas of HH and AH. This support will include:

- Strengthening OH and AMR governance to support AMR and AMU surveillance using a One-Health approach,
- Improving the surveillance capacities (data collection, management, analysis) for AMR, AMC and AMU in human and animal health, at central, regional and field levels. For HH, the Country Grant is intended to support implementation of the WHO GLASS programme and Grantees should refer to the roadmap for GLASS participation produced by the London School of Hygiene and Tropical Medicine (<https://amr.lshtm.ac.uk/wp-content/uploads/sites/12/2016/11/AMR-Surveillance-Protocol.pdf>)
- Strengthening the capacities of the two national reference laboratories (LNR and LNE) as well as seven sentinel laboratories as indicated in Table 1 (out of the fourteen sentinel sites included into the wider integrated network). According to the needs identified, this support may include laboratory equipment, reagents, consumables, infrastructure (renovation, rehabilitation and/or expansion, generators, etc.).
- Improving AM use and regulation in human and animal health, including capacity building for staff working in the health system.

A laboratory needs assessment was conducted in five of the sites listed in Table 1 during the preparation of this request for proposals to understand the current capacity. These sites are indicated in green in Table 1. The successful grantee will need to conduct laboratory needs assessments on the remaining four sites, using the tool which will be provided by the Fleming Fund Management Agent, Mott MacDonald.

**Table 1: List of Selected Laboratories for the Burkina Faso Country Grant<sup>4</sup>**

Legend: Sites assessed by the Management Agent  Sites to be assessed by the grantee

No.	Site Name	Location	Sector
1	Laboratoire National de Santé Publique (LNSP)	Ouagadougou	HH
2	CHU YALGADO (CHU YO)	Ouagadougou	HH
3	CHU Pédiatrique Charles De Gaulle (CHU PCDG)	Ouagadougou	HH
4	Laboratoire National d'Elevage (LNE), (LNVR)	Ouagadougou	AH
5*	Laboratoire Hôpital protestant SCHIPHRA	Ouagadougou	HH
6*	Laboratoire Polyclinique Notre Dame de la Paix (PCNDP)	Ouagadougou	HH
7*	Laboratoire Polyclinique SANDOF	Ouagadougou	HH
8	CHU SOURO SANOU (CHU SS), (LNR)	Bobo Dioulasso	HH
9	Laboratoire de biologie médicale du Centre MURAZ	Bobo Dioulasso	HH

*\*Refer to Output 3.2 regarding the inclusion of laboratory facilities within the AMR surveillance system which are not public health sites.*

## 4.1 Grant Objectives and Outputs

The four objectives and related specific outputs proposed for the initial Fleming Fund Country Grant to Burkina Faso are listed below. Applicants are expected to respond to this RFP by developing and proposing activities that are both costed and demonstrate appropriate indicators of grant implementation. Reflection back to the NAP is encouraged.

An inception phase will be initiated upon lead grantee appointment. The duration of this phase will be determined during grant agreement, but will not exceed six months, and a final implementation plan will be agreed upon at the end of the inception phase. All proposals should include the full implementation plan, as the inception phase is for refinement, not development of the full implementation plan.

Sustainability is key to the success of this Country Grant. The current NAP, although costed, contains no formal financial commitment to activities from the Government of Burkina Faso. The lead grantee will be expected to undertake a sustainability assessment of FF investment, and a key response within the proposal for this Country Grant should include strategies for engaging with the Burkinabe government to build consensus for sustainably supporting investment made beyond this Country Grant. The lead grantee will be expected to: take a strategic approach to sustainability; identify key challenges and critical factors relating to sustainability; explain concrete strategies specifically designed to address these challenges and factors; outline an exit strategy.

During the inception phase, the grantee will:

- Collaborate with AMRCC for the development of the workplan corresponding to the objectives and outputs, as outlined below,
- Collaborate with the Fleming Fellows and their Host Institutions to understand the Fellowship workplans,
- Conduct needs assessments at the remaining laboratory sentinel sites using the tools and methodology provided by the Management Agent,
- Finalize with Mott Macdonald, the management agent, the procurement plans for a) equipment and renovation needs for the surveillance sites and b) consumables and reagents to conduct safe and secure quality bacterial identification and susceptibility testing

All activities proposed should correspond to the list of eligible expenses in Annex 1.

<sup>4</sup> Initial sites for inclusion – with the potential for additional sites to be added within the duration of the grant, as agreed upon by Mott MacDonald.

