Country profiles

Table 1: Overview

Project description

Project: AMR-MPTF: Fight against Antimicrobial Resistance in Peru under the One Health Approach (ID: UNJP/PER/060/UNJ)

Duration: 24 months

The key areas of the AMR-MPTF project focus on strengthening institutional governance, generating antimicrobial resistance (AMR) and antimicrobial use (AMU) data and evidence for decision-makers by fortifying the basis for an integrated AMR surveillance system, promoting responsible antimicrobial use in the human health and agricultural sectors and improving understanding of AMR risks. The core activities of the project include:

- Updating the AMR Multisectoral Plan and strengthening the Multisectoral Commission (MSC-AMR).
- Drafting an AMR regulatory framework under the One Health approach.
- Bases for the integrated surveillance system: strengthening analytical and information management capacities, AMR and AMU protocols and procedures, and provision of laboratory materials and reagents.
- Responsible and prudent use of antimicrobials in animal health and agriculture and implementation of the consensus guide through public-private partnerships.
- Support for the implementation of the Antimicrobial Stewardship Programs (ASP)regulations in human health at the national level.
- Awareness and advocacy strategy on AMR/AMU under the One Health approach with priority application in the poultry sector.
- Advocacy for the inclusion of AMR and AMU in the curricula of professionals in higher education institutions, professional associations, and scientific societies.

Project progress:

• AMR Multisectoral Plan and strengthening of the MSC-AMR

The project contributed to the country with the delivery of two (02) relevant products: the evaluation of the implementation of the Multisectoral AMR Plan 2019-2021, and the update of the Plan through the document "Proposal for a Multisectoral Plan to address Antimicrobial Resistance 2024-2028 under the One Health approach". Both products achieved the proposed objectives, strengthening the work of the MSC-AMR.

The proposed Multisectoral Plan 2024-2028 has been adopted by the MSC-AMR and will continue toward its approval under the Commission's leadership.

• Regulatory framework on AMR with a One Health approach

The country received the final report of the Implementation of the One Health legal tool for the analysis of legislation relevant to AMR, which was developed by the application of this Quadripartite tool, which includes the analysis of (07) regulatory chapters on governance, human health, food safety, veterinary legislation, pesticides, plant health, and environment. The report identifies the gaps and establishes the conclusions and recommendations of the analysis carried out to strengthen AMR containment through legislation.

As a result of the application of this legal tool, and at the request of the MSC-AMR, the project delivered an additional product: the Draft Law for AMR containment. The MSC-AMR will oversee its approval and implementation, a task that will continue beyond the duration of the MPTF project and will support AMR containment actions in the country.

• Bases for the Integrated AMR Surveillance System, the following actions are included:

-Baseline of the surveillance system and installed capacity of laboratories. The project delivered to the MSC-AMR the analysis report of the installed capacity of five (05) official laboratories for AMR diagnosis: Animal Health Laboratory (UCDSA) and Food Microbiology Laboratory (LMA) of the National Agricultural Health Service (SENASA) of the Ministry of Agrarian Development and Irrigation (MIDAGRI); Aquaculture Health Laboratory and Microbiology and Molecular Biology Laboratory of the National Fishery Health Agency (SANIPES) of the Ministry of Production (PRODUCE) and the Microbiology Laboratory of the General Directorate of Environmental Health and Food Safety (DIGESA) of the Ministry of Health (MINSA). The project also delivered the report on the application of the FAO-ATLASS tool carried out in the five (05) laboratories. The report was prepared by SENASICA, Mexico, which is an FAO Reference Center for AMR. Both reports identified necessary improvements in the areas of laboratory activity, technical practices, data management and handling of biological material, and quality assurance. The progressive implementation of the improvements will enable the laboratories to move towards more sustainable operations.

-**Protocols for AMR surveillance**. In coordination with the MSC-AMR, two (02) protocols were formulated for the determination of AMR susceptibility, by automated and conventional methods respectively, for the sentinel microorganisms prioritized in the AMR integrated surveillance pilot plan.

In addition, the Microbiological Procedures Manual for the Identification and Antimicrobial Susceptibility Testing of Bacteria of Public Health Importance was prepared, which includes among its main components a protocol for Integrated Surveillance of Antimicrobial Resistance under the "One Health" Approach (VIRAMUS), protocols to obtain, preserve, and transport samples, identification, and molecular tests for pathogen identification.

The manual does not include the harmonization of protocols for obtaining, transporting, and storing samples of animal and environmental origin. However, it is hoped that with the collaboration and coordination among all MSC-AMR entities, a consensus will be reached that will allow the inclusion of such harmonized protocols in a future version.

