1.1.4.1.1.1.1.1 The Antimicrobial Resistance (AMR) MULTI-PARTNER TRUST FUND

Combatting the rising global threat of AMR through a One Health Approach

Country Proposal Submission TAJIKISTAN

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Full proposal overview

Country	*Republic of Tajikistan*
Project title	***AMR MPTF**: One Health capacity building to support priority actions for combatting antimicrobial resistance in Tajikistan*
Implementing entities	*UN organizations - Tripartite agencies: FAO/OIE/WHO* *Government of the Republic of Tajikistan, ministries of: Health and Social Protection of the Population, Agriculture, Energy and Water Resources, Education and Science, Economic Development and Trade, Finance, Justice;* *Committees for Food Security, Environmental Protection, Investment and Agency for Standardization, Metrology, Certification and Trade Inspection*
Timeframe	*24 months – (June 2021)*
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Other Implementing Partners	*AMR Multisectoral Working Group* *Government Departments (see above)* *Environmental Health* *Civil Society Organisations* *Private Sector* *Academia*
Budget	
Total amount (USD) based on budget summary in Annex	*$ 999,915*
Total amount (USD) allocated to each Tripartite partner	*FAO 333,840* *OIE 234,865* *WHO 431,210*

Background	A situational analysis was conducted to inform the development of the national action plan (NAP). The situational analysis covered all sectors and identified a severe lack of data on AMR/AMU for the human, animal and agricultural sectors. Antibiotic use in humans was among the highest in 12 similar European countries and Kosovo [i]. An overview on the total consumption of antibiotics is not feasible and antimicrobial use without prescription, mainly through over-the-counter sales, happens frequently. Residue monitoring in food products is not performed routinely. Sub-standard quality of antimicrobials is more a problem in veterinary medicine than in human health. Use of antimicrobials as growth promotors in animal production occurs frequently. There are insufficient biosecurity, hygiene and infection prevention and control (IPC) systems in place in both the human and animal production sectors, as well as insufficient environmental surveillance capacity. Inadequate levels of facilities and trained personnel to generate and analyse human and animal data were also identified, as well as low awareness of AMR among all stakeholders. There is a lack of provision of safe water, sanitation and hygiene (WASH) services for the community and healthcare settings inTajikistan.
Status of National Action Plan for AMR	Following the launch of the Global Action Plan on AMR (GAP) in 2015, the Ministry of Health and Social Protection of the Population (MoHSPP) nominated a national focal point for AMR in 2016 to lead the work of a multisectoral coordination group on AMR (MCG). The MCG has representatives from multiple sectors and ministries, meets quarterly and has, after analysis of the situation in Tajikistan, worked jointly on the development of the NAP which was published in May 2018. It covers a five-year period from 2018-2022[ii] and has four strategic objectives: 1. Raise awareness and improve education on AMR; 2. Improve surveillance of AMR and AMU in Tajikistan; strengthen the infrastructure for surveillance and improve laboratory capacity; 3. Improve IPC through employing adequate measures for water sanitation and hygiene as well as strengthening biosecurity measures in animal health and food production; 4. Achieve a more rational use of antimicrobial medicines. Improve the regulated access to high-quality antimicrobial medicines in human and animal health and agriculture. The strategic objectives in NAP were detailed in 14 specific objectives; the operational plan outlines these activities with responsible organizations and dedicated timelines. A midterm review of NAP implementation was planned for 2020 but has been delayed. This review will provide an opportunity to adopt and refresh the NAP as well as increase the representation of the private and agricultural sectors on the MCG.
Project Summary	
Impact	***Tajikistan makes explicit commitments on AMR based on evidence and quality data, AMU associated behaviours and practices are sustainably improved in critical sectors, and the multi-sectoral approach to the AMR agenda is strengthened.***

Outcomes	• Evidence base/representative data on AMR/AMU improved for policymakers and sectors implementing AMU practices • Use of antimicrobial medicines optimized in critical sectors • Improved understanding of AMR risks and response options by targeted groups • Multi-sectoral coordination strengthened at national level
Outputs	1. Systems for collecting, analysing and interpreting data on antimicrobial resistance and antimicrobial medicines use developed or strengthened 2. Systems for optimized antimicrobial use strengthened in critical sectors to support the prudent use of antimicrobials 3. Systems for biosecurity and IPC strengthened in the country to reduce the incidence of infections 4. Improved capacity to design targeted awareness raising, behaviour change and educational activities 5. Improved capacity for designing and implementing AMR related policy frameworks, investment plans and programmes
Key activities	1. Develop and implement surveillance of AMR in human and animal health, food and the environment. 2. Provide laboratory training in public health and veterinary/food safety to strengthen laboratory capacity; 3. Monitor AMU/AMC in general population, health facilities, animal husbandry, and veterinary services; 4. Provide support to strengthen systems for optimized use, prudent use and regulated access to antimicrobial medicines; 5. Develop and implement standards for biosecurity, IPC and WASH and promote the use of vaccines in livestock and poultry; 6. Provide support to information campaigns, workshops and training courses for professionals in all sectors; 7. Provide programme support and coordination
Link to National Action plan	The goals and objectives of this Tripartite project are aligned with the current NAP to support the implementation of specific activities that aim to strengthen AMR/AMU surveillance in all sectors, to strengthen regulations on appropriate use of antibiotics in all sectors, to strengthen infection prevention and control through biosecurity, hygiene and WASH programs and to improve awareness and education for key groups. This Tripartite project will provide the technical expertise and support needed by the Government to support the implementation of these specific activities in the next 24 months, monitor these activities and show results by 2023.

We, the responsible officers of the Tripartite organisations, take responsibility for the efficient delivery of this proposal. We confirm that the proposal has been developed in close collaboration with government counterparts and that it is aligned with the wider agenda around the Sustainable Development Goals. We will work to ensure that addressing AMR is appropriately included in the United Nations Sustainable Development Cooperation Framework, and that there is a strategy to sustain and scale up the outputs of this work.

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WHO Representative and Head of Country Office [redacted]

2 Baseline and situation analysis

2.1 Problem statement

A situational analysis was conducted to assess the current AMR status, to get an overview of the ongoing activities to combat AMR in Tajikistan and to inform the development of the national action plan (NAP). The situational analysis revealed a severe lack of data on AMR/AMU for the human, animal and agricultural sectors. It showed critical gaps in all sectors which will be addressed in this joint Tripartite project.

Infection Prevention and Control (IPC) measures are lacking in the majority of healthcare facilities. In some hospitals, IPC programs have been set up with regular training sessions for (para)medical staff members but in many hospitals, shortages are reported of staff, equipment and materials. **Water, sanitation and hygiene** (WASH) in healthcare facilities (HCF), particularly in rural areas do not meet the basic requirements. It is estimated that around 30% of HCF have limited access to water supply which indicates that there is a need to address this significant gap in WASH provision across the country, especially in rural areas. A recent situational analysis of the status and enabling environment of WASH in healthcare facilities indicated also a need to review and update the regulations and standards by including specific WASH requirements.[1] **Biosecurity** measures and **good production practices** to minimize disease on farms are very limited. Addressing this gap will pose a significant challenge, particularly due to the thousands of backyard farms across the country, the lack of a good communication system for providing updated information to livestock farmers, and the lack of veterinary services.

Immunization is a key tool for the reduction of infections in both human and veterinary medicine. The **national childhood immunisation** schedule for 10 diseases is in place and the reported coverage varies between 95-97% across the country[2]. Only hepatitis B virus vaccination is offered to medical staff, but no data are available on the coverage or compliance. The national vaccine supply is being monitored and complications after vaccinations are recorded at the national level. National data is available and reported annually to national and international organizations. In animal health, **vaccination of livestock and poultry** for eight diseases[3] is recommended with vaccination costs identified as covered by the national budget. Assessment of the coverage of immunization in these key food producing species is low (estimated between 10 and 21% for some diseases, but much higher for anthrax). For instance, it was mentioned that only 400,000 doses are available for vaccination against foot and mouth disease (FMD) whilst over 2 million cattle and 5 million sheep and goats need to be vaccinated. About 10 years ago, FAO conducted a vaccination campaign against brucellosis, which was rampant among livestock and animals. Regrettably, this program ended before a significant reduction in the prevalence was achieved. Vaccinations are being administered by a limited number of private veterinarians who are contracted by the state services in the 64 districts. Thus, the capacity of the veterinary services is very limited to conduct appropriate vaccination campaigns for diseases with economic or public

[1] Water, sanitation and hygiene services in health care facilities in the Republic of Tajikistan: A situational analysis of the current status and enabling environment; Draft report under finalization, WHO Regional Office for Europe and Ministry of Health and Social Protection, Tajikistan)

[2] https://www.who.int/immunization/monitoring_surveillance/data/tjk.pdf

[3] Anthrax, tuberculosis, brucellosis, rabies, sheep and goat pox, peste des petits ruminants, foot and mouth disease, Newcastle disease

health importance due to differences in approach between states, the lack of delineation between public and private veterinarian responsibilities, an insufficient number of private veterinarians, the lack of updated technical knowledge, and an inadequate budget for veterinary services.

Surveillance of AMR needs to be established and to be supported by well-functioning laboratories in human and veterinary medicine, although equipment and materials for laboratories are lacking at present. In 2019, the Proof-of-Principle (PoP) project for AMR surveillance was conducted by the WHO Regional Office for Europe[iii] and is still ongoing in four hospitals in Dushanbe. A **National Reference Laboratory** (NRL) within the Ministry of Health and Social Protection of the Population (MoHSPP) has been established and staff have been trained in manual techniques and antimicrobial susceptibility testing (AST) protocols according to the current version of the EUCAST guidelines. The NRL becomes fully functional when it is accredited for ISO 15189. The national **Centre for Veterinary Diagnostics and Food Safety** (CVD) was accredited with ISO 17025/16025 in 2011 and 2014, respectively. Routine testing is carried out by the 23 veterinary state services, including annual serology screening on brucellosis in farms in addition to mass-vaccination; confirmation of infection is carried out by the CVD. The Food Safety laboratory is not performing microbiological testing of routinely collected clinical samples as AST is only done upon treatment failure. An operational plan for AMR monitoring on bacteria found on animal products for food consumption is available but not yet implemented. Surveillance of antimicrobial (AM) residues in animal products for food consumption is not performed. Laws have been improved with respect to food safety. In 2017, the Food Security Committee was established under the Prime Minister's office as a central body performing special executive, supervising and coordinating functions for food security (including food safety). In addition, the multisectoral Food Safety Council coordinates work pertaining specifically to food safety. The Council is responsible for overseeing the development and implementation of the new Food Safety Strategy.

In Tajikistan, **antimicrobial medicines** are widely available without prescription in both human and veterinary pharmacy shops. There is no oversight of the type of antibiotics being sold at these pharmacy shops because selling of antibiotics is not monitored. However, a 2014 study showed that Tajikistan was among the highest in 12 similar countries with respect to AM use in humans[i]. Treatment guidelines for AM use in hospitals are being reviewed every two years. The **Essential Medicines List** (EML) in Tajikistan was updated in 2018 and the next review was planned for 2020 but has been delayed. This review will provide an opportunity to include the AWaRe[4] (Access, Watch, Reserve) categorization of antibiotics. The Veterinary Services and veterinary association produce **treatment guidelines for veterinary medicine**. However, the current treatment guidelines do not consider the WHO's "Highest Priority Critically Important Antimicrobial list[5]" (CIA list) of human medicines, that should restrict veterinary use of such medicines, and would need to be adapted. Although not quantified, there is widespread use of antibiotics for growth promotion in the food animal production sector. There is no data available on the use of antimicrobial herbicides and pesticides in crop production. Sub-standard quality of antimicrobials appears to be a more substantial problem in veterinary medicine than in human health. FAO is planning a survey in 2020 on the consumption of antimicrobial medicines in six food production sectors.

[4] AWaRe: Access, Watch, Reserve: https://www.who.int/medicines/news/2019/WHO_releases2019AWaRe_classification_antibiotics/en/

[5] Highest priority Critically Important Antimicrobials: https://www.who.int/foodsafety/cia/en/

2.2 AMR MPTF Results Matrix

Here we present the expected outputs of the 24-month MPTF project for AMR in Tajikistan. Figure 1 gives an overview of the results matrix as originally developed by the Tripartite organizations, which has been adopted and adapted for Tajikistan with specific national outputs. The main outputs and key activities for the Tripartite organizations and possible indicators to monitor the progress made are described in chapter 2 of this proposal.