**Table 2: Objectives and Outputs of the Burkina Faso Country Grant**

Objectives/Outputs
<b>Objective 1: Strengthen AMR and One-Health Governance through supporting the AMRCC and AMRNC.</b>
Output 1.1: AMRNC officially adopts the NAP and regularly monitors, evaluates and reports progress on the NAP.
Output 1.2: AMRNC is supported by the AMRCC and meets quarterly.
Output 1.3: AMRCC routinely shares AMR surveillance data with MS, MRAH, MEEVVCC and MAAH through quarterly data review workshops.
Output 1.4: AMRCC submits regulation and policy propositions to the AMRNC.
Output 1.5: An annual national symposium on AMR is held for data and knowledge sharing.
<b>Objective 2: Strengthen the operational capacities of the two national reference laboratories (HH and AH) and the sentinel laboratory sites.</b>
Output 2.1: The human health NRL is operational, coordinates the sentinel lab network, provides quality control testing, biobanking storage and assures biosafety.
Output 2.2: The human health sentinel labs are operational and have quality control improvement measures.
Output 2.3: The LNE effectively functions as the animal health reference lab for AMR, as part of the national sentinel network.
<b>Objective 3: Improve the surveillance capacities (data collection, management, analysis, reporting) for AMR, AMC and AMU, at central, regional and field levels.</b>
Output 3.1: The AMR sentinel sites for human health are operational and transmit monthly AMR data to the National Reference Laboratory.
Output 3.2: Conduct a situational analysis to better understand the AMR role and contribution of key private/not-for-profit laboratories within the public health AMR surveillance system
Output 3.3: Strengthen the capacity of DVS and the animal health national surveillance network (RESUREP) to design and implement AMR surveillance including transport of samples to the National Reference Laboratory.
Output 3.4: AMR/AMU/AMC data is collected and analysed at national level (DPSP/ANRP), for upward reporting to the AMRNC.
Output 3.5: An AMU/AMC surveillance programme for human health is designed, costed and implemented by the ANRP.
Output 3.6: An AMR surveillance plan for poultry is designed, costed and implemented by DGSV/MRAH.
Output 3.7: AMR surveillance data in human and animal health is produced that could be shared with regional and international surveillance networks (GLASS, WAHO and others).
<b>Objective 4: Improve AMU/AMC knowledge and regulation capacity in human and animal health.</b>
Output 4.1: AMRCC submits evidence-based regulation and policy propositions to the AMRNC, for a rational use of antimicrobials in human and animal health.
Output 4.2: Clinical staff at the surveillance sites engage with microbiology services to develop passive surveillance for drug resistant infection.
Output 4.3: A baseline study of the use of antimicrobials in the animal health sector is conducted and data on AMU/AMC is produced.

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Output 4.4: National curriculum is developed for animal health professionals and livestock (poultry) producers for the rational use of antimicrobials and prevention/control of AMR in farms (DGSV/MRAH).

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## 4.2 Duration of the grant

This grant is expected to last 21 months ending no later than September 2021.

## 4.3 Funding Envelope

Grant applications should be in the region of £2-3 million, including all capital and recurrent costs, overheads and management costs.

Mott MacDonald is responsible for driving Value for Money (VfM) on behalf of the UK Department of Health throughout the Grant programme and will carefully consider how the proposal addresses efficiency, effectiveness, economy and equity in delivering the Request for Proposal (RFP) outputs in relation to the proposed costs. The Guidance Notes for the Grant Application Form provide more information on different dimensions to be considered as part of a VfM approach.

## 4.4 Procurement

### ***Laboratory equipment, reagents and consumables***

An indicative procurement plan for laboratory equipment, reagents and consumables was compiled during the site assessments conducted by the Management Agent for some sites in Table 1, above. The first round of procurement will be based on these assessments to ensure early start up.

The remaining sites (indicated in grey in Table 1), will be assessed by the grantee, who will develop a second-round procurement plan during the inception phase. The assessments will utilize the tools provided by the management agent and will include assessment of infrastructure to determine what renovations are required. For all human health laboratory sites, including those assessed by the Management Agent, applicants should include a placeholder budget of £200,000 per sites. For animal health laboratory sites, applicants should include a placeholder budget of £100,000 per site.

Highly preferential rates have been secured by the Fleming Fund for the purchase of key laboratory instruments, namely blood culture analysers (BACTEC or BacT/Alert), automated antimicrobial susceptibility testing platforms (Vitek II or BD Phoenix), and MALDI TOF mass spectrometers (Bruker or Vitek MS).

To take advantage of these rates, these instruments will be procured centrally by the Management Agent's procurement partner, International Procurement Agency (IPA), who will also co-ordinate delivery.

Blood culture analysers will be supplied to laboratories providing a clinical service, with the final number determined by the laboratory assessments. Each automated AST platform will be supplied bundled together with a mass spectrometry instruments, with the necessary databases and linkage software. A maximum of two of these bundles (i.e. two AST platforms linked with two mass spectrometers) will be supplied for use in the AMR reference laboratories (animal health and human health). If the reference laboratories do not have sufficient specimen throughput, or do not have the required infrastructure, the instruments may be deployed, with the approval of the Management Agent, to alternative sites.

These items will be paid for directly by the Fleming Fund via a grant to IPA. The costs include the instruments, delivery, import duties (up to 15%), installation, basic training, software and first year service contracts.

Reagent costs and subsequent service contracts will come from the Country Grant budget and should be factored in to this application. All other laboratory equipment and costs will also come from the Country Grant budget and should also be factored in.

Country suppliers (Biomérieux or Beckton Dickinson) have been preselected by the Management Agent, however, purchase and delivery will be co-ordinated by IPA, and the Grantee will need to work with IPA to

confirm readiness for delivery. Purchase of additional instruments, if required, should also be done via IPA, with the approval of the Management Agent, to secure the highly preferential prices offered to the Fleming Fund

During the inception phase, the grantee will work in consultation with the Management Agent, the Management Agent's procurement supplier (International Procurement Agency) and the UK Department of Health and Social Care, to determine the most suitable method of procurement for laboratory equipment, and to develop reliable stock management and supply systems for consumable and reagents.