-Capacity building in AMR diagnostic methodologies. Six (06) activities were developed within the framework of the Plan for capacity building in microbiological diagnosis and analysis and interpretation of information: The first one started with a virtual training for SENASA, SANIPES, and DIGESA laboratory technicians in AMR diagnostic methods. The second activity was an internship for SENASA, SANIPES, and DIGESA laboratory technicians at the SENASICA, MEXICO facilities. The beneficiaries were trained in whole genome sequencing (WGS) and bioinformatics analysis in AMR surveillance, critical points for DNA extraction and main bioinformatics tools. The third activity corresponds to the realization of a workshop on the application of the FAO Assessment Tool for Laboratories and Antimicrobial resistance

Surveillance Systems (FAO-ATLASS) for the SENASA, DIGESA, and SANIPES laboratories, respectively. The fourth activity corresponds to an International Forum on Antimicrobial Resistance Surveillance under the One Health approach, to highlight the importance of AMR as a public health problem and strengthen integrated surveillance of AMR in the country under the One Health approach, to contribute to decision-making regarding AMR containment. The fifth activity corresponds to a Multisectoral Approach Workshop to Address the Impact of AMR in the Environment, to identify the factors and pathways of entry of AMR in the environment by providing a basic understanding of the importance of the environment in AMR problems, as well as identifying diagnostic methodologies to be developed in environmental samples.

The last activity was a workshop on molecular and genomic diagnosis of resistant microorganisms in the genomic diagnosis laboratory of SANIPES. The event strengthened the diagnostic capabilities of technicians from SENASA, DIGESA, National Institute of Health (INS), and SANIPES laboratories. The event applied a different approach, employing national human resources from SANIPES and INS to act as instructors and tutors instead of international ones. Prioritizing local human resources made it possible to acquire a greater quantity of inputs, and from a strategic point of view, it also favored a long-term horizontal and collaborative approach through the promotion of an informal network for mutual technical support among the participating institutions.

-Provision of supplies

The supply of inputs and materials for the implementation of the integrated surveillance plan for AMR in the different laboratories was carried out in the last quarter of 2023. The INS centralized the receiving of laboratory supplies and materials and has been coordinating with SANIPES and SENASA for the orderly delivery of these supplies. In the case of SENASA and SANIPES, the supplies and materials correspond to antimicrobial resistance detection kits to be used in automated methods. On the other hand, for DIGESA the inputs were directed for conventional methodologies.

Additionally, WOAH managed the acquisition of the inputs and reagents suggested by SANIPES and the MSC Technical Secretariat for use in the practical part of the workshop on molecular and genomic surveillance of resistant microorganisms, held at the SANIPES laboratory.

-A Pilot for an interoperable platform for integrated surveillance of AMR and AMU,

The construction of the pilot for an interoperable platform for integrated surveillance of AMR and AMU involved the participation of DIGESA, SANIPES, SENASA, INS, DIGEMID, Ministry of Environment-MINAM, and the General Office of Information Technology (OGTI) of the Ministry of Health.

Through numerous meetings, the consultancy in charge identified the information available related to the surveillance of AMR and AMU and constructed a channel to receive all the information available and the future information that will be created once the surveillance system is implemented.

A technical and economic diagnostic report of the existing platforms was prepared, and the functional and non-functional requirements of the system were agreed upon, as well as the system interface and prototype. The final report, as well as the source codes and interface prototype, were approved by the MSC-AMR, and a potential final implementation phase is expected under the MSC-AMR leadership.

- Analysis and interpretation of information generated from the integrated surveillance of AMR

To address the activity, numerous meetings were held with the institutions that participate in MSC-AMR, such as the General Directorate of Medicines, Supplies, and Drugs-DIGEMID of MINSA, DIGESA, INS, MINAM, SANIPES, and SENASA, for the approval of the work plan, presentation, and validation of the progress. A situation diagnosis document and a document with guidelines for the analysis and interpretation of integrated AMR surveillance data were prepared.

In addition, and at the request of the MSC-AMR Technical Secretariat (TS), a proposal for guidelines for integrated surveillance of AMR and the use and consumption of antimicrobials was included.

The final document was presented and approved by the Multisectoral Commission.

-Basis for an integrated AMR surveillance system

At the request of the MSC-AMR, the project delivered a proposal for guidelines for integrated AMR surveillance under the One Health approach. From now on, the MSC-AMR will oversee the discussion of the document to implement what the country considers necessary within its surveillance system.