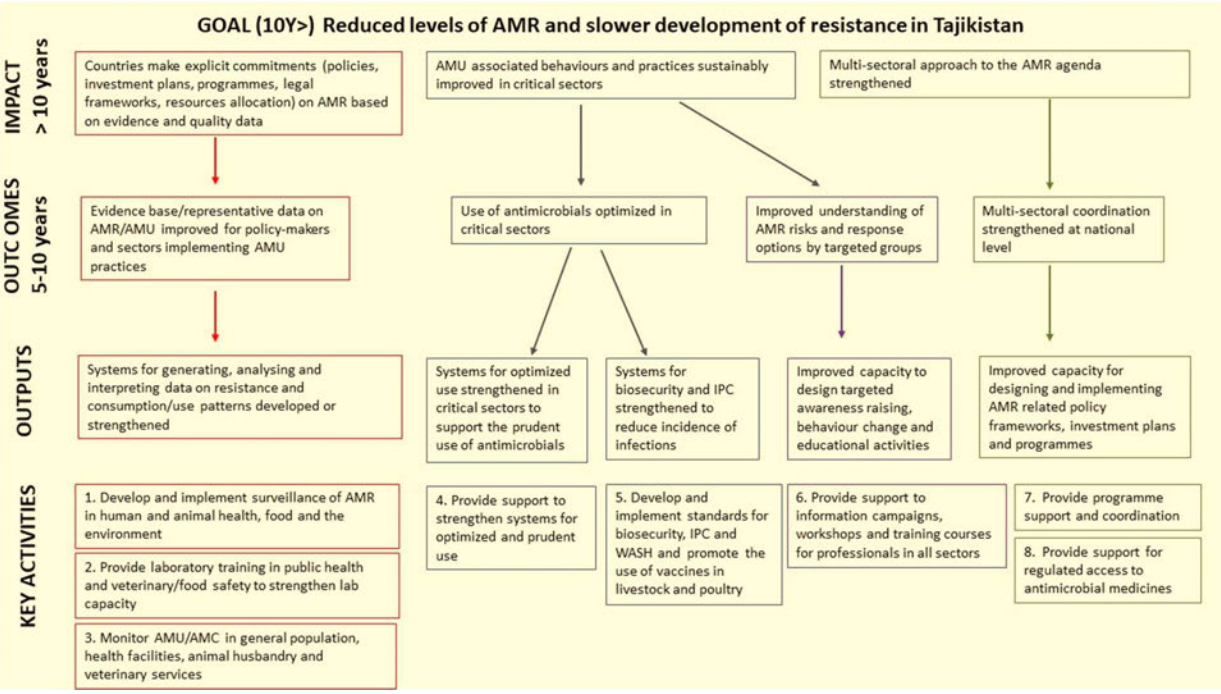

Figure 1: Tripartite results matrix with specific outputs presented for Tajikistan

1.3 Stakeholder mapping

Addressing and reducing AMR and AMU are a priority for the Government within the implementation of sustainable programs in different sectors, as exemplified by the existence of a joint and multidisciplinary NAP. However, the Government lacks the expertise and funds to move some aspects of the NAP forward. Activities conducted under this joint proposal will greatly aid to start processes and to equip national institutions with the required skills and tools. Short-term capacity building and technical assistance for programs like AMR and AMU policy and standards development, surveillance and stewardship, and awareness and education, will help expedite the implementation of the NAP and ensure greater likelihood of achieving the targets and effectively monitoring the indicators that Tajikistan has agreed to. Strengthening the Government's capacity

will ensure change and sustainable improvement in the functioning of the existing system to address AMR in Tajikistan.

The consolidation of WHO's work in human health, and FAO and OIE's work on agriculture and animal health will create synergies in addressing the challenges noted above more effectively and have a greater impact in reducing AMR in Tajikistan. This impact will be achieved by engaging with policy makers, advocating for having the appropriate policies in place, and providing capacity building for AMR and AMU surveillance in both human and animal health as well as improving awareness and knowledge of target groups regarding prudent AMU in human medicine and livestock while ensuring a One Health approach in the project implementation.

The joint project targets all stakeholders involved in human and animal health (healthcare facilities, primary care facilities, hospitals; veterinary services, farm field schools, farmers), food safety (Center for Veterinary Diagnostics and Food safety, National Committee on Food safety), laboratories (food safety and bacteriology) and the environment (water supply and sanitation network, wastewater management, public health surveillance and the environment agency).

The multisectoral coordination group (MCG) that has been established includes a large number of representatives of ministries, academia, organizations and professional associations who will contribute to the implementation of the components of the joint project. Many professionals and stakeholders will work jointly on the implementation of the suggested activities. Below, the contributions of the key executive partners are highlighted.

The **Ministry of Health and Social Protection of the Population** (MoHSPP) is a key partner as it includes several centers and laboratories which are involved with the implementation of the Tripartite project. MoHSPP was also appointed the national focal point for AMR.

The **State Sanitary Epidemiology Surveillance Service and Bacteriological Laboratories** are involved with the following activities: coordination of the joint project, data collection and surveillance of AMR, improving laboratory capacity with respect to sampling and susceptibility testing, providing training and workshops to build capacity with respect to epidemiological analyses and laboratory functions, raising awareness, and in monitoring, evaluation and reporting.

The **State Health and Social Protection Surveillance Service** in the MoHSPP with departments for the control of pharmaceuticals, medical products and medical services is involved in supply provision and control, the control and assessment of the quality of medicines and equipment, the quality of health care service provision and implementation protocols, and in monitoring, evaluation and reporting.

The **Avicenna Tajik State Medical University** with departments of microbiology and infectious disease management collaborate with the clinical hospitals mentioned below to educate medical students (interns and masters) in clinical science, raise awareness on AMR/AMU, conduct research on AMR and review of the medical curriculum. The post-graduate training of physicians is provided by the **Postgraduate Medical Institute** (Epidemiology and Pharmaceutical departments).

The **State Clinical Hospital for Infectious Diseases** and the **State Clinical Paediatric Infectious Diseases Hospital** are key hospitals for treatment of infectious diseases, for developing treatment guidelines and for training students. The hospitals are involved in the following activities: education of medical students and nurses, review of the medical curriculum at the university, raising awareness on AMU and AMR among medical staff, and the development and review of treatment guidelines.

The **State Research Institute for Paediatric and Child Surgery** in the MoHSPP is coordinating Integrated Management of Child Illnesses (IMCI) through primary health care (PHC) facilities across the country focusing on common childhood diseases, diarrhoea, respiratory infections and malnutrition. The institute is involved in raising awareness on AMR/AMU and training of medical nurses and paediatricians at PHC level.

The **Republican Centre for Healthy Lifestyle** in the MoHSPP is implementing its activity plans to promote healthy lifestyles through regional, district and city health centres and collaboration with PHC centres. The Centre is involved in raising awareness on AMR and AMU among the general population and conducting surveys to assess knowledge in different target groups.

The **Republican Clinical and Educational Centre for Family Medicine** in the MoHSPP is involved in the postgraduate training of physicians and nurses to become family practitioners and to raise awareness on AMR and AMU through collaboration with PHC centres.

The **State Research Institute for Preventive Medicine** in the MoHSPP has several (eight) laboratories which are doing research on AMR in food pathogens. The Institute is involved in the monitoring of AMR in food products.

The **Tajikistan Water Supply and Sanitation Network** is established to promote synergy and collaboration across the different partners working in this field. The network is involved in all WASH related activities.

The **Ministry of Agriculture** (MoA) is the central executive body that develops and implements a unified state policy in the field of agriculture, including crop production, animal husbandry and other branches of agricultural production. MoA carries out its activities on the basis of the Constitution of the Republic of Tajikistan in cooperation with other ministries and departments, local executive bodies and other enterprises and institutions.

Within the Ministry of Agriculture, the **Tajik Academy of Agricultural Sciences** includes the Veterinary Research Institute and the Institute of Problems of Biosecurity. They implement state research projects on animal diseases, production of vaccines, biosecurity and safety. The Institute of Livestock Production conducts research on increasing livestock, fishery, poultry, and beekeeping productivity, feeding and genetic improvement.

The **Committee for Food Security (CFS)** under the Government of the Republic of Tajikistan is the central body performing special executive, controlling, and authorizing functions established in the field of veterinary medicine, phytosanitary and plant quarantine, plant protection, seed production and breeding. CFS is, amongst other tasks, responsible for the registration and quality control of imported veterinary drugs, the certification of livestock products and raw materials of animal origin and the implementation of quality control and feed safety of domestic imported therapeutic and prophylactic preparations.

The **National Center for Veterinary Diagnostics and Food Security (CVD) within the CFS,** operates 23 laboratories (1 central, 3 regional and 19 local food safety laboratories). Market food safety laboratories are under supervision of the CVD. There are 75 small-scale food laboratories in markets for food safety and phytosanitary routine checks. The CVD also operates animal health laboratories which are involved in AMR testing of clinical isolates. The CVD provides workshops and training to veterinarians and food security personnel.

The **Tajik Agrarian University (TAU) named after Shirinsho Shotemur** has several faculties, including the faculty of veterinary science and zoo-engineering. Veterinarians and para-veterinarians are being trained at the faculty.

The **Association of Veterinarians of Tajikistan** (TVA) is a public, non-governmental and non-commercial organization, which was established on the initiative of veterinary specialists, with the support of FAO, in 2008 to create a network of public and private veterinarians in Tajikistan and build their capacity in delivering veterinary services on a cost recovery basis. TVA closely cooperates with the CFS and international organizations to address animal health issues. TVA has a training center in Shahrinav district and there are clinics of TVA members and livestock farms around the training center, which provides easy access to conduct practical exercises. TVA is the only professional veterinary organization in Tajikistan with 41 local branches and veterinary associations and it has more than 900 members.

3 Programme strategy

3.1 Overall strategy

The Tripartite project goals and objectives are aligned with the current NAP to support the implementation of specific activities which aim to develop and implement AMR/AMU surveillance in human and animal health, to provide support to establish a regulatory framework on prudent use of antimicrobials and access to antimicrobials, to develop and implement standards for biosecurity, IPC, and WASH programs, and promote the use of vaccines in livestock and poultry, as well as to improve awareness and knowledge through the support of information campaigns and educational activities for key groups. The Tripartite project focusses on all four strategic objectives from the AMR GAP as the needs and gaps are critical across the areas and sectors as identified in the situational analysis. This Tripartite project will provide the technical expertise and support needed by the Government to support the development and implementation of these specific activities during the next 24 months.

The Tripartite project aims to contribute to a reduction of the development of AMR in the country in human and animal health, food production and agricultural sectors and the environment.

At present, there is a severe lack of data on AMR in human and animal health, food production and agricultural sectors and the environment. Monitoring systems need to be developed across sectors to collect reliable information on the presence of AMR in selected key pathogens. Monitoring of resistance requires fully functional microbiological laboratories which are able to perform antimicrobial susceptibility testing (AST) on routinely collected samples from various sources. Surveillance of AMR needs to be established with support from WHO, FAO and OIE. Their respective current data systems, such as the PoP project (WHO), CAESAR network (WHO), ATLASS (FAO), PMP (FAO), and PVS (OIE) can be deployed to facilitate the establishment of surveillance systems across sectors. Developing surveillance systems requires careful multi-annual planning to be able to involve all components of these systems: build laboratory capacity, implement IQA/EQA systems, develop sampling methods and a framework, collect clinical specimens and representative samples, analyse and report the data and train staff (technicians, farmers, epidemiologists, veterinarians and clinical doctors) to carry out these activities.

In a recent study published by the WHO Antimicrobial Medicines Consumption network (WHO AMC), antibiotic use in Tajikistan was among the highest in 12 similar European countries and Kosovo[i]. At present, it is not

possible to provide an accurate estimate of the total consumption of antibiotics. Over-the-counter sales of antimicrobial medicines happens frequently in both the human and veterinary sectors, as well as the use of antimicrobials as growth promotors in animal production. The situation in the livestock sector is further worsened due to the lack of adequate laws and policies and the limited, almost absent, capacity of the Veterinary Services to inspect and enforce any existing legislation. In 2019, the FAO's new tool the Progressive Management Pathway (PMP) was piloted in Tajikistan. The report highlights the absence of any AMR/AMU surveillance. The current situation poses a great challenge to all stakeholders aiming to improve the current use of antibiotics across sectors.

Therefore, a multisectoral and multi-annual approach is required to eventually achieve restricted access to antibiotics through human and veterinary pharmacies and hospitals. Medical doctors and veterinarians need to be trained with respect to the prudent use of antimicrobials and employ/respect the AWaRe categorization of antimicrobials, the CIA list of medicines and the OIE list of antimicrobial agents of veterinary importance. Legislation needs to be implemented (in development since 2018) and enforced to ban over-the-counter sales and to phase out the use of growth promotors in food producing livestock. Training and education of professionals in human and animal health needs to be provided in modules and in curricula focusing on the determinants of AMR development and the risk of AMR. At the same time, raising awareness in the population is important to communicate the risks of AMR, the prudent use of antibiotics and to guide limited and restricted access to antibiotics. Reducing AMU in the livestock sector by restricting antimicrobial dispensing through prescriptions from a licensed veterinarian, poses an additional challenge due to the lack of institutional capacity and weak veterinary services. In the absence of sufficient veterinarians to provide these prescriptions in a timely manner and at a reasonable price, enforcing this important restriction will be nearly impossible. Therefore, prudent use awareness campaigns are critical to encourage voluntary changes in antimicrobial use practices.