The lead grantee will also be expected to:

1. assist with the importation and delivery of equipment and consumables to recipient sites;
2. work closely with the procurement partner (whether IPA or an alternative organization) to ensure the appropriate delivery sequence of items;
3. maintain an asset register of all items defined as assets by the programme;
4. regularly monitor the items that have been procured by Fleming Fund Grants Programme to ensure:
  - a) items are being used for intended purpose;
  - b) items are being maintained appropriately; and
  - c) to report any misuse or misappropriation of assets to the Management Agent.

## 5 Grantee Role and Responsibilities

The main role of the grantee will be to plan and execute outputs and deliver the objectives listed above. The Grant is designed as an AMR laboratory capacity building and systems strengthening intervention. The grantee is responsible for providing, either through in-house resources alone, or through a partnership or consortium, the expert technical assistance and high-quality support needed to strengthen the selected reference and surveillance sites' capability and capacity to generate and share AMR surveillance data on both a national and international basis.

## 6 Key measures of success

Country Grants will eventually be expected to generate results that can be tracked using a standard set of indicators that will monitor progress and achievements within and across Country Grants. A copy of the full list of indicators will be shared in the Application Pack.

However, for the first Country Grant, it is important to note that:

- Applicants are not expected to select from and use these indicators for this first Country Grant. While it is possible that some of the formal indicators may trigger towards later stages of the grant award, the likelihood of this will be reviewed and discussed by Mott MacDonald with the successful applicant.
- For the purposes of this first grant, process level indicators will be used to track progress against the work plan. The grantee is expected to utilize the indicators proposed above or to propose alternative SMART indicators in line with the outputs summarized above.<sup>7</sup> These will then be negotiated and agreed with Mott MacDonald as the Management Agent.
- No Country Grant will be expected to use all the Fleming Fund indicators. Instead a relevant sub-set of indicators will be proposed by the grantee for joint agreement with Mott MacDonald.
- The Fleming Fund will be independently evaluated by ITAD, a specialist evaluation firm, who have been appointed by the UK Department of Health and Social Care for this purpose. In addition to measuring grant performance against the objectives and outputs stated above, the grant will also be monitored on the implementation of, and adherence to, the Fleming Fund grant principles described

above. All grants are subject to review and evaluation by the evaluators, and full co-operation with the evaluators by all grantees is expected.

## 7 Key partnerships, alignment and coordination

The Country Grant must be delivered in alignment with the AMR National Action Plan for Burkina Faso and should support the national effort and take account of current capacity levels, future absorptive capacity, alignment with other AMR related initiatives including those undertaken by multilateral agencies such as FAO and WHO. In addition, the Grantee will need to build strong collaboration and coordination with local academic and research institutions at different levels for technical and other support.

## 8 Complementing other grants from the Fleming Fund Grants Programme

This first Country Grant is expected to work effectively and synergistically with other grants under the Fleming Fund Grants Programme at the regional level. This relates to both the Fleming Fellowship Scheme and the Regional Grants. For details see [www.flemingfund.org](http://www.flemingfund.org)

It is anticipated that Burkina Faso will receive several Fleming Fellowships, for animal health and human health. Successful applicants will receive specialized training in AMR and AMU data management and analysis, laboratory quality management, and in advanced laboratory technical skills.

Upon completion, Fellows are expected to become technical leaders in AMR and AMU surveillance in Burkina Faso, and it is hoped that they will play a role as mentors and active trainers in capacity building activities that will be implemented through this Country Grant. Therefore, once established, the Grantee is expected to work in collaboration with Fleming Fellows and potentially their Host Institutions (who provide remote support to the Fleming Fellows).

In addition, Regional Grants will focus on strengthening networking and data sharing on AMR at the regional level. The grantee is expected to liaise, through Mott MacDonald, with such grants for maximizing the sharing of AMR data and learning at the regional and global levels.

## 9 Application requirements

### 9.1 Grantee Eligibility Criteria

Lead grantee applicants must satisfy the following eligibility criteria before applications can be assessed:

- Eligible lead grantee organizations are: National institutes (such as universities or research institutes); Non-Governmental Organizations; UN Agencies; Private companies.
- Can be a single organization or consortium; if a consortium, lead grantee applicant must evidence it has the appropriate governance, coordination mechanisms, and documented track record to manage sub-grantees.
- Must demonstrate that they are registered to work within the country, including the submission of essential documents such as; current business registration certificate or equivalent, articles of incorporation, current tax clearance certificate, social security certificate, annual audited statements for the past three years.
- Lead grantee applicant must demonstrate they are competent and sufficiently experienced in successfully supporting laboratory capacity development, disease surveillance, capacity building, and One Health in LMICS.
- Lead grantee applicant must demonstrate that they are fully functional in both French and English.
- Lead grantee applicant must be able to provide all information required to demonstrate that adequate and tested financial management controls and levels of authority are in place and are adhered to.

- References from clients for previous work undertaken within the last five years are welcome.
- In line with UK Government financial transparency requirements any for-profit organisations will be asked to declare profit levels.

## 9.2 Language Considerations

For the purposes of the Burkina Faso RFP, it is important to note that lead grantee applicants must demonstrate that they are fully functional in both French and English. In-country key stakeholder engagement, deliverable outputs and surveillance reporting will need to be provided in French. Simultaneous translation services are not allowable within this grant; therefore, all staff and contractors must be fully functional in French. However, all engagement and reporting by the grantee to the Management Agent must be provided in English. The aforementioned is also stated within the Grantee Eligibility Criteria (9.1).