Responsible and Prudent Use of Antimicrobials in Animal Health and Agriculture

The project delivered an "Integrated Guide for the responsible use of antimicrobials for animal health, agriculture, and the environment". The document includes general and three specific sections on the use of antimicrobials in terrestrial animals, aquatic animals, and agriculture, as well as topic sheets by animal species and main crops, to guide the competent authorities, private professionals, and producers. The contents of the topic sheets are oriented to common practices and include local species, such as South American camelids and guinea pigs (*Cavia porcellus*).

Once the guide was ready and approved, the second phase was to ensure its implementation. The project achieved the signature of an addendum of a general agreement between SENASA and the Peruvian Association of Pig Farmers; and an agreement between SANIPES and the National Aquaculture Society. The implementation of the responsible and prudent use of antimicrobial practices in the aquaculture and pork sector will contribute to sustainable development, safeguarding the health of animals, people, and the environment.

For agricultural health, several meetings were held with SENASA and representatives of different farmers' associations in the department of San Martin, to obtain interest in signing

an inter-institutional agreement for the application of the Guide in the agricultural area. This resulted in expressions of interest to work on promoting the responsible and prudent use of antimicrobials in the agricultural sector. However, no formal agreements were reached.

The synergy with the European Union funded project "Working together to combat Antimicrobial Resistance" should be highlighted, since it helped with the rapprochement between SENASA and the Peruvian Poultry Association.

As an additional product, through a letter of agreement signed with the Peruvian Poultry Farming Association (APA), a pilot plan for surveillance of antimicrobial use in the poultry sector was formulated and implemented, to collect data on antimicrobial use in broiler and laying hen poultry farms in the regions with the highest poultry production in the country, such as Lima, Ica and La Libertad. As part of the pilot plan, two (02) Antimicrobial Use Protocols (AMU) have also been proposed for the collection of information and data analysis, which will serve as guidelines that can be replicated in other sectors.

In Peru, there are no antimicrobial use index (AMUI) specifications in any livestock sector, including poultry, so it is not possible to indicate whether the values of the results found in the pilot are within or outside a standard value or range. In this sense, the implementation of the pilot plan and the results obtained mark the beginning of future work to be developed in this sector.

• Support for the implementation of ASP regulations in human health.

The project contributed to the training of health personnel in the regions of San Martin and La Libertad for the implementation of the Antimicrobial Stewardship Program (ASP), following an express request from DIGEMID. Health personnel received extensive training in different hospitals with an advanced level of ASP implementation in the city of Lima.

During the last quarter of 2023, a curriculum was developed for a virtual ASP course that can be implemented by professionals in different health facilities in the country. This curriculum was developed as result of a technical roundtable where the MSC-AMR was present and was led by the National School of Public Health (ENSAP). Five educational videos were developed that will be part of the course in development and that can be used as training tools while the course is being fully developed.

In addition, during Antimicrobial Resistance Awareness Week, an educational forum was organized by DIGEMID on the use and consumption of antimicrobials, with the participation of national human and animal health authorities. This activity showed the country's progress in the implementation of ASP and served to train health personnel from all over the country in the implementation of Technical Standard No. 184-MINSA/DIGEMID-2022 on the rational use of antimicrobials.

• Awareness-raising and advocacy on AMR under the One Health approach

The project delivered to the country an AMR Awareness and Advocacy Strategy under the One Health approach. The document represents the first attempt to organize the awareness and advocacy actions considering all the institutions involved public and private.

The project delivered an awareness and advocacy strategy exclusively for the poultry sector, managed by the Peruvian Poultry Association through a letter of agreement. The intervention for communication was developed mainly in the cities of Trujillo and Chincha, for its importance in the overall production of the country. During the implementation, SENASA showed a high commitment and involvement with the activities.

The content disseminated on social networks reached more than 10,000 people, while the dissemination of videos on Facebook is still pending. The communication videos, in the opinion of those consulted at events held in Chincha and Trujillo, meet the objective of communicating the importance of the responsible use of antimicrobials and good poultry practices. Future projects are expected to strengthen the topic, which will allow the development of AMR risk communication to different target audiences.

The project also contributed to the support and participation with the MSC-AMR in the celebration of World Antimicrobial Awareness Week (WAAW) in 2022 and World AMR Awareness Week in 2023 (WAAW).

Additionally, the educational forum organized by DIGEMID on the use and consumption of antimicrobials served as a tool to generate commitments from different government sectors for the "One Health" approach as a strategy for AMR containment. Representatives of the Tripartite Alliance also participated in this forum, providing perspectives on AMR containment under the "One Health" approach. The Workshop "Multisectoral Approach to Address the Impact of Antimicrobial Resistance in the Environment", aimed to provide an overview of the threat of AMR not only to human and animal health but also to the environment; highlighting the importance of a global and coordinated approach within the framework of "One Health" to work towards multisectoral and inter-institutional solutions.