Infection Prevention and Control (IPC) measures are lacking in the majority of healthcare facilities (HCF). In some hospitals, IPC programs have been set up with regular training sessions for (para)medical staff members but in many other hospitals, shortages are reported of staff, equipment and protective materials. Water, sanitation and hygiene (WASH) in HCF, particularly in rural areas do not meet the basic requirements. It is estimated that around 30% of HCF have limited access to water supply, which indicates a need to address this significant gap in service provision, especially in rural areas. Access to safe water supply, sanitation and hygiene services need to be integrated in outpatient settings and primary care facilities. It will require a multi-annual approach and extensive efforts to ensure that all HCF are safe and clean and have sustainable access to adequate water supply, sanitation and hygiene services. It is essential to develop a multi-annual approach to build capacity, to restructure hospital systems and create IPC/WASH teams, and to monitor the access to water and sanitation in municipalities and HCF, both in urban and rural areas.

Multiple approaches, in addition to the creation and enforcement of appropriate legislation and polices, should be used to reduce AMU/AMR in the livestock sector. Implementation of improved biosecurity measures and animal husbandry practices, comprehensive vaccination programs, and effective veterinary services will result in less disease occurrence and hence reduce the need for AMU. A critical element of this approach is the establishment of resources and mechanisms to effectively communicate updated, practical information to veterinarians and farmers as it becomes available through global, regional, and national research and surveillance activities. This should go along with robust awareness campaigns on prudent use of antibiotics that are specific to food producers. These campaigns should raise awareness of the potential impacts of antimicrobial resistance on their ability to treat disease in their animals and the cost/benefit of

reducing antibiotic use, as well as the potential impacts of antimicrobial resistance to the health of themselves and their families. However, considering the nature of most livestock production systems in the country, which mainly includes thousands of smallholder farms, the challenge is overwhelming and will require creative and innovative approaches.

All the above activities and programs need to be implemented in a multi-annual workplan and require extensive communication to make people aware of the AMR risks and the changes needed. Awareness and educational activities are needed at all levels, including the general population, farmers, pharmacists (human and veterinary), laboratory technicians, veterinarians, nurses and medical doctors. The development of a comprehensive communication strategy may guide the timing and focus of essential messages to facilitate behavioral change in a sustainable way over time. The Tripartite organizations have developed targeted information campaigns and materials which could be translated for inclusion in a comprehensive communication strategy in Tajikistan, such as hand hygiene (WHO), prudent use of antimicrobials (OIE), biosecurity and good production practices (FAO), and antimicrobial resistance and antimicrobial residues (FAO).

Nevertheless, the political will of Government authorities for the long-term support of this effort both financially and in terms of policy and legislation is pivotal to ensure this ambitious program success.

3.2 Theory of Change

The overall goal of the Tripartite joint project is to provide technical expertise and support to the Government of Tajikistan in efforts to reduce the levels of AMR and to minimize the development of resistance in Tajikistan. The joint project addresses the four main strategic objectives from the GAP/NAP to improve the current situation in the country where critical gaps / needs were identified across sectors and areas; surveillance of AMR and AMU, restricting access to antimicrobials for human and veterinary use, and reducing antimicrobial use by improving human and animal health through IPC, biosecurity, and vaccinations.

The development of robust, credible, sustainable surveillance systems provides the foundation for these efforts by generating ongoing information to: facilitate prioritization of resources, support increased awareness efforts, identify opportunities for interventions, and evaluate the impact of interventions. It is essential that surveillance systems are supported by functional human and veterinary laboratories with access to the necessary training, personnel, and consumables required for testing. In order to meet One-Health objectives, it is also essential that the data generated from human and veterinary laboratories is standardized and harmonized in order to facilitate integrated analysis and reporting. The data management and analysis components of surveillance also need to be supported with access to the necessary training and personnel. A comprehensive integrated One-Health surveillance system captures data on AMR and the use of antimicrobial medicines from different sources and specimens including the general population, healthcare facilities (hospitals, primary and secondary care facilities), veterinary services and animal husbandry, food and the environment. As in other countries, such a comprehensive surveillance system may need to be developed over time. However, within the 24-month period of this project, important foundational elements can be achieved in order to position Tajikistan for continuous surveillance system development and improvement.

From a laboratory perspective, these elements include the establishment of harmonized/standardized protocols for routine specimen isolation and antimicrobial susceptibility testing (with IQA/EQA system in

place) in human and veterinary laboratories, the identification of reliable suppliers of acceptable quality consumables necessary for testing, and the ability to provide reliable cost estimates for ongoing surveillance activities from human resources, equipment, and consumables perspectives. It is important to note that challenges may continue to exist as shortages of materials have been reported. AMR data generated during this project will provide the first baseline information on antimicrobial resistance in Tajikistan. This information will inform awareness campaigns for all stakeholders, but particularly public health and veterinary professionals. This information will also be critical to providing government decision makers with evidence to justify allocation of the resources necessary for ongoing surveillance. It should be noted that inclusion of active surveillance in the agriculture sector is crucial. Passive surveillance provides useful information, however active surveillance results will be more representative of the situation in healthy animals entering the food chain. If comprehensive surveillance is not feasible immediately following the project, the baseline AMR information from both humans and animals will enable the design of strategic, targeted One-Health surveillance until such time as resources are available for a more comprehensive approach. Risks associated with targeted surveillance include both an inability to identify emerging issues in sectors not covered by the targeted surveillance and complacency once targeted surveillance is established that could inhibit further development of the surveillance program.

Efficient data management and reporting processes are also critical elements of sustainable surveillance. The harmonization of data collection and storage for veterinary and human AMR data will be an important outcome of this project and essential for the sustainability of ongoing surveillance activities. One of the challenges of One-Health surveillance that involves multiple government departments, and potentially private stakeholders, is the determination of responsibilities and approval protocols for the release of surveillance data. Addressing these responsibilities and protocols as a component of this project, enables the timely release of future surveillance data. Reporting of surveillance results from this project through the AMR MPTF will provide a template for future surveillance data reporting.

The AMR surveillance activities in this project will also result in the development of linkages and ongoing working relationships between the human and veterinary laboratories, as well as between the laboratories and epidemiological units responsible for data analysis and reporting. These relationships are essential elements that will facilitate AMR surveillance sustainability and other One-Health activities in Tajikistan.

Antimicrobials are widely available in Tajikistan for the general population, doctors, veterinarians and farmers. Pharmacies and vet pharma shops sell antimicrobial medicines without prescription. The ongoing Covid-19 pandemic is likely to deteriorate the AMR situation in the country as an increase in the uncontrolled use of antibiotics has been observed. Access to antimicrobial medicines needs to be restricted through the use of prescriptions in human and animal health in order to reduce the development of resistance through inappropriate and misuse of antimicrobials. This ultimate goal requires the input of the Tripartite organizations as well as support and commitment from the Government of Tajikistan and professional organisations and institutions. It will necessitate legislative and regulatory changes as well as subsequent enforcement activities and communication to create awareness of these changes. Efforts to require antimicrobial prescriptions in veterinary medicine will be complicated by the small number of private veterinarians in Tajikistan. Changes in knowledge and awareness, behaviour (prescription/demand), biosecurity, and hygiene and sanitation measures including animal husbandry practices and IPC measures in healthcare facilities are also needed. The collection of antimicrobial use data through this project at both the national level (through the EURO AMC and OIE data collection) and the farm level (through the pilot project) will provide essential information for the prioritization of activities designed to instigate these changes by identifying areas of most concern with

respect to antimicrobial consumption and use practices. Changes resulting from increased awareness and knowledge may be more timely, effective, and efficient than legislative changes, particularly in the absence of effective enforcement. In order to maximize uptake of awareness and knowledge initiatives on prudent AMU within the farming sector, there should be integration with similar activities related to improved animal production practices in this project. This is particularly important due to the labour-intensive approach that will be required to overcome resistance to change in smallholder livestock farmers for multiple reasons including advanced age, the lack of farming tradition before the fall of the Soviet Union, and the lack of trust in Government and international organizations. As with the AMR surveillance component of this project, the antimicrobial use data collected will provide a baseline that can be used to demonstrate to government decision-makers the importance of allocating resources to AMU surveillance. The pilot project in particular will also be able to provide estimates of the fiscal and human resources required for such surveillance.

Improved hygiene and IPC practices are required in both human health and farm production settings in order to prevent and control disease and therefore reduce the need for antibiotics. An essential element within the human health setting is the increased implementation of WASH in Tajikistan. The focus of the WASH program is of course, on improved health outcomes within HCF and the community through the prevention of disease. However, an increased awareness of stakeholders, including government departments, on the positive impact of WASH on the reduced use of antimicrobials, may justify increased resource allocation to this program. The development of national standards for the essential elements of IPC will support awareness activities regarding these practices. The establishment of standards will also facilitate their inclusion in medical curricula and continuing education activities for medical professionals. Significant challenges with respect to water and sanitation infrastructure improvement in Tajikistan will impact the ability of HCF and the community to implement IPC/WASH on a broad scale.

At the farm level, changes are needed to ensure the implementation of improved biosecurity and animal husbandry practices, which will eventually lead to less disease and therefore reduce the use of antimicrobials. These changes are difficult to achieve, particularly among smallholder livestock owners which make up the majority of farmers in Tajikistan. This difficulty is due to multiple reasons as previously described. Thus, to accomplish this difficult task, a labour-intensive approach is needed, which will use individual support through farmers-field-schools, frequent farm visits and other participatory and bottom-up approaches. This approach will ensure farmers' involvement in the required change, while witnessing its benefits not only to reduced AMU and unnecessary spending on antimicrobials but also to their overall income and improved livelihoods and food security. Increasing awareness amongst farmers of the potential impact of AMR and antimicrobial residues on the health of themselves, their families, and their communities, may also drive changes in practices.

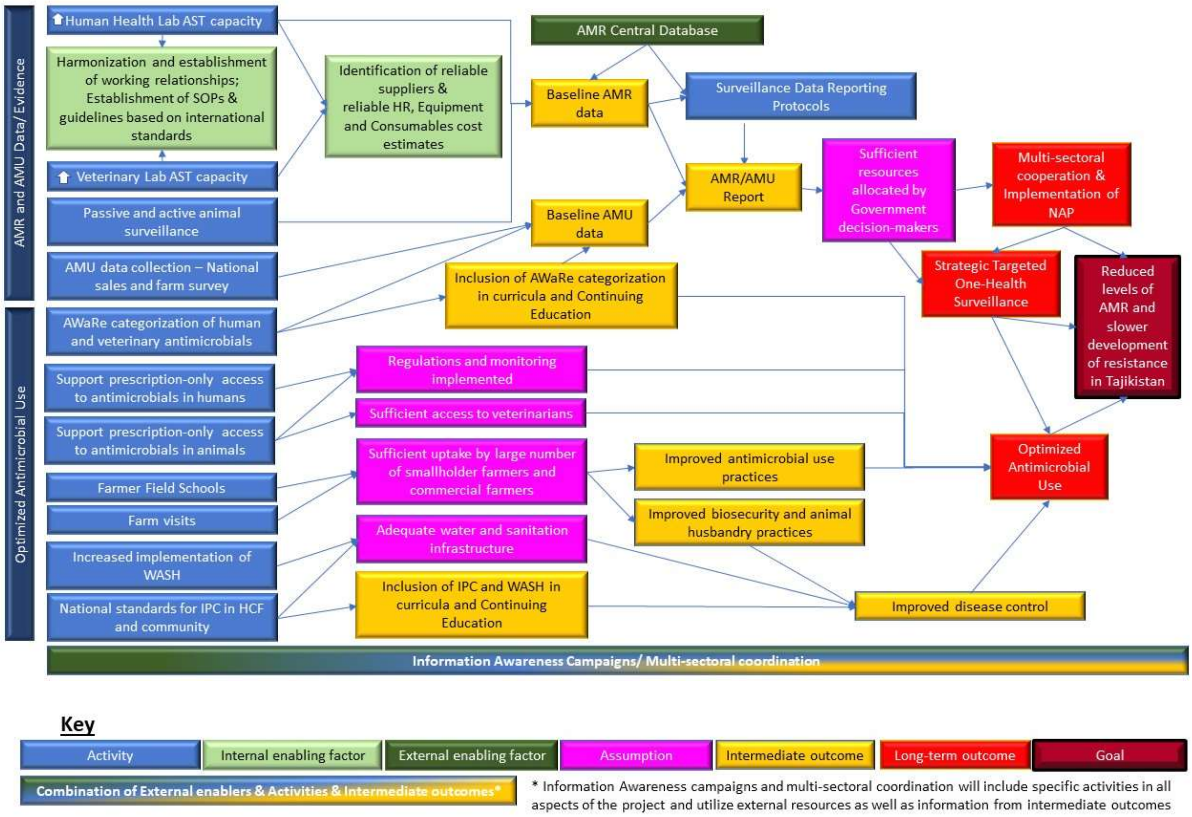

Figure 2: Theory of Change

3.3 Project outputs and expected results

Note that the project outputs and expected results are structured according to the Tajik results matrix, presented in section 1.2. Planned activities are outlined as the most urgent ones in the short timeline of this joint project. Indicators are suggested in line with the guidelines from the MPTF AMR secretariat, i.e. standard indicator. A few national indicators are added to report on the progress of the implementation of specific activities.