## 9.3 How to apply

Prospective lead grantees must register their interest to apply by emailing [flemingfundWA@mottmac.com](mailto:flemingfundWA@mottmac.com) to receive an invitation to the Applicant Information Session, and an example of the Application Pack.

The Applicant Information Session (AIS) will be organized in Ouagadougou, Burkina Faso on 08 July 2019. The details of the venue will be shared with applicants registering their interest.

Ahead of the AIS, an example Application Pack will be shared and will include the application form, budget and milestones template and Guidance Notes. Following the AIS, the official Application Pack will be sent out to prospective Grantees who have registered their interest to apply for the grant.

To apply, please complete the application form and budget and monitoring template provided, in line with the Guidance Notes, by the deadline indicated in Section 9.6.

Note the key requirements set out at the beginning of the Country Grant Application Form:

- When submitting the application document, press “Reply All” from the official Application Pack automated email that you received with the application documents attached. Do not send it to us from a new email, and do not modify the Subject-line. Only “Reply All” emails will register the documents in our system.
- Keep file sizes as low as possible - there is a 9MB size limit to each individual email that can be received by the grant submission software. You can submit documents by sending multiple emails attaching submission documents to each one. Please follow the instruction (above) using “Reply All” to the original email.
- The submission deadline is: 31 July 2019, 17:00 GMT.
- Applicants should observe the word limit. Additional words outside the limit will be disregarded. All documents included as part of the proposal must be submitted by separate e-mail in Word, Excel, and PDF format (body font: Calibri 11pt). Do not send through as zipped files. You should include a covering letter, signed by the person authorized to represent your organization for the submission of this proposal.
- Your application is conditional upon your acceptance of the grant agreement (format will be shared in the application pack).

Proposals that do not satisfy these criteria may not be accepted.

## 9.4 Evaluation criteria

The Application Pack will include the application form, indicating the scoring and weighting for each section of the application. The Application Pack will also contain Guidance Notes explaining what we are looking for in terms of a good quality response for each question, including approach to Value for Money (VfM).

We will be assessing the application on the following key areas:

- Technical capacity to address the different aspects of AMR covered by this Country Grant.
- Ability and preparedness to bring stakeholders together in an effective and productive working arrangement, promoting a One Health approach.

## 9.5 Restrictions/limitations

Any potential conflict of interest known at the time of registration should be flagged to the Management Agent at that time. If a potential conflict of interest arises after that point in time, the prospective lead grantee must clearly disclose this in the proposal.

## 9.6 Key dates

Publication of RFP: 14 June 2019

Deadline for registering interest to attend the Applicant Information Session: 28 June 2019, 1700 GMT

Applicant Information Session : 08 July 2019

Deadline for registering to apply for Grant: 10 July, 1700 GMT

Application deadline: 31 July, 1700 GMT

Anticipated start date of grant: 01 December 2019

## 9.7 Contact details and support information

Any questions on the Request for Proposals should be sent to [flemingfundWA@mottmac.com](mailto:flemingfundWA@mottmac.com). The Management Agent will endeavor to respond to queries within 72 hours.

# 10 Objectives and Outputs

## 10.1 Objective 1: Strengthen AMR and One-Health Governance through supporting the AMRCC and AMRNC.

**Output 1.1: AMRNC officially adopts the NAP and regularly monitors, evaluates and reports progress on the NAP.**

At the time of writing this call for proposals, the AMR National Action Plan (2017-2021), written in May 2017, had not been formally adopted by the Government. It is up to the AMR National Commission (AMRNC) to finalize the adoption process.

The Grantee should work with the relevant ministries and stakeholders to provide technical and financial support to promote official adoption of the Nation Action Plan. The Grantee should also undertake a budgetary analysis for implementation of the NAP and promote discussions to identify sources of funding, and integration of the NAP budget into country financial planning.

***At the end of the first six month of the grant, we expect the following to have been achieved:***

- The roles and responsibilities of each of the ministerial departments for the implementation of the AMR National Action Plan are clearly defined and approved by the AMRNC.
- The activities in the NAP have been costed, and plans are developed to identify potential sources of funding.
- The financial resources necessary for the implementation of the first year of the AMR National Action Plan are identified by the AMRNC.
- Key challenges and critical factors relating to sustainability are identified.
- The Grantee is able to outline a grant exit strategy with the AMRNC.

**Output 1.2: AMRNC is supported by the AMRCC and meets quarterly.**

Six multidisciplinary technical subcommittees corresponding to the different areas of the AMR have technical working groups (TWG) set up. The AMRCC secretariat organizes and coordinates the work conducted in the technical subcommittees. For the purposes of this country grant, the focus is not to support all six technical subcommittees, but the AMR laboratory capacity and surveillance system aspects.

*At the end of the grant, we expect that the following will have been achieved:*

- The AMR technical groups specific to laboratory capacity and surveillance system implementation meet regularly, contribute to the roll-out of the NAP and transmit the results of their work to the NC.
- The NC considers the work produced by the technical committees and uses it as evidence to inform its decision-making processes corresponding to the respective areas of responsibility of its members.