• Incidence and Advocacy in Higher Education Institutions, Professional Associations and Scientific Societies

This activity was approached as two sub-activities and stages. One of the sub-activities refers to incidence and advocacy in higher education institutions, professional associations, and scientific societies, and the other sub-activity refers to advocacy in curriculum updating in Peruvian Universities and educational institutes.

The first sub-activity was carried out in 2022 and succeeded in mapping existing professional and trade associations in Peru, to increase their involvement in AMR issues and the activities of the MSC-AMR. The report was submitted and approved by the MSC-AMR.

One of the results has been the rapprochement of some Associations to the Multisectoral Commission, such as the National Association of Veterinary Products Laboratories (Aprovet).

The sub-activity referred to the Proposal for a Curriculum Improvement Plan in AMR / AMU for universities and prioritized professional careers in human medicine and biomedical sciences and veterinary medicine and agricultural and livestock sciences was developed in two stages. The first stage, completed during 2022, resulted in an analysis of the curricular plans of the careers. One of the main difficulties encountered that limited progress in this work was the low participation of the universities, with delays in providing the requested

information.

Finally, two (02) Improvement Plans for Curriculum Design with the incorporation of contents related to AMR/AMU were developed: one for the area of veterinary medicine, agronomy, animal husbandry and aquaculture, and the other in human medicine and other biomedical sciences, veterinary medicine, and agronomy.

Main challenges

- The political instability was a constant throughout the execution of the project, which hindered the coordination and commitment of some MSC-AMR stakeholders.
- The need to achieve greater participation of the Ministry of Environment and other nontraditional sectors such as the Ministry of Housing, Construction and Sanitation, Ministry of Transport and Communications; private sector, academic sector, and civil society in the promotion and development of actions related to AMR under the One Health approach.
- Obtain more committed participation of some members of the MSC-AMR and Competent Authorities.
- Encourage the provision of information on the use of antimicrobials in animals by the private sector, promoting the adequate and prudent use of antimicrobials.
- Encourage timely decision-making by MSC-AMR members, as well as cooperation and coordination among the different sectors related to AMR.
- Achieve more participation in professional, scientific, and educational associations from different sectors as Members of the Multisectoral Commission or in Technical Advisory Working Groups.

What were the main challenges you faced in delivering the project and how did you address them?

- Achieve country commitment, through the project's counterpart institutions, to engage, take ownership of its results, and position AMR/AMU on the government's political agenda; all to ensure the sustainability of AMR containment activities and optimal antimicrobial use. In this regard, the project intensified advocacy actions with the MSC-AMR and decision-making authorities.
- Ensure that national institutions with greater development share their experience and knowledge to support other national government entities by providing training and capacity building in different areas. The project organized a Workshop: *Introduction to Molecular and Genomic Surveillance of Antimicrobial Resistance*, in which SANIPES provided training and capacity building to institutions such as INS, DIGESA, and SENASA, as well as their staff members, with the commitment to support the laboratories of various institutions as needed.
- Have a proposal for an interoperable pilot platform to support integrated AMR surveillance management, including antimicrobial usage data from the human and animal health sectors,

and ensure resources for a development and implementation phase after the conclusion of the Project. The development of the activity has involved the participation of different institutions from the Ministries of Health (INS, DIGESA, DIGEMID), Agriculture (SENASA), Production (SANIPES), Environment, and Economy and Finance (National Digital Government Program - PNGD).

- Achieve greater commitment from non-governmental actors, such as universities, professional associations, and producer associations, by holding various meetings and dissemination actions through advocacy consultations with professional associations and scientific societies in Peru, as well as the execution of activities through the AMU pilot and implementation of awareness and advocacy strategy in the poultry sector.
- Increase the participation of professional, scientific, and educational associations in the MSC-AMR meetings or Technical Advisory Working Groups. This was possible through involvement in some Project activities such as the development of the Guide for Prudent Use of Antimicrobials in Animal Health and Agriculture, curriculum planning, and mapping of scientific societies, among others.
- Achieve the beginning of an integrated AMR surveillance. The project supported the process
 of supervision activities in different regions of the country to optimize the implementation of
 integrated surveillance in the aquaculture sector. Likewise, in the human health sector, the
 project supported activities to monitor the process of hospital laboratories in various
 provinces for the identification and reporting of AMR germs as part of integrated surveillance.
- Integrate the environmental sector into AMR activities. The project organized a Workshop: *Multisectoral Approach to Addressing the Impact of Antimicrobial Resistance on the Environment,* bringing together different government sectors involved in environmental activities. The results of the workshop identified the need to define the environmental sector's competencies concerning the agricultural and animal health sectors.