A robust AMR surveillance system needs to be designed and implemented, and laboratory functions strengthened to be able to produce representative and valid results of good and comparable quality across the human and agriculture sectors in order to understand and improve the situation with respect to AMR in Tajikistan. A series of activities is needed to begin to develop these surveillance systems across sectors which can be partially structured within ongoing programs through WHO, OIE, and FAO, where extensive experience has been built over time. This includes the CAESAR network, the WHO AMC network, the OIE data collection of antimicrobial agents intended for use in animals, and ATLASS project, respectively. Existing resources such as "Monitoring and surveillance of antimicrobial resistance in bacteria from healthy food animals intended for consumption"[6] (FAO) would be useful and can be adapted for Tajikistan.

[6] http://www.fao.org/3/ca6897en/ca6897en.pdf

Restricting access to antimicrobials in human and animal health and ensuring the appropriate and prudent use of antimicrobials are important cornerstones in the Tajik national strategy to reduce AMR. It requires engagement and commitment at the highest political levels in the country and it needs to be addressed in multilevel activities across sectors. A legal framework is needed to support restricted access to critically important antimicrobials in human and animal health.

Output 1. Systems for generating, analysing and interpreting data on resistance and consumption/use patterns developed or strengthened

At present, as part of the ongoing AMR NAP 2018-2022 activities and Proof of Principles (PoP) project to develop national AMR surveillance in the human sector, support is provided to bacteriological laboratories in four hospitals in the capital Dushanbe to implement EUCAST standards including capacity building (training) of the national coordination team, laboratory staff, clinicians and nurses and provision of laboratory supplies for the identification of pathogens and to perform AST. Other activities include:

- Development of an AMR central database in MoHSPP in collaboration with the WHO Collaborating Centre on AMR Surveillance (situated in RIVM, Netherlands);
- Eight AST performing laboratories currently participate in the WHO EQA system;
- Four laboratories from the State Public Health Surveillance Centres currently report data to the EURO CAESAR network.

In 2019, the ATLASS mission and review of the national AMR surveillance system in the food and agriculture sectors in Tajikistan was reported. The FAO reported that Tajikistan is at stage 1 of the ATLASS Progressive Improvement Pathway, corresponding to the absence of a national AMR surveillance system in the food and agriculture sectors. Recommendations included both to strengthen the capacity for the reference laboratory in AMR for the food and agriculture sectors and to identify an epidemiology unit able to collect and analyze the AMR data.

In 2011-2016, a monitoring system was in place to track AMR in foodborne pathogens, such as *Campylobacter* and *E.* coli. Laboratory guidelines for AST were developed and training was provided at the regional and national level for microbiologists and epidemiologists in human and animal health sectors. This training also promoted the use of EUCAST standards.

Planned key activities to scale up the implementation include the following:

1. <u>Develop and implement surveillance of AMR in human and animal health, food and the environment.</u>
    - Expand the existing AMR surveillance from four to five bacteriological laboratories in hospitals, including one laboratory outside the capital area;
    - Increase the number of laboratories in the WHO EQA system from eight to ten (five in hospitals and five in state public health surveillance centres);
    - Increase the number of laboratories participating in the CAESAR-network from four to ten, including Dushanbe and one other region;
    - Establish linkages with the AMR Central Database Project in order to ensure that the inclusion of AST from veterinary isolates is supported;
    - Raise awareness among veterinarians and farmers on the importance and feasibility of passive and active surveillance to understand AMR in the livestock sector;
    - Establishment a National Reference Laboratory for the food and veterinary sector;

- Establishment of linkages and procedures between the National Reference Laboratory for the food and veterinary sector and state/regional/local laboratories to facilitate the ongoing transfer of relevant isolates to the National Reference Laboratory;
- Establish basic passive surveillance for samples originating from sick animals (poultry and cattle) through the forwarding of samples and/or isolates to the national veterinary laboratory for AST testing;
- Design and develop practical active surveillance activities in animals at the farm level, focused on specific livestock species and/or regions and based on logistical (for sample collection) and laboratory (for sample isolation and AST testing) capacities. Optimize synergies with existing animal health/vaccination/regulatory initiatives, particularly those that include farm visits.
- Based on the developed design, initiate active surveillance through visits to farms and manure sampling in year two.

2. Provide laboratory training in public health and veterinary/food safety to strengthen laboratory capacity.
    - Build on previous capacity building initiatives and focus on establishing integrated surveillance of ESBL producing E. coli in humans, animal, food and the environment consistent with the Tricycle protocols
    - Provide additional training on AST testing for central and regional veterinary labs;
    - Support the use of developed laboratory AST guidelines, the use of Standard Operating Procedures (SOPs) and Quality Assurance programs for human health and veterinary bacteriological laboratories based on international protocols.

The following indicators may be used to monitor the progress:

- Standard indicator: National surveillance system for AMR supported in human and animal health[7] and agriculture with annual integrated report(s) on AMR;
- Standard indicator: The number and percentage of laboratories with capacity to perform AST and bacterial isolation and identification according to international standards, such as EUCAST, VETCAST.

Tajikistan participates in EURO AMC network meetings and contributes data to the annual AMC report. In 2019, at the onset of the COVID-19 pandemic, a survey was conducted to collect data on the supply of antimicrobial medicines in community pharmacies in Tajikistan and 75 pharmacies were included; results are not yet available. In 2020, FAO is planning a survey on the consumption of antimicrobials in livestock and poultry. OIE's pathway veterinary services (PVS) was conducted and reported in 2017 and Tajikistan participates in the annual OIE data collection on antimicrobial agents intended for animal use. The PVS Pathway provides a robust mechanism for the continuous improvement of national Veterinary Services, through a staged approach using a set of proven tools and methods to evaluate, plan, cost and support the strengthening of national Veterinary Services.

3. Monitor AMU/AMC in general population, health facilities, animal husbandry and veterinary services.
    - Continue participation in EURO AMC network and improve data submission by including reports from the regional levels;

[7] at a later stage (after this joint project) to be extended to plant health, food and the environment;

- Start data collection on AMU in five hospitals and five PHCs in Dushanbe and one other region;
- Launch of sixth OIE data collection on antimicrobials intended for use in animals;
- Design and develop a basic AMC surveillance system for livestock and poultry antimicrobials based on identification of potential/existing practical and reliable data sources within the antimicrobial distribution system in Tajikistan;
- Implement the initial activities identified in the AMC surveillance system design, with a focus in one region (to be determined).

The following indicators may be used to monitor the progress:

- Standard indicator: National system for monitoring AMC/AMU supported in human and animal health[7] and agriculture with annual integrated report(s) on AMC/AMU.

Medical doctors and veterinarians need to be trained with respect to the prudent use of antimicrobials and employ/respect the AWaRe categorization of antimicrobials, the CIA list of medicines and the OIE list of antimicrobial agents of veterinary importance. Training and education of farmers and veterinarians needs to be provided in modules and in curricula focusing on the determinants of AMR development and the risk of AMR. At the same time, raising awareness is important to communicate the risks of AMR, the prudent use of antibiotics and to guide limited and restricted access to antibiotics. Increased awareness of prudent use and animal husbandry practices are critical to encourage voluntary changes in behaviour.

Output 2. Systems for optimized use strengthened in critical sectors to support the prudent use of antimicrobial medicines.

Planned key activities:

4. Provide support to strengthen systems for optimized and prudent use
    - Review and update the national Essential Medicines List and international classifications of antimicrobial medicines to be used in human and animal health and include the AWaRe categorization to inform treatment guidelines;
    - Improve prudent AMU and good husbandry practices by farmers and veterinarians by scaling up the existing program (Russian funded project) using awareness documents, farmer field schools and farm expert visits;
    - Provide technical support for the adoption of Codex Alimentarius maximum residue limits for antimicrobials in food.

The following indicators may be used to monitor the progress:

- Standard indicator: Guidelines for responsible and prudent use of antimicrobials based on international standards are developed or revised;
- Use the AWaRe classification and the OIE list of antimicrobial agents of veterinary importance for managing the supply of antibiotics for healthcare and veterinary services.

Good management systems, effective infection prevention and control programs, provision of safe and continuous water supply and sanitation services, practicing safe hygiene practices in the community, HCFs and other critical settings, and best practices in animal husbandry result in less infections needing treatment with antibiotics. In order to achieve this, it is essential to ensure availability and access to a safe water supply and

sanitation services in all HCFs across the country, including outpatient settings and primary care facilities, both in urban and rural areas. Internal and external biosecurity measures on farms are important in order to limit the movement of diseases between and within farms. The promotion of improved overall animal husbandry and hygiene practices in farms is also important. Raising awareness and facilitating change may be a challenge with thousands of backyard farms across the country.

The Childhood immunization schedule shows good coverage (>95%) in Tajikistan, as reported to UNICEF, but coverage of vaccination in food producing animal species is much lower and is estimated to be only 10 to 20%. Vaccination in animal health needs to be promoted intensively to increase coverage over time. Vaccination of livestock and poultry for eight diseases[8] is in principle covered by the national budget and is delivered by veterinarians employed by the district state services. However, this vaccination system is severely hampered by lack of resources and a lack of available veterinarians.

Output 3. Systems for biosecurity and IPC strengthened to reduce the incidence of infections.

The Law on drinking water and sanitation has been developed and was endorsed in 2018. The national policies and standards addressing WASH in HCF have been reviewed recently, revealing gaps and areas for improvement. The WHO water and sanitation improvement tool (WASH FIT) has been introduced in a pilot HCF as a basis for scale up in the country and a national representative survey to assess the situation of WASH in HCF was initiated in 2019. Reducing AMU/AMR in the livestock sector can be achieved by using multiple approaches in addition to enforcement of appropriate legislation and policies. Implementation of good animal husbandry practices, including adequate biosecurity measures, will eventually lead to less disease occurrence and hence reduce the need for AMU. Existing resources that may be adapted for Tajikistan include "Prudent and efficient use of antimicrobials in pigs and poultry" (FAO)[9].

Effective communication strategies such as farm-field-schools and other participatory approaches, will need to be developed in order to provide information on improved practices that results in a significant uptake in the livestock sector. Efforts to increase the number of private veterinarians are also needed in order to provide appropriate animal health and biosecurity information at the individual farm level.

Planned key activities:

5. Develop and implement standards for biosecurity, IPC and WASH:
    - Integrate WASH and IPC programs in policies, standards and activities towards improving the quality of healthcare services;
    - Support the development of national standards for IPC core components in HCF, including promotion of good hygiene practices and provision of adequate WASH services in HCF and community;
    - Support adherence to the Law on national drinking water and sanitation;

[8] Anthrax, tuberculosis, brucellosis, rabies, sheep and goat pox, peste des petits ruminants (PPR), Foot and mouth disease, Newcastle disease

[9] Magnusson, U.; Sternberg, S.; Eklund, G.; Rozstalnyy, A. Prudent and efficient use of antimicrobials in pigs and poultry. FAO. http://www.fao.org/documents/card/en/c/ca6729en/ (English), http://www.fao.org/publications/card/en/c/CA6729RU (Russian)

- Support the implementation of good biosecurity, husbandry and management practices in priority livestock production systems aiming at reducing AMU;
- Support to strengthen Tajik capacity to control OIE-listed diseases by translating and implementing FAO guidelines for vaccinators;
- Evaluate current systems of disease recording and design a practical surveillance program for disease incidence in priority livestock species;
- Implement pilot of Disease surveillance program in one region (Oblast).

The following indicators may be used to monitor the progress:

- Standard indicator: National operational plan to promote and support hygiene and good production practice in priority animal production sectors; (monitoring: annual report on vaccination coverage for the 8 diseases covered by the national budget);
- Standard indicator: National IPC plan developed or strengthened in line with the IPC core components and WASH;

National campaigns on the risk of AMR have been developed by several countries. They promote the prudent use of antibiotics, as well as hygiene methods and animal production practices to prevent infection and disease. Tripartite organizations have developed campaign materials which could be adapted for national campaigns, such as hand hygiene (WHO), Five keys to safer food (WHO), prudent use of antibiotics (OIE), and AMR/antimicrobial residue (FAO). The establishment of the World Antibiotic Awareness Week (WAAW) has fueled the number of campaigns globally and has increased the number of high-level meetings on AMR to raise political awareness and commitment. The WHO/UNICEF global initiative "Hand hygiene for all" [10] supports the implementation of WHO's global recommendations on hand hygiene to prevent and control Covid-19 and other infectious diseases. WHO has hosted the Hand Hygiene Day for the past 10+ years on 5 May[11].