**Output 1.3: AMRCC routinely shares AMR surveillance data with MS, MRAH, MEEVCC and MAAH through quarterly data review workshops.**

The ministries and entities involved in AMR surveillance include:

- MS (Ministère de la Santé) : DLBM (Direction des Laboratoires de Biologie Médicale), ANRP Agence Nationale de Régulation Pharmaceutique), DCAPS (Direction de la Chaîne d'Approvisionnement des Produits de Santé), DPH (Direction de la Pharmacie Hospitalière), DQSS (Direction de la Qualité et de la Sécurité des Soins), DSIS (Direction des Systèmes d'Information en Santé), LNSP (Laboratoire national de Santé Publique), and INSP (Institut National de Santé Publique).
- MRAH (Ministère des Ressources Animales et Halieutiques) : DGSV (Direction générale des Services Vétérinaires) and LNE (Laboratoire National d'Elevage).
- MEEVCC (Ministère de l'Environnement, de l'Economie Verte et du Changement Climatique) : LAQE (Laboratoire d'Analyse de la Qualité de l'Environnement).
- MAAH (Ministère de l'Agriculture et des Aménagements Hydrauliques) : DPV (Direction de la Protection des Végétaux).

*At the end of the grant, the following results are expected:*

- Representatives of these different entities actively participate in the meetings of AMRCC and AMRNC; they use these platforms to share information available on AMR in the areas of human and animal health and - where appropriate - in the environmental sector.
- MS and MRAH work together to understand the determinants of AMR in the areas of human and animal health; they identify the risk factors that need to be addressed and interventions that need to be implemented or modified.
- MS, MRAH and MAAH produce AMR surveillance reports in their own sector; these reports include a section in which monitoring data from other sectors are considered and the potential consequences for their sector are analysed.

**Output 1.4: AMRCC submits regulation and policy propositions to the AMRNC.**

The AMRCC, through its technical committees, identifies areas where regulations and/or policies are useful and necessary, in order to improve the fight against AMR in the country.

The AMRCC submits regulation and policy propositions to the AMRNC for validation and transmission to the appropriate authorities.

***At the end of the grant, the following results are expected:***

AMRCC has been able to submit regulation and policy propositions that fill gaps and improve the fight against AMR.

All regulation and policy propositions have been discussed by AMRNC and validated.

**Output 1.5: An annual national symposium on AMR is held for data and knowledge sharing.**

An annual AMR Symposium will allow all Fleming Fund participants and other stakeholders in the human and animal health sectors as well as the environment and food security sectors to discuss the information generated by the programme. AMR stakeholders will be able to synthesize knowledge generated and to better understand the situation of AMR in the country. A positive output of this symposium would be to achieve the further identification of gaps and priorities for future actions and the updating of current response strategies.

A NAP progress review should be conducted annually by the AMRCC and AMRNC to identify if results match the expectations and/or if gaps are identified that need correction. This should be presented at the National Symposium.

An internal evaluation should be conducted by the AMRCC in the last quarter of this grant in order to measure and analyse progress and further priorities. These results can also be presented at the National Symposium or future knowledge events.

The organization of these annual symposia should be through the AMRNC.

***At the end of the grant, the following results are expected:***

- An annual symposium on AMR is organized with the active participation of representatives from the health, animal health, environment and food security sectors;
- A better understanding of the AMR situation, its dynamics, cross-sectoral interconnections and challenges by AMR stakeholders;
- A clear identification of positive results and areas for improvement; and
- An update on policies and strategies to combat AMR in Burkina Faso.

## **10.2 Objective 2: Strengthen the operational capacities of the two national reference laboratories (HH and AH) and the sentinel laboratory sites.**

**Output 2.1: The human health NRL is operational, coordinates the sentinel lab network, provides quality control testing, biobanking storage and assures biosafety.**

The human health NRL, located in Bobo Dioulasso (Department of microbiology at SANOU SOURO University Hospital), already provides support to the sentinel lab network. The laboratory is preparing for relocation and will need support in terms of renovation and equipment. In addition, the laboratory's capacity to cover all NRL activities and coordinate efficiently the network needs to be strengthened in order to be able to:

- Effectively coordinate the laboratory network to ensure staff capacity building;
- Provide IT support to allow data collection at laboratory sites for input into LIMS and conduct a laboratory capacity assessment questionnaire for AMR surveillance, to better manage capacity building needs;
- Contribute to provide, in collaboration with DLBM, the equipment needed;
- Develop and validate SOPs in collaboration with the sentinel labs and DLBM;
- Make sure, together with DLBM, that reagents/antimicrobials are continuously available for AMR surveillance and training;

- Ensure that staff is trained for biosafety and a biosecurity framework is functional in all labs;
- Detect and track resistant phenotypes and map at a national level to contribute to informing appropriate treatment regimens;
- Design and make available to the network of laboratories (sentinel sites) decision trees for AMR bacteria phenotypic identification for transmission to the NRL;
- Establish a simple biorepository at the NRL, with relevant training and SOPs for isolate selection, storage, metadata collection and use of isolates;
- Establish an Internal Quality Control (IQC) programme as well as External Quality Assessment (EQA) for the detection of AMR and interpretation of results;
- Ensure data notification to the DLBM and the AMRCC; and
- Put in place basic molecular techniques (Polymerase Chain Reaction - PCR) for molecular characterization of strains and the study of genetic resistance profiles; carry out genetic mapping that can inform decision-making at the national level.

**At the end of the grant,** it is expected that the NRL will be able to:

- Effectively monitor AMR surveillance activities;
- Provide continuous capacity building support to the AMR laboratory network, including the LNE as they build their capacity as the animal health NRL;
- Standardize the supply of culture media, reagents and consumables;
- Standardize the maintenance of AMR equipment;
- Support the continued standardized entry of data into LIMS to ensure quality and validity;
- Monitor and validate the AMR results; and
- Transmit validated data monthly to DLBM/AMRCC.

**Output 2.2: The human health sentinel labs are operational and have quality control improvement measures.**

The human health sentinel laboratories presented in Table 1 will need to be renovated and reorganized for a safe workflow. They need to be better equipped to provide the NRL/DLBM with quality AMR surveillance data. Under the NRL coordination, the capacity of the sentinel network will be strengthened in order to:

- Develop and implement standard operating procedures;
- Improve the supply chain for reagents, media, antibiotics;
- identification of needs for culture media, reagents and consumables,
- Ensure an EEQ programme for identification of strains and interpretation of AST results;
- Develop an internal quality control programme for continuous assessment of methods, media and reagents;
- Train all staff in biosafety;
- Ensure that a biosecurity system is functional in the labs, transport of infectious samples from the field sites to the laboratory lacks is safe, properly managed and financially supported; and
- Monitor AMR, collect data and send information to NRL/DLBM regularly.

**At the end of the grant, it is expected that the human health sentinel laboratories:**

- Are equipped with appropriate safety equipment and staff capacities are strengthened for bacteria culture / identification and AST;
- Have reagents, media, antibiotic discs and consumables available for AMR surveillance;
- Effectively transmit monthly AMR surveillance data to NRL/DLBM that is quality-assured;
- Have a functional biosecurity and biosafety system;

- Staff are trained to properly use the equipment and materials;and
- Laboratories have a LIMS available for data recording and sharing.

**Output 2.3: The LNE effectively functions as the animal health reference lab for AMR, as part of the national sentinel network.**

The LNE, located in Ouagadougou, is the NRL for AH. LNE has limited diagnostic and microbiology capacities and facilities and needs to be strengthened in order to be able to act as the AMR reference laboratory in the country.

*At the end of the programme, it is expected that:*

- Lab infrastructure and organizational work flow is improved;
- Lab equipment and commodities are available for effective use;
- Lab staff is trained on isolation, identification, serotyping, AST;
- Stock management is in place;
- A functioning QA system is in place, including biosafety and biosecurity, transport of infectious samples from the field sites to the laboratory lacks is safe, properly managed and financially supported;
- Handling of solid and liquid infectious waste is appropriate;
- SOPs and manuals for culture, identification and AST are in place;
- A laboratory data management system (LIMS) is in place and regularly fed with proper data;
- Regular AMR data sharing with Veterinary services and HH is in place through an AH surveillance database/interface with HH;
- A biobank for the storage of relevant isolates is in place;
- The LNE is part of the RESUREP surveillance activities for AMR, particularly in poultry farms; and
- AMR-monitoring data from high density production sites are regularly collected, quality assured, stored and transmitted regularly to the DGSV and the AMRCC.

### 10.3 Objective 3: Improve the surveillance capacities (data collection, management, analysis, reporting) for AMR, AMC and AMU, at central, regional and field levels.

**Output 3.1: The AMR sentinel sites for human health are operational and transmit monthly AMR data to the National Reference Laboratory.**

The sentinel laboratories identified in Table 1 must be equipped and capable so they can directly inform the National Reference Laboratory (NRL) located at the Department of Microbiology at SANOU SOURO University Hospital. The grantee will collaborate with AMRCC, DLBM and the NRL in order to support the laboratories, through capacity building activities, including: an external quality assessment (EQA) programme, the development of SOPs, as well as management and information system needs.

*At the end of the grant, the following result is expected:*

- All laboratory sentinel sites listed in Table 1 are able to continually monitor resistance profiles.
- All sites are able to use information systems as required for transmission of data to the NRL and DLBM/MS.

**Output 3.2: Conduct a situational analysis to better understand the AMR role and contribution of key private/not-for-profit laboratories within the public health AMR surveillance system.**

Currently there are several private/not-for-profit laboratories that are understood to be providing capacity support to the public health system. There are three human health sites that have been identified,

Laboratoire Hôpital Protestant SCHIPHRAH, Laboratoire Polyclinique ND de la Paix (PCNDP) and Laboratoire Polyclinique SANDOF, but there are potentially others. The Grantee should engage with the public health officials and the private/not-for-profit laboratory services currently providing capacity support to better understand this support provided and how non-government sites can contribute to the AMR surveillance system.

***By the end of inception, the Grantee is expected to produce:***

- A comprehensive situational analysis of the current AMR related role, contractual agreements and capacity of private/not-for-profit laboratories to contribute to the public health AMR surveillance system; and
- Evidence-based recommendations and strategic planning to support and transfer the capacity from the private/not-for-profit laboratory system into the public health system – including a costed implementation plan.
- Inclusion of private/not-for-profit laboratory AMR surveillance data into the public health surveillance system.

Based on the recommendations, the Management Agent will determine the alignment with Fleming Fund activities and approve the implementation of any strategies. The applicant should include a general budget for capacity building activities within this output, which will become the total budget for the costed implementation plan. Capacity building activities should be initially targeted at the three aforementioned sites, and could include innovative approaches to training, mentoring, public-private initiatives, surveillance activities, quality assurance etc. The Management Agent will work with the Grantee within the available budget to set achievable priorities based on the evidence produced in the way forward recommendations.