Training and education of professionals in human and animal health needs to be provided in modules and in curricula focusing on the determinants of AMR development, the One-Health nature of the risk of AMR, and prudent use guidelines. At the same time, raising awareness in the population is important in order to communicate the risks of AMR, the prudent use of antibiotics in human and veterinary medicine, and to explain the limited and restricted access to antibiotics in human and veterinary pharmacies.

Output 4. Improved capacity to design targeted awareness raising, behaviour change and educational activities.

In past years, Tajikistan has participated in WAAW with press-conferences at national and intersectoral meetings and events (mainly in the capital), supported by FAO and OIE. Newspaper articles have also been produced during WAAW annually. In addition, FAO supported annual meetings with veterinarians and the OIE

[10] The WHO/UNICEF global initiative for 'hand hygiene for all' Hand hygiene for all, WHO and UNICEF, 2020 https://www.who.int/water_sanitation_health/publications/200626-unicef-who-hand-hygiene-global-initiative.pdf?ua=1

[11] https://www.who.int/news-room/events/detail/2020/05/05/default-calendar/hand-hygiene-day

produced a set of communication materials (Trello Board) and a series of videos for animal health stakeholders to increase awareness of the risk of AMR.

Planned activities:

6. Provide support to information campaigns, workshops and training courses for professionals in all sectors
    - Continue to support awareness raising campaigns targeting different audiences to promote prudent use of antimicrobials;
    - Establish monthly broadcasting of AMR/AMU information through TV and radio programs. These should target the general population as well as livestock producers;
    - Promote behaviour change on good hand hygiene in the community using already developed materials from WHO;
    - Promote good food hygiene practices (5 keys to safer food) using already developed materials from FAO, OIE and WHO;
    - Promote good animal production and prudent antimicrobial use practices using materials developed by FAO and OIE and translated into Tajik;
    - Establish communication strategies for livestock producers utilizing trusted community representatives;
    - Establish Farmer Field Schools to efficiently and effectively promote good animal husbandry and good animal production practices, in order to improve animal health and facilitate prudent antimicrobial use;
    - Provide training workshops for professional education (as part of curriculum and continuing education) in all critical sectors involved in human and animal health on prudent use of antimicrobials and the risk of AMR. Develop a monitoring system to evaluate the contents of the courses and to assess the understanding of the participants, including medical and veterinary faculty and students, medical and veterinary practitioners, and medical and veterinary pharmacists.

The following indicators may be used to monitor the progress:

- Communication strategy developed to support improved capability for communication and behaviour change initiatives on AMR/AMU.
- The assessment of training, professional and educational events and courses on AMR/AMU in each sector provided.

Engagement of all sectors is crucial for the planning and implementation of the NAP. Key stakeholders include human health, animal (terrestrial and aquatic) health, environment, food, plant food production and plant health. A clear representation of the key stakeholders related to AMR/AMU should be ensured in the intersectoral One Health approach with a determined lead Ministry. NAP needs to include an operational plan with clear responsibilities, associated budgets and timelines and milestones, and needs to be reviewed with respect to progress and execution of the budgets.

Tajikistan has been supported by WHO, FAO and OIE over several years to develop and endorse the NAP AMR 2018-2022. National focal points have been nominated from multiple sectors and they are involved in the MCG which will meet monthly to monitor NAP implementation. It should be noted that additional representation from the agricultural, veterinary, and private sectors is needed on the MCG in order to facilitate

a One-Health approach. MoHSPP is the lead ministry in Tajikistan and provides the chair of the MCG; the Committee for Food Safety provides the co-chair of MCG.

Since 2018, the Law on Pharmaceuticals and Medical Products has been reviewed and revised to include a ban on the sale of antibiotics for human consumption without prescription. In 2019, a review of legislation relevant for the food and agriculture sectors for AMR/AMU has been conducted. FAO/OIE/WHO will conduct a legislation mission to complete the tripartite legal assessment and to identify priorities for legal reform in the country. FAO/OIE will support the drafting of legislation on Veterinary Medical Products (VMP) addressing the existing gaps and complement the legal work with guidance, trainings on the system of control on VMPs (sales points, labelling, import controls, etc).

Output 5. Improved capacity for designing and implementing AMR related policy frameworks, investment plans and programmes

Planned key activities:

7. Provide programme support and coordination:
    - Develop and submit the MPTF proposal on behalf of the Tripartite organisations;
    - Support the development and implementation of a detailed workplan for the joint project in collaboration with FAO and OIE (timeline and implementing partners);
    - Support synergies, harmonization, and coordination across the five outputs identified in the joint project, as well as among individual contractors, and with existing activities within Tajikistan;
    - Support the development of an operational plan to review the NAP implementation and budget execution;
    - Establish a mechanism to coordinate the actions across ministries on addressing AMR with a dedicated secretariat and adequate funding to support MCG operations;
    - Support the inclusion of additional agriculture and veterinary stakeholders in the MCG, including private sector representatives.

The following indicators may be used to monitor the progress:

- Standard indicator: Full functional MCG established with secretariat and representatives from all sectors (with monthly meetings);
- Standard indicator: NAP with the estimation of costs of the implementation by year has been established or reviewed.

8. Provide support for regulated access to antimicrobial medicines:
    - Support inclusion of ban of antibiotics sale for human consumption without prescription through regulations and monitoring mechanisms in the national Law on Pharmaceuticals and Medical Products;
    - Complete the tripartite legal assessment and to identify priorities for legal reform in the country, support the drafting of legislation on VMPs and complement the legal work with guidance, trainings on the system of control on VMPs.

The following indicators may be used to monitor the progress:

- Standard indicator: Regulatory framework for antimicrobial medicines for critical sectors is developed, revised or updated.

3.4 Budget, sustainability and value for money

Addressing and reducing AMR and AMU are a priority for the Government of Tajikistan with the implementation of sustainable programs in different sectors, as outlined in the intersectoral NAP. However, at present the required expertise and funds are severely lacking to move the implementation of the NAP forward. Short-term capacity building and technical assistance for activities such as AMR/AMU standards development, surveillance and stewardship, awareness and education across all sectors, will help to kick-start and aid the implementation of the NAP.

The Tripartite organizations will collaborate and collectively contribute to the planned activities in a truly One-Health approach. The combining of global mandates and strengthening of the ongoing WHO work in human health, and FAO and OIE work in the agriculture and animal health sectors will create synergies in tackling the existing challenges to address and reduce AMR/AMU more effectively. The list of specific activities planned in this joint proposal will greatly help to start the processes and to equip national institutions across Government departments – as outlined in section 1.3 of this proposal - with the required resources and tools. Strengthening the Government's capacity will ensure **sustainable development and ultimate implementation of systems** to address AMU and AMR in Tajikistan.

Considering the One-Health nature of AMR and similarities with respect to issues regarding the design and implementation of surveillance, control of antimicrobials in the human and agricultural sectors, and improved biosecurity and infection control practices in Tajikistan, a Tripartite approach is logical and economically beneficial. Connections and coordination between initiatives in laboratory training, laboratory and reporting SOPs, database development, and awareness campaigns in the human health and agri-food sector will avoid duplication of effort and minimize costs. In addition, combining the purchase of supplies for key activities in human health and the agri-food sector, will positively impact costs through higher volume purchases. Online capacity building training, eventual study tours to understand best practices, post-tender adaptation and replication, and selection of cost-effective commercial proposals under UN Rules and regulations will be used to contain costs. As well, the use of government venues, available equipment and resources for project-related events, when possible, will increase the cost-effectiveness of the project. Dedicated staff and consultants will be used to support project implementation via UN standard procedures for hiring consultants.

Substantial resources have been developed by each of the Tripartite agencies to provide guidance and communication materials with respect to AMR and AMU, in low-to-middle income countries. The participation of all three agencies will ensure that these resources are fully utilized in this project. This will improve both the effectiveness and efficiency of the project. The availability and participation of Tripartite agency staff in Tajikistan and neighboring countries will ensure that key activities and implementation plans within this project are appropriate for the situation in Tajikistan and therefore more likely to be effective and sustainable.

The Tripartite agencies will use their mandate in Tajikistan to support the government in the implementation of the planned outputs and achieve the described objectives.

The project aims to strengthen the capacity of all relevant Tajikistan government sectors to implement the AMR NAP in an equitable manner. This will be achieved through tripartite collaboration, advocacy, joint education, and sharing of knowledge, as well as through the use of evidence-based solutions and best

practices. By synchronizing efforts in the human and agriculture sectors, a One-Health approach and integrated reporting will be possible. The networks and working relationships that will be developed between the different departments in the Government of Tajikistan, as a result of this project will facilitate an ongoing One-Health approach to AMR and potentially other One-Health issues. These impacts both the effectiveness and sustainability of the priority areas identified in the project. It will also provide an opportunity for the country to implement, upon request, new methods and systems to tackle growing AMR identified through tripartite cooperation in both human health and agriculture. The design and implementation of the key surveillance activities in this project will provide information to the Government of Tajikistan to guide the strategic and effective use of resources to address AMR and AMU after this project has been completed.

Active involvement of the different sectors and stakeholders at the national, sub-national, and local levels will create connections, working relationships, and awareness which will provide the basis for the sustainability of the project. Avoiding paying salaries to officials and local government staff will develop the systems' capacity rather than increasing the personal interest of the nationals.

3.5 Partnership and stakeholder engagement

The joint project targets all key stakeholders involved in human and animal health (health facilities, primary care facilities, hospitals; veterinary services, farm field schools, farmers), food safety (Center for Veterinary Diagnostics and Food safety, National Committee on Food safety), laboratories (food safety and bacteriology) and the environment (water supply and sanitation network). The MCG has been established by the MoHSPP and includes key stakeholders from several sectors.

Making use of the competitive advantages related to WHO's work in human health, FAO's and OIE's work on agriculture and animal health will create synergies in tackling the existing challenges to reduce AMR/AMU more effectively. The impact on reducing AMR in Tajikistan will be achieved by engaging with policy makers and advocating for the appropriate policies. High-level politicians are already involved in the governance structure of the MCG and the directors of the WHO/FAO country offices have regular meetings with the respective ministers and their civil servants.

3.6 Programme implementation in the light of Covid-19

Meetings and workshops planned for several activities are hampered by the COVID-19 pandemic due to restricted travel and requirements for physical distancing. The current proposal outlines the joint project as the Tripartite organizations would ideally implement it in a 24-month timeframe. Until further notice, virtual meetings will replace physical meetings. Training workshops and laboratory sessions need to be rescheduled in larger classrooms or conducted virtually, if possible. Travel of International experts for training sessions may be impacted. Due to the current public health emergency situation, staff may be fully occupied with the control of COVID-19 and may have been transferred from their section or department. At present, there is no overview of these transfers as the pandemic is ongoing and affecting the healthcare systems severely. Travel within Tajikistan required for awareness campaigns, HCF activities, sample collection, and establishment of

Farmer Field Schools may be impacted by COVID travel restrictions and/or COVID concerns in local communities.

3.7 Communication, Advocacy and Lesson Learning

Communication and raising awareness are important parts of the joint project as not only the general population but also professionals need to become more aware of and learn more about the risks related to AMR. The development and endorsement of a comprehensive communication and training strategy on AMR/AMU is a key instrument to plan and align communications with respect to the topic. Different channels need to be explored and used for targeted communication across audiences such as social media, TV, radio campaigns, newspaper articles, and posters. High-level meetings can be organized in conjunction with WAAW through WHO/FAO country offices. Workshops and curriculum resources can be provided to universities and farm field schools. Engaging highly respected individuals within each sector, or possibly a celebrity to communicate the key messages may increase their impact.

Within the development of the communication and learning strategy, the restricted access to antimicrobial medicines and importance of prudent use practices should be highlighted. Demonstrating the severe consequences of resistant untreatable infections by finding existing examples or stories may help to convey the importance of the message.

4 Programme implementation

4.1 Governance and implementation arrangements

The Government of Tajikistan is supporting the MPTF project proposal. A meeting of the MCG takes place every fourth Friday of the month which is essential to ensure a smooth implementation of the project with support of the Tripartite.

Tajikistan has endorsed a new Health strategy and action plan for 2020-2030 which is in line with SDG3. The joint project will complement the need of the Government to establish surveillance systems and improve the capacity to implement the national programs across sectors.

Currently, there are no other organizations supporting the AMR programs in this low-income country. This joint project is appropriate and avoids duplication because of the transparent cooperation of the Tripartite with the MCG and the Government.