**Output 3.3: Strengthen the capacity of DVS and the animal health national surveillance network (RESUREP) to design and implement AMR surveillance including transport of samples to the National Reference Laboratory.**

The AH surveillance network (RESUREP) must be equipped and trained in order to be able to collect samples and transfer them to the AH National Reference Laboratory (LNE) for testing.

Applicants should include provision to design, plan and conduct the sampling using funds from the Country Grant. Some international guidelines are available, as well as a guide produced by the Fleming Fund which will be shared with the successful applicant.

Upgrading of staff skills will be a priority and a training strategy will need to be designed, including:

- Private and public vets being part of the RESUREP in main poultry production areas are trained in sampling, sample handling and transport techniques.
- Supporting the development of a national AMR curriculum in ENESA and other institutions/schools aimed at animal health auxiliaries and Para veterinarians to support the improvement of AMR surveillance activities.

***At the end of the grant, the following result is expected:***

- The RESUREP can collect data/samples and transmit them to LNE/DGSV monthly;
- A surveillance strategy and operational plan is available for a cost-effective active AMR surveillance in and around poultry farms (incl. environmental samples), staff trained, and surveillance activities are in place;
- RESUREP field staff are trained to safely (biosecurity assured) collect, handle, label and transport quality samples;

- A sample collection, storage and transportation system is in place and functional within RESUREP; and
- National AMR curriculum for the ENESA and other institutions/schools is developed and approved for use.

**Output 3.4: AMR/AMU/AMC data is being collected and analysed at the national data center (DSIS/MS) for upward reporting to the AMRNC.**

The DSIS/MS will be supported to enable it to:

- Support the NRL with laboratory information management systems;
- Within the existing/planned AH database system, a module for bacterial animal diseases and AMR is developed and discussed between the LNE and RESUREP/DGSV;
- Support the collection design for AMU/AMC data for both human and animal health;
- Support the presentation of AMR surveillance data to ensure data may be used as evidence to inform at the national and international level; and
- Propose strategic management options for AMR in human health to the AMRCC.

**Output 3.5: An AMU/AMC surveillance programme for human health is designed, costed and implemented by the ANRP.**

The ANRP will be supported to enable it to develop, cost and pilot a surveillance strategy for AMU/AMC.

**At the end of the grant**, it is expected that the following will have been achieved:

- Design and pilot of the AMU surveillance programme, including analysis plan;
- Key recommendations and learning from the pilot, including sharing of data findings with AMRCC and other stakeholders; and
- Final AMU surveillance programme design and costing approved by the AMRNC.

**Output 3.6: An AMR surveillance plan for poultry is designed, costed and implemented by DGSV/MRAH.**

Considering the extensive use of antibiotics in the poultry sector, initial AMR surveillance activities in AH will focus on broiler and layer farms in high production areas (around Ouagadougou and Bobo).

To ensure an effective active surveillance in poultry, a sampling strategy should be developed together with the veterinary epidemiologists of the Direction de la Santé Animale (DSA) in consultation with the LNE and other stakeholders. SOPs and training material should be developed in line with the surveillance strategy.

Veterinarians and Para veterinarians of the RESUREP will be responsible for the sampling of poultry and the transport to the LNE. They should be trained in biosecurity measures as well as collecting, labelling, storing and transporting samples to the LNE according to developed SOPs.

The surveillance activities in the field will only start when the LNE has been refurbished, work procedures improved, and staff capacity strengthened. The continuous availability of sampling material and reagents at field and laboratory levels must be ensured for an effective surveillance.

**By the end of the grant the following is expected:**

- A sampling strategy including sampling schemes, SOPs and training material has been developed together with the DSA and other involved stakeholders.
- Veterinarians and Para veterinarians in the two main poultry production areas are trained in correct sampling, labelling, transporting of samples to the LNE and are carrying out their tasks following biosecurity measures.

The LNE receives proper labelled samples with accompanying information, can test the samples and forward information to the DSA/DGVS.

**Output 3.7: AMR surveillance data in human and animal health is produced that could be shared with regional and international surveillance networks (GLASS, WAHO and others).**

At present, Burkina Faso is not currently enrolled in GLASS or other regional/international surveillance networks.

*At the end of the programme, the following results are expected:*

- The AMRNC is encouraged and supported to consider enrollment in regional/international surveillance networks, specifically GLASS;
- The MS and MRAH prepare each an annual report on the progress of AMR surveillance, with help from DSIS/MS; this report includes all surveillance data collected through the national networks for HH and AH;
- The reporting on the progress of AMR surveillance is discussed within the framework of the AMRC; and
- Data is produced that could be shared with WHO, WAHO and OIE surveillance systems.

## **10.4 Objective 4: Improve AMU/AMC knowledge and regulation capacity in human and animal health.**

**Output 4.1: AMRCC submits evidence-based regulation and policy propositions to the AMRNC, for a rational use of antimicrobials in human and animal health.**

Some policy and regulation documents related to AMR/AMU/AMC have been already produced but are still waiting for validation. Other documents are needed in order to align Burkina Faso on the international recommendations from WHO, FAO and OIE.