The Tajikistan MPTF Team consists of 27 stakeholders working in the different sectors of the Republic of Tajikistan. The Chair of the Multisectoral Coordination Group is the Deputy Minister of Health and Social Protection of Population (MoHSPP). The co-chair is Deputy of the Committee for Food Security (CFS) under the Government of Tajikistan. The MCG was established to coordinate the process of implementation, monitoring, and reporting of the NAP to tackle AMR in 2018-2022 in Tajikistan.

The NAP has a log frame describing the roles and responsibilities of the different institutions across sectors with respect to the implementation of activities as per agreement between sectors and stakeholders based on their institutional functions. The MoHSPP and its institutions are responsible for the implementation, monitoring, and reporting of the public health aspects of the NAP. The Ministry of Agriculture (MoA) and its institutions are responsible for the implementation of agriculture related activities of the NAP in the country. The Committee for Food Security (CFS) under the Government of the Republic of Tajikistan and its institutions are responsible for implementation of NAP in veterinary and phytosanitary sectors including AMR.

Strengthening the multisectoral collaboration and data sharing is one of the priorities for this project. It is critical that data generated from the human and agriculture sectors is compatible and comparable since AMR is not only a public health issue. Therefore, building partnerships and working towards sustainability of these efforts is one of the key objectives. WHO will provide technical assistance to set and implement international health standards and guidelines promoting rational use of antimicrobials, management of common infections, promotion of IPC, food safety, and WASH. Technical support will be provided to establish AMR surveillance systems that will collect data and analyse the situation. The implementation of the project will be supported by technical officers from WHO Regional and Country Office.

FAO has a country office in Tajikistan with ongoing projects, which are being implemented in agriculture, food safety, environment protection, water management and other sectors. The project activities will be coordinated with implementation of the current ongoing project GCP/RER/057/RUS “Reducing the advance of Antimicrobial Resistance (AMR) in food and agriculture”. The implementation of the project will be supported by technical officers from FAO Regional and Country Offices and Codex Alimentarius. FAO will recruit an international expert for at least 120 days to guide and ensure the sound implementation of the project.

OIE will support the implementation of the project from its regional office in Kazakhstan. OIE will provide technical support to review the legislative framework on AMC/AMU and in data collection through ongoing annual surveys on AMC. OIE will provide technical assistance to set and implement health standards and guidelines promoting rationale use of antimicrobials in animal health, biosecurity and good animal husbandry.

The MoHSPP has nominated national focal points for AMR and AMU who are actively participating in the coordination meetings of the MCG. They also maintain close communication and collaboration with the MoA and CFS where appropriate. This joint project will recruit one National Project Coordinator who will coordinate and manage the joint project implementation and will meet with the NFP and MCG on a weekly or monthly basis. Sample terms of reference have been provided by the MPTF HQ secretariat. Terms of reference for the national project coordinator need to be agreed on by the three organizations.

Activities to strengthen the governance of the joint project include the following:

- Matrix with the list of activities with responsible institutions and departments; responsible departments will be defined as well as other contributing institutions.
- Governance structure for the joint project will include representatives from Tripartite organisations, ministries, implementing institutions, an advisory board, and the MCG, with a clear command and reporting structure.
- A set schedule for meetings and briefings, at the technical level and at the political level with the engagement of WHO/FAO country offices. Meetings can take place at the ministries MoHSPP or MoA or at WHO/FAO offices.

4.2 Monitoring, reporting and evaluation

Reporting on the AMR MPTF will be results-oriented, and evidence based. Each Tripartite organisation will provide the Convening/Lead Agent with the following narrative reports prepared in accordance with instructions and templates developed by the Tripartite Joint Secretariat on AMR:

- Annual narrative progress reports, to be provided no later than three (3) months (31 March) after the end of the calendar year, and must include the results matrix, updated risk log, and anticipated activities and results for the next 12-month funding period;
- Mid-term progress review report to be submitted halfway through the implementation of the Joint Programme[12] (depending on timing this may merge with the annual report);
- Final consolidated narrative report, after the completion of the joint Tripartite programme, to be provided no later than three (3) months after the operational closure of the activities of the Joint Tripartite programme.

As a minimum, the Tripartite Joint Secretariat on AMR will prepare and report on the activities funded through the AMR MPTF on a 6-month monitoring basis. Additional insights (such as policy papers, value for money analysis, case studies, infographics, blogs) might need to be provided, per request of the Tripartite joint Secretariat on AMR. The joint Tripartite programme will allocate resources for monitoring and evaluation in the budget.

Data for all indicators of the results framework will be shared with the Joint Tripartite Secretariat on AMR on a regular basis, in order to allow the Fund Secretariat to aggregate results at the global level and integrate findings into reporting on progress of the AMR MPTF.

It will be required to include information on complementary funding received from other sources for the activities supported by AMR MPTF, including in-kind contributions and/or South-South Cooperation initiatives, in the reporting done throughout the year.

Headquarters' level shall provide the Administrative Agent (UNDP MPTF Office) with the following statements and reports prepared in accordance with its accounting and reporting procedures, consolidate the financial reports, as follows *(more information on the reporting will be provided at a later time):*

- Annual financial reports as of 31 December each year with respect to the funds disbursed to it from the AMR MPTF, to be provided no later than four months after the end of the applicable reporting period; and
- A final financial report, after the completion of the activities financed by the AMR MPTF and including the final year of the activities, to be provided no later than 30 April of the year following the operational closing of the project activities.

In addition, regular updates on financial delivery might need to be provided, per request of the Fund Secretariat.

The joint Tripartite programme may be subjected to a Programme Review (methodology to be determined) or joint final independent evaluation (JFEI) by the United Nations Evaluation Group's (UNEG) Norms and

[12] This will be the basis for release of funding for the second year of implementation

Standards for Evaluation in the UN System, using the guidance on Joint Evaluation and relevant UNDG guidance on evaluations. Evaluation results will be disseminated amongst government, development partners, civil society, and other stakeholders. A joint management response will be produced upon completion of the evaluation process and made publicly available on the evaluation platforms or similar of PUNOs.

4.3 Accountability, financial management, and public disclosure

The AMR MPTF will be using a pass-through fund management modality where the UNDP Multi-Partner Trust Fund Office will act as the Administrative Agent (AA) under which the funds will be channelled for the MPTF through the AA. Each Tripartite organisation receiving funds through the pass-through has signed a standard Memorandum of Understanding with the AA.

Each Tripartite organisation shall assume full programmatic and financial accountability for the funds disbursed to it by the AA of the AMR MPTF (Multi-Partner Trust Fund Office). Such funds will be administered by each Tripartite Agency, in accordance with its own regulations, rules, directives and procedures. Each Tripartite agency shall establish a separate ledger account for the receipt and administration of the funds disbursed to it by the AA.

Indirect costs of the Tripartite Organizations recovered through programme support costs will be 7%. All other costs incurred by each Tripartite agency in carrying out the activities for which it is responsible under the Fund will be recovered as direct costs.

Funding by the AMR MPTF will be provided on annual basis, upon successful performance of the programme.

Procedures on financial transfers, extensions, financial and operational closure, and related administrative issues are stipulated in the Operational Guidance of the AMR MPTF.

Each Tripartite organisation will take appropriate measures to publicize the AMR MPTF and give due credit to the other Tripartite agencies. All related publicity material, official notices, reports and publications, provided to the press or Fund beneficiaries, will acknowledge the role of the host Government, donors, tripartite partners, the Administrative Agent, and any other relevant entities. In particular, the AA will include and ensure due recognition of the role of each Participating Organization and partners in all external communications related to the AMR MPTF.

***Legal Clause:** Please indicate if a UNDAF or UNSDCF containing Legal Context information exists currently in the country, if yes, please provide a copy; if no, please include FAO Legal Provisions as appendices (Appendices 2.1 and 2.2) to the document before signing with the Government.

Yes ☐ xx

No ☐

[i] Versporten A, Bolokhovets G, Ghazaryan L, Abilova V, Pyshnik G, Spasojevic T, Korinteli I, Raka L, Kambaralieva B, Cizmovic L, Carp A, Radonjic V, Maqsudova N, Demet Celik H, Payerl-Pal M, Bak Pedersen H, Sautenkova N, Goossens H, on behalf of the WHO/Europe-ESAC Project Group. Antibiotic use in eastern Europe: a cross-national database study in coordination with the WHO Regional Office for Europe. Lancet Infect Dis 2014 http://dx.doi.org/10.1016/S1473-3099(14)70071-4

[ii] Committee of Food Security, Ministry of Agriculture, Ministry of Health and Social Protection of Population of the Republic of Tajikistan National action plan to Tackle Antimicrobial Resistance in the Republic of Tajikistan, 2018 –2022: Dushanbe, Tajikistan; 2018
https://www.who.int/antimicrobial-resistance/national-action-plans/library/en/, accessed 19 May 2020

[iii] Leenstra T, Kooij K, Tambic A, Nahrgang S, van de Sande-Bruinsma N. Proof-of-principle antimicrobial resistance routine diagnostics surveillance project: Protocol. Copenhagen: WHO Regional Office for Europe; 2018

Annexes

Annex 1 – Log Framework

AMR MPTF Log framework		Name of country: Tajikistan	
Impact: Tajikistan has explicit commitments on AMR based on evidence and quality data.			
Objectives	**Indicators**	**Sources of verification**	**Key assumptions and risks**
Outcome 1: Evidence base/representative data on AMR/AMU improved for policy-makers and sectors implementing AMU practices	**Percentage of targeted laboratories reaching PIP 3 in FAO Assessment Tool for Laboratories and AMR Surveillance systems (FAO-ATLASS)** Baseline value: No human health or veterinary laboratories have been assessed at PIP 3. Target value: 1 veterinary laboratory (NCVD) & 2 human health laboratories (Tajik Research Institute of Preventive Medicine, Sanitary and Epidemiological Laboratory) assessed at PIP 3.	ATLASS Report Minutes of MCG Sampling Strategy Document	Reliable supply of laboratory reagents Regular meetings of MCG Inclusion of additional agricultural representatives and private sector on MCG

AMR MPTF Log framework		Name of country: Tajikistan		
Impact: Tajikistan has explicit commitments on AMR based on evidence and quality data.				
Objectives	**Indicators**	**Sources of verification**		**Key assumptions and risks**
	Sustainable sampling strategy for integrated active and/or passive surveillance in the human, food and agriculture sectors developed, including target organisms, and priority livestock species. Baseline: No strategy has been developed Target: Detailed strategy for Tajikistan			
MPTF Output Objectives	**Indicator**	**Source of Verification**	**Key Activities**	**Key Assumptions and Risks**
Output 1.1: Systems for generating, analysing and interpreting data on resistance and consumption/use patterns developed or strengthened	**National surveillance system for AMR supported in human and animal health** Baseline value: AMR surveillance in 4 hospital laboratories Target value: AMR surveillance in 5 hospital laboratories	National report on AMR in human health National report on AMR in animal health	Develop and implement surveillance of AMR in human and animal health, food and the environment. Expand AMR surveillance in human health Increase the number of laboratories in the WHO EQA	Dedicated focal points surveillance nominated to develop protocols to synergise the activities No delays in the purchase of reagents and other lab materials Ongoing availability of reagents and other lab materials

AMR MPTF Log framework		Name of country: Tajikistan		
Impact: Tajikistan has explicit commitments on AMR based on evidence and quality data.				
Objectives	**Indicators**	**Sources of verification**		**Key assumptions and risks**
	Baseline value: No passive surveillance of AMR in sick animals Target value: Veterinary laboratory passive surveillance network established, and active surveillance piloted		Increase the number of laboratories in CAESAR-network Establish linkages with AMR Central Database Project Establish passive surveillance for collecting samples from sick poultry and cattle Design and initiate targeted active surveillance Raise awareness among veterinarians and farmers on the importance and feasibility of surveillance to understand AMR in livestock with regards to animal and human health Provide laboratory training in public health and veterinary/food safety to strengthen laboratory capacity. Build on previous capacity building initiatives - focus on integrated surveillance of ESBL producing E. coli in all sectors; Provide additional training on AMR testing for central and regional veterinary labs;	Availability of samples/isolates for passive surveillance Resources available and access to farms possible for active surveillance COVID restrictions do not impact Training, Farm visits, the FAO survey, and/or AMC surveillance activities
	Number of laboratories with capacity to perform antimicrobial susceptibility testing and bacterial isolation and identification according to international standards. Baseline value: 8 human health laboratories in WHO-EQA system Target value: 10 human health laboratories in WHO-EQA system Baseline value: 0 veterinary laboratories with this capacity Target value: 2 veterinary laboratories with this capacity (1 central and 1 regional)	IQA/EQA report(s)		
	Number of laboratories in CAESAR-network	Annual CAESAR report		