*During the inception period, it is expected that:*

- A list of existing policies and regulations, validated and not validated, is established.
- A list of documents needed in order to align with international recommendations is established.

*At the end of the grant, it is expected that:*

- Burkina Faso has validated a collection of evidence-based AMR/AMU/AMC policies and regulations appropriate to its needs and to the international recommendations in this domain.

**Output 4.2: Clinical staff at the surveillance sites engage with microbiology services to develop passive surveillance for drug resistant infection.**

In many sites, use of existing microbiology services is limited, meaning that data is likely to be unrepresentative. **Ongoing engagement with clinical staff will be necessary across all sites to ensure appropriate sampling of patients, collection of basic patient data, and appropriate response to culture results.** This is critical for establishing a sustainable, passive surveillance programme.

The ANRP and DQSS have been working with the support of EXPERTISE FRANCE and USAID/JHPIEGO to develop and disseminate across the public health care facilities strategies and guidelines aimed at improving the rational use of antimicrobials, improving hygiene and promoting IPC measures. Laboratories will need to report results in a timely manner in order to inform patient care, and clinical staff should also be responding to culture results appropriately. Use of the clinical microbiology laboratories should be integrated into standard good clinical care of patients: as guidance, patients being treated for sepsis (i.e. receiving intravenous antimicrobials) should have at least one set of blood cultures taken, plus additional samples as

per presenting syndrome, and specimen forms should have basic data regarding clinical presentation and antimicrobial treatment.

***By the end of the grant we expect that the following will have been achieved:***

- Increased number of good quality blood culture samples sent to the laboratory, with acceptable contamination rates and relevant clinical data recorded on the request form;
- Results are communicated to clinicians in a timely manner;
- Clinicians and pharmacists at the surveillance sites demonstrate an improved understanding of how to incorporate bacteriology results into their practice; and
- Data generated at the site is analysed locally and being used to inform hospital level decisions on training, stewardship and drug policies. This may be via Medicines and Therapeutic Committees, Antimicrobial Stewardship Committees or similar entities.

**Output 4.3: A baseline study of the use of antimicrobials in the animal health sector is conducted and data on AMU/AMC is produced.**

Antimicrobials are widely used in animal production systems in Burkina Faso. In addition, informal pharmaceutical distribution channels pose a real problem and there is no accurate data on AMC and AMU in the animal sector. The Department of veterinary drug control and legislation (DSPVL) under the DGSV has low capacity on controlling the circulation of antimicrobials.

***By the end of the grant, it is expected that the following will have been achieved:***

- A comprehensive baseline study on AMU/AMC in the AH sector is available including regulations and policy aspects, data on quantity and quality; and
- The database of antimicrobials of the DSPVL is improved and supervision and control capacities of circulating antimicrobials is strengthened;
- A budgeted plan for the development of a software for veterinary drug wholesalers is agreed upon with the private sector.

**Output 4.4: National curriculum is developed for animal health professionals and livestock (poultry) producers for the rational use of antimicrobials and prevention/control of AMR in farms (DGSV/MRAH).**

Knowledge and capacities of AH professionals and producers are poor and, therefore, information and training on good practices are critical.

***By the end of the grant, it is expected that the following will have been achieved:***

- Modules for refresher training for AH professionals about treatment approaches and good practices are developed and tested;
- Modules for AMU, prevention and control of AMR are revised and approved for use as part of the national curriculum ( refer to output 2.2); and
- Modules for good production practices in poultry farms are developed, piloted and results shared.

## Annex 1: Eligible Funding Items

### Laboratory Infrastructure Enhancement

- Infrastructure: renovation, redecoration, electricity and water supply, environmental controls, waste and waste disposal.
- Equipment: appropriate equipment for the level of capability; biosafety and biosecurity equipment; automated culture and identification platforms; IT equipment.
- Reagents, durables & consumables: appropriate media, reagents, culture plates, etc; glassware; sample collection consumables.
- Transport and logistics: vehicles or contacted services for transport of goods, and people; safe and secure transport of specimens and samples; logistical support for surveys.

### Human Resource Strengthening and Workforce Reforms

- Training: clinical, veterinary, agricultural and One Health surveillance protocols; biosafety and biosecurity; microbiology, laboratory science and laboratory management; epidemiology and surveillance; genomics; IT training.
- Long-term support: ongoing and refresher training according to the competency and capabilities framework; Fleming Fellowship Scheme.

### Surveillance System Strengthening

- Governance: support for AMR Coordination Committees & working groups; operational planning; cross-sectorial meetings and strategy reviews; evaluation(s).
- Quality assurance and control: site visits and audits, laboratory twinning / mentoring.
- Data: transfer and storage; safety and security; analysis software and training.
- Recurrent costs: utilities, maintenance of equipment, upkeep of laboratory space, small maintenance, personnel costs.

### Building Foundations for Surveillance Data Use

- Support to build demand for AMR data: general awareness among prescribers, dispensers and agricultural consumers (i.e. farm workers, agribusiness); publication charges; workforce training.
- Evidence based strategy, policy and practice change: data / information sharing conferences, meetings and initiatives; conference attendance; IT platforms for data sharing and awareness / transparency.

### Rational use of Antimicrobial Medicines

- AMU/C surveillance: development of strategies for AMU/C surveillance; use of AMU data for appropriate prescribing / informing stewardship programmes.