AMR MPTF Log framework		Name of country: Tajikistan		
Impact: Tajikistan has explicit commitments on AMR based on evidence and quality data.				
Objectives	**Indicators**	**Sources of verification**		**Key assumptions and risks**
	Baseline value: 4 hospital laboratories Target value: 10 hospital laboratories		Ensure the use of AST guidelines, SOPs, and Quality Assurance Programs for human health and veterinary bacteriological labs based on international protocols.	
	Number of AMR training sessions for veterinary laboratories Baseline value: 0 Target value: 1 central and 1 regional	Training Reports	Monitor AMU/AMC in general population, health facilities, animal husbandry, and veterinary services Continue and improve participation in EURO AMC network	
	National system for monitoring of AMC/AMU supported in human and animal health Baseline value: AMU surveillance in 4 hospitals; Target value: AMU surveillance in 5 hospitals and 5 PHCs; Baseline value: FAO AMU survey developed Target value: AMU survey conducted in poultry	Annual AMC network report FAO report on pilot AMU survey in poultry	Expand AMU data surveillance in hospitals OIE data collection on antimicrobials intended for use in animals Design and develop a AMC surveillance system for livestock and poultry Implement AMC surveillance activities in one region	

AMR MPTF Log framework		Tajikistan		
Impact: AMU associated behaviours and practices are sustainably improved in critical sectors				
Objectives	**Indicators**	**Sources of verification**		**Key assumptions and risks**
Outcome 2: Use of antimicrobials optimized in critical sectors	**Proportion of antibiotics consumed in the human sector that are in the Access category of AWaRe** Baseline: 54% (2015 data) in the Access category Target: 60% in the Access category	WHO Report on AMC Categorization document		Ability to determine list of all available antibiotics for animal use.
	Determination of AWaRe categories for antibiotics sold for use in animals in Tajikistan Baseline: OIE data submission Target: All antibiotics available for sale in animals in Tajikistan categorized			
MPTF Output Objectives	**Indicator**	**Source of Verification**	**Key Activities**	**Key Assumptions and Risks**
Output 2.1: Systems for optimized use strengthened in critical sectors	**Guidelines for prudent use of antimicrobials** Baseline value: Guidelines developed Target value: guidelines updated incl. AWaRe	EML and guidelines published	Provide support to strengthen systems for optimized and prudent use Review and update the national EML and international	Ability to determine list of all available antibiotics for animal use Sufficient veterinarians available for scaling up programs

AMR MPTF Log framework		Tajikistan		
Impact: AMU associated behaviours and practices are sustainably improved in critical sectors				
Objectives	**Indicators**	**Sources of verification**		**Key assumptions and risks**
			classifications of antimicrobials; include AWaRe categorization Improve prudent AMU and good husbandry practices by farmers and veterinarians by scaling up the existing programs; Provide technical support for the adoption of Codex Alimentarius maximum residue limits for antimicrobials in food.	
	AWaRe and OIE-list of antimicrobials used for managing supply of AB Baseline value: not included Target value: AWaRe categorization included	Antimicrobial list available with categorization based on OIE and AWaRe		
Output: 2.2 Strengthen systems for biosecurity and IPC to reduce incidence of infections	**Operational plan to ensure hygiene and good production practice in animal sectors;** Baseline value: no plan and no accurate data on vaccination coverage Target value: national plan developed; vaccine coverage records summarized annually	Biosecurity plan published; annual activity reports Annual report on vaccination coverage	<u>Develop and implement standards for biosecurity, IPC and WASH:</u> Integrate WASH and IPC programs in policies, standards and activities Support the development of IPC standards in HCF and WASH services in HCF and community Support adherence to the Law on national drinking water and sanitation Support implementation of biosecurity, good husbandry practices and management in livestock production systems aiming at reducing AMU	Dedicated staff available for IPC protocol development AM stewardship supported in HCF Veterinary services coordinated and resourced Reliable, clean water source available for HCF and community
	IPC plan strengthened in line with the IPC core components and WASH Baseline value: IPC/WASH implemented in 1 pilot hospital	WASH FIT implemented in 5 hospitals		

AMR MPTF Log framework		Tajikistan		
Impact: AMU associated behaviours and practices are sustainably improved in critical sectors				
Objectives	**Indicators**	**Sources of verification**		**Key assumptions and risks**
	Target value: IPC/WASH implemented in up to 5 hospitals; training provided to clinical staff		Support Tajik capacity to control the OIE-listed diseases by implementing FAO guidelines for vaccinators	

AMR MPTF Log framework		Tajikistan		
Impact: AMU associated behaviours and practices are sustainably improved in critical sectors				
Objectives	**Indicators**	**Sources of verification**		**Key assumptions and risks**
Outcome 3: Improved understanding of AMR risks and response options by targeted groups	**National targeted awareness campaigns established** Baseline value: Annual WAAW events in capital Target value: Awareness campaigns established in human and agriculture sectors	Number of national awareness campaigns that are established		Resources available to develop and implement awareness campaigns Sufficient stakeholder input to create campaigns that are straightforward, practical, and effective
MPTF Output Objectives	**Indicator**	**Source of Verification**	**Key Activities**	**Key Assumptions and Risks**
Output 3.1: Improved capacity to design targeted awareness raising, behaviour change and educational activities	**Communication strategy developed to support improved capability for communication and behaviour change initiatives on AMR.**	Number of awareness campaigns/events/WAAW	Provide support to information campaigns, workshops and training courses for professionals in all sectors	Sufficient resources to organize events – digital platforms and physical meetings; adequate channels available, radio & TV

AMR MPTF Log framework		Tajikistan		
Impact: AMU associated behaviours and practices are sustainably improved in critical sectors				
Objectives	**Indicators**	**Sources of verification**		**Key assumptions and risks**
	Baseline value: Annual WAAW events in capital Target value: Comprehensive strategy addressing all sectors		Continue to support awareness raising campaigns to promote prudent use of antimicrobials; Establish monthly broadcasting through TV and radio programs; Promote behaviour change on good hand hygiene in the community using already developed materials from WHO; Promote good food hygiene practices using already developed materials from FAO, OIE and WHO. Promote good animal production and prudent antimicrobial use practices Establish Farmer Field Schools to efficiently and effectively promote good animal husbandry and good animal production practices, in order to improve animal health and facilitate prudent antimicrobial use. Establish communication strategies for livestock producers using trusted community representatives Provide training workshops for professional education on AMR	Faculty knowledgeable on AMR available to provide professional education
	Assessment of the attendance and performance of training & professional courses Baseline value: no assessment Target value: monitoring system endorsed and applied	Number of training modules evaluated and assessed		
	Farmer Field Schools established in priority livestock species. Baseline value: no Farmer Field Schools Target value: 2 Farmer Field Schools established	Annual		

AMR MPTF Log framework		Tajikistan		
Impact: AMU associated behaviours and practices are sustainably improved in critical sectors				
Objectives	**Indicators**	**Sources of verification**		**Key assumptions and risks**
			and develop a monitoring system to assess the achievements	

AMR MPTF Log framework		Tajikistan		
Impact: The multi-sector approach to the AMR agenda is strengthened.				
Objectives	**Indicators**	**Sources of verification**		**Key assumptions and risks**
Outcome 4: Multi-sectoral coordination strengthened at national level	**An integrated approach to implement the National Action Plan on AMR is adopted** Baseline value: Laboratory methods and data capture tools are not standardized within or between sectors. Target value: Integration and standardization of laboratory methods and data capture tools across sectors (human and agriculture/animal health)	SOP documents Database		Database resources available Management support for Laboratory method standardization
MPTF Output Objectives	**Indicator**	**Source of Verification**	**Key Activities**	**Key Assumptions and Risks**
Output 4.1. Improved capacity for designing and implementing AMR related policy frameworks, investment plans and programs	**Full functional MCG established with representatives from all sectors** Baseline value: MCG established, some sectors not represented Target value: project coordinator recruited; capacity building for MCG, all relevant sectors represented including agriculture,	MCG monthly meeting reports	Provide programme support and coordination: Develop and submit the MPTF proposal on behalf of Tripartite; Support the implementation of a detailed workplan for the joint project with FAO and OIE Support synergies, harmonization, and coordination across the five outputs identified in the join project, as well as among	No substantial changes in the staffing in ministries and key organizations Resources are available to support MCG activities, meetings and premises Private sector representatives available and willing/able to participate in regular meetings in the capital

AMR MPTF Log framework		Tajikistan		
Impact: The multi-sector approach to the AMR agenda is strengthened.				
Objectives	**Indicators**	**Sources of verification**		**Key assumptions and risks**
	veterinary, and private sectors.		individual contractors and existing activities within Tajikistan Support the development of an operational plan to review the NAP and budget execution; Establish a mechanism to coordinate the actions across ministries on addressing AMR with a dedicated secretariat and adequate funding to support MCG operations Support the inclusion of additional agriculture, veterinary, stakeholders in the MCG, including private sector representatives	
	NAP with the estimation costs of implementation by year Baseline value: log frame for NAP available Target value: annual review and planning of (next) NAP	Annual review of NAP implementation		
	Regulatory framework(s) for AM in critical sectors reviewed Baseline value: No legal framework reviewed Target value: Ban on AB without prescription included in the Law; FAO/OIE recommendations from legislation report considered in updating legislation	Regulatory framework(s) published	<u>Provide support for regulated access to antimicrobial medicines:</u> Support inclusion of ban of antibiotics sale for human consumption without prescription in the national Law; Complete the tripartite legal assessment and identify priorities for legal reform in the country	Government priorities include ban of antibiotic sales without prescription

Annex 2 - Risk Matrix

Risk description	Risk Category: Contextual Programmatic Institutional	Worst case consequence for the project	Risk Score		Mitigating action	Action owner
			Impact	Likelihood		
Unable to consistently obtain quality laboratory consumables at reasonable price	Institutional	Samples are analysed using sub-standard and/or expired consumables and results are unreliable	Moderate	Likely	Making use of the WHO catalogue for the duration of the project while a sustainable solution is found with support from the government	WHO and MoHSPP and CFS
Management support insufficient for IPC protocol development	Institutional	Development of protocols incomplete/unsatisfactory due to lack of human resources. COVID-19 may impact this due to staff shortages resulting from the pandemic.	Low	Unlikely	Tripartite has agreed with the Government on the project and to support the NAP implementation in Tajikistan	MoHSPP
Programmatic risks associated with timely and successful, implementation of the project.	Programmatic	Delay in financing and/or implementation of some activities due to Covid-19 pandemic. In particular, laboratory training and activities, active farm surveillance, and the development of Farmer	Moderate	Likely	The project proposal has agreed estimated budget, a preliminary schedule of activities, staffing, and facility estimates, etc. Tripartite has program planning, execution, communications, and	Tripartite

		Field schools may be delayed/ due to COVID travel restrictions. MCG meetings may be postponed/cancelled.			contracting structures that minimize programmatic risks. Modifying activities to achieve objectives within COVID restrictions, including virtual training and meetings, train-the-trainer approaches, and de-centralized initiatives. Presence of WHO/FAO country offices will inform and facilitate the necessary activity modifications.	
Changes in policies, priorities, officials or government may impact the implementation of the project	Contextual	Political instability and changing of Government priorities	Very low	Unlikely	The context of the Tripartite project is in line with the NAP signed by the three ministries/sectors; Tripartite has agreed with the Government on the project and to support the NAP implementation in Tajikistan	Tripartite and Government of the Republic of Tajikistan
Any organizational risk (for instance: loss of project staff) that causes the Tripartite organizations to fail to meet the goal and objectives of the project.	Programmatic	Closure of the offices	Very low	Unlikely	FAO and WHO have Country Offices and FAO/OIE/WHO Regional Offices have dedicated AMR programs and staff to support the implementation of the project.	Tripartite

Ban of antibiotics for sale for human consumption without prescription not prioritized by responsible Government departments	Institutional	Antibiotics continue to be sold for human consumption without prescriptions	Moderate	Unlikely	Tripartite has agreed with the Government on the project and to support the NAP implementation in Tajikistan	Government of Republic of Tajikistan
Insufficient participation of agriculture, veterinary, and private sector in MCG	Institutional	Agricultural focussed aspects of project ineffectively executed due to lack of input from agriculture, veterinary and private sectors; including awareness, surveillance, animal health, and prudent use components.	Moderate	Likely	MoA and CFS have current representatives on MCG who could identify additional appropriate governmental representation. TVA is indicated as a stakeholder in this project. The Farmers association could be included. As well, individual private sector representatives can be identified and recruited if sufficiently developed private stakeholder organizations are not available to participate	Tripartite and MCG
Inability to effectively interact with farmers due to thousands of backyard farms	Programmatic	No improvement in awareness of AMR, animal production practices, or prudent antimicrobial use on farms in Tajikistan	Moderate	Likely	Inclusion of private sector, Ministry of Agriculture, and FAO/OIE country and regional offices in determining straightforward and practical communication strategies and the use of Farmer Field Schools to demonstrate	Tripartite and MCG

					effective practices. Utilization of radio programs, markets and other locations where farmers gather, recruitment of highly respected individuals to communicate key messages, and integration with existing farm-level activities in other Ministries (Animal Health, Human Health, Education, etc).	
Protocols and Databases not standardized and integrated between human health and agriculture surveillance	Programmatic	Inability to interpret results in a One-Health context	Low	Unlikely	Project manager to coordinate efforts in human health and agriculture sectors in order to ensure synchronization and harmonization	Tripartite, MoHSPP, and CFS
HCF and community limited access to water supply	Contextual	Inability to implement IPC and WASH in HCF and community	Moderate	Likely	Selection of communities with adequate water supply for initial implementation of IPC and WASH. Support adherence to Law on national drinking water and sanitation to increase number of HCF and communities with adequate water supply.	Tripartite and Government of the Republic of Tajikistan
Small number of private veterinarians available for animal health and	Institutional	Inability to operationalize animal health and AMR awareness activities	Low	Likely	Use of Farmer Field Schools to contribute to animal health and AMR awareness	Tripartite and MoA

AMR awareness activities					activities. Provide AMR training workshops and teaching resources for veterinary faculty and continuing education workshops for veterinarians and paraveterinarians	
Inability to determine list of all antibiotics available for use in animals	Programmatic	Incomplete categorization of antibiotics according to AWaRe.	Low	Unlikely	Participation of agriculture, veterinary, and private sector stakeholders to identify additional antibiotics potentially available through human pharmacies and/or unregulated channels.	Tripartite and MoA
Farmers unwilling to participate in active surveillance	Programmatic	Inadequate active surveillance samples collected	Low	Unlikely		Tripartite and MoA

Annex 3 - Outline of Budget

Categories	FAO	OIE	WHO	TOTAL
1. Staff and other personnel costs [1]	$93,081	$72,000	$101,000	$266,081
2. Supplies, Commodities, Materials[2]	$50,000	-	$40,000	$90,000
3. Equipment, Vehicles and Furniture including Depreciation [3]	-	-	-	-
4. Contractual Services[4]	$20,000	$87,500	$202,000	$309,500
5. Travel [5]	$41,189	$60,000	$60,000	$161,189
6. Transfers and Grants Counterparts[6]	$75,000	-	-	$75,000
7. General Operating and Other Direct Costs [7]	$32,730	-	-	$32,730
Total Direct Costs	$312,000	$219,500	$403,000	$934,500
8. Indirect support costs (Max. 7% of overall budget)[8]	$21,840	$15,365	$28,210	$65,415
TOTAL	$333,840	$234,865	$431,210	$999,915
Please indicate which organisation will receive pre-financing facility [9]			$18,000	

[1] Staff and other personnel costs: Includes all related staff and temporary staff costs including base salary, post adjustment and all staff entitlements. This includes the costs of a full-time project coordinator, based either in one of the organisations or the National coordination committee.

[2] Supplies, Commodities, Materials: Includes all direct and indirect costs (e.g. freight, transport, delivery, distribution) associated with procurement of supplies, commodities and materials. Office supplies should be reported as "General Operating".

[3] Equipment, Vehicles and Furniture including Depreciation: The procurement of durable equipment is not eligible for the AMR MPTF.

[4] Contractual Services: Services contracted by an organization which follow the normal procurement processes. It used for procurement of services requiring provision of intellectual or specialization services not foreseen under works and construction contracts such as, but not limited to, maintenance, licensing, studies, technical, training, advisory services. These are ruled by FAO policy MS 502 or MS 507 ruling LoA.

[5] Travel: Includes staff and non-staff travel paid for by the organization directly related to a project.

[6] Transfers and Grants to Counterparts: Includes transfers to national counterparts and any other transfers given to an implementing partner (e.g. NGO) which is not similar to a commercial service contract as per above. Please reference FAO policy MS 502.

[7] General Operating and Other Direct Costs: Includes all general operating costs for running an office. Examples include telecommunication, rents, finance charges and other costs which cannot be mapped to other expense categories. In addition, backstopping work from Headquarters (including from the project lead technical officer) could also be factored in these categories.

[8] Indirect Support Costs: (No definition provided).

[9] Max 25,000 USD fund can be used as pre-financing. More detailed information can be found in the guiding notes

Annex 4 - National Work Plan Template

Name of Country: Tajikistan

Start Date: 1st September 2021 Project End Date: 31st August 2023

	Lead Tripartite Org	Implementing Partner	Year 1				Year 2			
			Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Output: Evidence base/ representative data on AMR/AMU improved for policy-makers and sectors implementing AMU practices										
Key Activity 1: Develop and implement surveillance of AMR in human and animal health, food, environment										
Activity 1.1: Expand the existing AMR surveillance from 4 to 5 bacteriological laboratories in hospitals, including one laboratory outside the capital area;	WHO	FAO, OIE	X	X	X	X	X	X	X	X
Activity 1.2: Increase the number of laboratories in the WHO EQA system from 8 to 10	WHO	FAO, OIE			X	X	X	X	X	X
Activity 1.3: Increase the number of laboratories participating in the CAESAR-network from 4 to 10	WHO			X	X					
Activity 1.4: Establish linkages with the AMR Central Database Project in order to ensure that the inclusion of AST from veterinary isolates is supported	WHO		X	X	X	X	X	X	X	X
Activity 1.5: Raise awareness among veterinarians and farmers on the importance and feasibility of passive and active surveillance to understand AMR status in the livestock sector;	FAO	OIE		X	X					
Activity 1.6: Establishment of a National Reference Laboratory for the food and veterinary sectors	FAO		X	X						
Activity 1.7: Establishment of linkages and procedures between the National Reference Laboratory for the food and veterinary sector and the state/regional/local veterinary laboratories to	FAO		X	X	X	X				

facilitate the ongoing transfer of relevant isolates to the National Reference Laboratory										
Activity 1.8: Establish basic passive surveillance for samples originating from sick animals (poultry and cattle) through the forwarding of samples and/or isolates to the national veterinary laboratory for AST testing	FAO			X	X	X	X	X	X	X
Activity 1.9: Design and develop practical active surveillance activities in animals at the farm level, focused on specific livestock species and/or regions and based on logistical (for sample collection) and laboratory (for sample isolation and AST testing) capacities. Optimize synergies with existing animal health/vaccination/regulatory initiatives, particularly those that include farm visits.	FAO				X	X	X	X	X	X
Key Activity 2: Provide laboratory training in public health and veterinary/food safety to strengthen laboratory capacity.										
Activity 2.1: Build on previous capacity building initiatives and focus on establishing integrated surveillance of ESBL producing E. coli in humans, animal, food and the environment	WHO	FAO/OIE	X	X			X	X		
Activity 2.2: Provide additional training on AMR testing for central and regional veterinary labs;	FAO	OIE	X	X			X	X		
Activity 2.3: Support the use of developed laboratory AST guidelines, the use of SOPs, and Quality Assurance programs for human health and veterinary bacteriological laboratories based on international protocols.	WHO	FAO	X	X			X	X		
Key Activity 3: Monitor AMU/AMC in general population, health facilities, animal husbandry, veterinary services										
Activity 3.1: Continue participation in EURO AMC network and improve data submission by including reports from the regional levels	WHO		X	X			X	X		
Activity 3.2: Start data collection on AMU in five hospitals and five PHCs	WHO				X	X			X	X

Activity 3.3: Launch of OIE data collection on antimicrobials intended for use in animals	OIE		X	X	X	X				
Activity 3.4: Design and develop a basic AMC surveillance system for livestock and poultry antimicrobials based on identification of potential/existing practical and reliable data sources within the antimicrobial distribution system in Tajikistan	FAO		X	X	X	X				
Activity 3.5: Implement the initial activities identified in the AMC surveillance system design, with a focus in one region (to be determined)	FAO					X	X	X	X	X
Output: Use of antimicrobials optimized in critical sectors										
Key Activity 4: Provide support to strengthen systems for optimized use										
Activity 4.1: Review EML and international classifications of antimicrobials in human and animal health; include AWaRe categorization	WHO	FAO, OIE	X	X			X	X		
Activity 4.2: Improve prudent AMU and good husbandry practices by farmers and veterinarians by scaling up the existing programs	FAO		X	X	X	X	X	X	X	X
Activity 4.3: Provide technical support for the adoption of Codex Alimentarius maximum residue limits for antimicrobials in food	FAO	WHO	X	X				X	X	
Key Activity 5: Develop and implement standards for biosecurity, IPC & WASH										
Activity 5.1 Integrate AMR, WASH and IPC programs in policies, standards and activities towards improving the quality of healthcare services	WHO				X	X				
Activity 5.2: Support development of standards for IPC components in HCF, including promotion of good hygiene practices and provision of adequate WASH services HCF and community	WHO						X	X		
Activity 5.3: Support the adherence to the Law on national drinking water and sanitation	WHO				X	X				
Activity 5.4: Support implementation of biosecurity, good management in animal husbandry in priority livestock systems aiming at reducing AMU	OIE	FAO	X	X	X	X	X	X	X	X

Activity 5.5: Support to strengthen Tajik capacity to control OIE-listed diseases by translating and implementing FAO guidelines for vaccinators.	FAO	OIE	X	X	X	X				
Output: Improved understanding of AMR risks and response options by targeted groups										
Key Activity 6: Provide support to information campaigns, workshops and training courses for professionals										
Activity 6.1: Continue to support awareness campaigns targeting different audiences on prudent AB use	WHO	FAO, OIE			X				X	
Activity 6.2: Establish monthly broadcasting of AMR/AMU information through TV and radio programs. These should target the general population as well as livestock farmers	WHO	FAO, OIE		X				X		
Activity 6.3: Promote behaviour change on good hand hygiene in community	WHO	FAO, OIE			X				X	
Activity 6.4: Promote good food hygiene practices (5 keys to safer food	FAO	OIE	X	X	X					
Activity 6.5: Promote good animal production and prudent antimicrobial use practices using materials developed by FAO and OIE and translated into Tajik.	OIE	FAO			X	X	X	X	X	X
Activity 6.6: Establish communication strategies for livestock producers utilizing trusted community representatives.	OIE	FAO	X	X						
Activity 6.7: Provide training workshops for professional education (as part of curriculum and continuing education) in all critical sectors involved in human and animal health on prudent use of antimicrobials and the risk of AMR. Develop a monitoring system to evaluate the contents of the courses and to assess the understanding of participants, including medical and veterinary faculty and students, medical and veterinary practitioners, and medical and veterinary pharmacists.	WHO	FAO, OIE	X	X	X					
Output: Multi-sectoral coordination strengthened at national level										
Key Activity 7: Program support and coordination AMR related policy frameworks										

Activity 7.1: Develop and submit MPTF proposal on behalf of the Tripartite organizations	WHO	FAO, OIE	X							
Activity 7.2: Develop detailed workplan with tripartite organizations	WHO		X	X			X	X		
Activity 7.3: Support synergies, harmonization, and coordination across the five outputs identified in the joint project as well as among individual contractors and with existing activities within Tajikistan			X	X	X	X	X	X	X	X
Activity 7.4: Develop operational plan for NAP review implementation	WHO			X				X		
Activity 7.5: Establish coordinating mechanism across ministries & MCG	WHO			X	X	X	X			
Key Activity 8: Provide support for regulated access to antimicrobial medicines										
Activity 8.1: Support inclusion of ban on antibiotics sale for human consumption without prescription in the national Law	WHO	FAO, OIE			X	X	X	X	X	X
Activity 8.2: Complete the tripartite legal assessment and to identify priorities for legal reform in the country	FAO	OIE		X	X	X	X			
Staff travel and other cost	WHO		X	X	X	X	X	X	X	X
Staff travel and other cost	FAO		X	X	X	X	X	X	X	X
Staff travel and other cost	OIE		X	X	X	X	X	X	X	X

Appendices

Appendices are attached as separate attachments to the email received containing this guidance.

- Appendix 1 – Details of Budget template (excel sheet)
- Appendix 2.1 – FAO legal document cover page
- Appendix 2.2 – FAO Legal document clause
- Appendix 3 – Tripartite Results Matrix

Checklist before submission

1. *Country Proposal Submission Template*
2. *Log Framework Template (see Annex 1) (use of SMART output methodology up to the activity level)*
3. *Risk Matrix Template (see Annex 2)*
4. *Outline of Budget Templates (see Annex 3)*
5. *Work Plan Template (see Annex 4)*
6. *Details of Budget Template (see Appendix 1)*
7. *Legal clause (please see paragraph 3.3 Accountability, financial management, and public disclosure and Appendices 2.1 and 2.2)*

Please also attach the supporting documents:

8. *AMR National Action Plan*
9. *Any AMR progress reports or other relevant documentation (the recent 3 years)*
10. *Endorsement of AMR National Coordination Committee*
11. *Letter of support from key line ministries (at least Ministry of Health and Ministry of Agriculture)*
12. *Submission letter signed by heads of tripartite organisations*