What has been the impact of these challenges on project delivery?

- The updating/renewal of the AMR Multisectoral Plan is one of the activities that presented the greatest delay, due to the MSC-AMR's back-and-forth over the best strategy to initiate the process. In the end, the document was finalized, and the MSC-AMR is responsible for its approval and implementation.
- The implementation of protocols and procedures for integrated surveillance of AMR was delayed because the Integrated Surveillance Pilot Plan had not been approved. Likewise, the purchase of laboratory supplies requested by the national counterpart was delayed due to a lack of consensus among MSC-AMR members. Finally, the project achieved the purchase of the supplies to strengthen the reference laboratories and deliver them to INS, which coordinates the orderly delivery of the supplies for the proper implementation of the SANIPES, SENASA, and INS laboratories.
- The revision of the AMR regulatory framework for the application of the One Health legal tool required the participation of the counterparts, which, due to the tight schedule of the

officials, took much longer than planned. The final version of the document was delivered and will be used to generate and/or update the legislation or regulations on AMR.

- Concerning the programmed products on AMR/AMU awareness and advocacy there was difficulty in identifying specialized service providers under the letter of agreement contract modality, for the design of a strategy under the One Health approach. In this context, it was decided to hire two (02) individual consultants, one in AMR risk management and the other in communication.
- The lack of precision in the development of the AMU Pilot Plan, as well as the awareness and advocacy strategy in the poultry sector, to meet the objectives set out in the Letter of Agreement signed between FAO and the APA, resulted in recurring observations that affected the implementation deadlines. However, this was overcome through closer coordination and monitoring.
- The activity of Advocacy and Advocacy in Higher Education Institutions was delayed because the number of universities with degrees in veterinary medicine and agricultural sciences, human medicine, and biomedical sciences was underestimated. In addition, it was not foreseen that many universities take long periods to process and answer requests for information. The proposal to improve 2 curricula for the aforementioned areas is intended to have a greater impact on the control of AMR if the subject is made visible and addressed in the different professional training courses that are related to AMR issues.

Learning Innovation

- Ongoing coordination at different levels with the competent authorities, institutions, and agencies participating in the project, as well as the involvement of different stakeholders depending on the topic to be addressed, facilitated the execution of activities and tasks, in addition to the commitment to continue with its implementation.
- Inter-institutional agreements for the implementation of the Guide for the Prudent Use of Antimicrobials between SENASA and the Peruvian Association of Pig Farmers and between SANIPES and the National Aquaculture Society.
- The interoperable pilot platform for integrated surveillance of AMR and AMU. The commitment and interest of the different sectors involved will help to seek resources for a development and implementation phase after the end of the project.
- The development of activities aimed at the academic sector of professional careers prioritized in human medicine and biomedical sciences, veterinary medicine, and agricultural sciences that play an important role in AMR and AMU, such as proposals to improve their curricula to incorporate One Health concepts and adequate use of antimicrobials in the different fields will help significantly in the control of AMR in the country.
- Coordination with the National School of Public Health (ENSAP) and the MSC-AMR enabled the implementation of a national virtual ASP course to provide massive training to health

personnel from different hospitals in the country.

- The application of the FAO-ATLASS tool enabled the country to have an evaluation of its AMR surveillance capacities and diagnostic laboratory capacities for the first time.
- Peru's opportunity to use the "One Health Tool for the analysis of legislation relevant to Antimicrobial Resistance". FAO Legal Report shows how the country's legislation covers aspects relevant to combating AMR in the areas of human health, food safety, animal health and production, pesticide management, plant health, and the environment, as well as AMR governance. The report also presents the gaps, recommendations, and analyses carried out to strengthen the fight against AMR through legislation.
- The opportunity for Peru to have a Draft Law for the Containment of AMR under the One Health approach. The approval of this law will provide legal support for AMR governance; will provide legal tools to government agencies that haven't had the competence to exercise functions; and will develop actions to contain AMR.

Stakeholder engagement and resource mobilization:

- At FAO headquarters in Rome, coordination with the United States Agency for International Development (USAID) led to the signing of an agreement to establish the Health Security Program in Latin America and the Caribbean through the ECTAD Project, with Peru being one of the beneficiary countries. This Program contains an AMR component to be developed over the next 5 years, complementing the results and progress of the tripartite AMR-MPTF project coordinated by FAO.
- The project, through the FAO agency supported the submission of a project proposal to the Pandemic Fund (World Bank), to continue the development of AMR containment actions in Peru under the leadership of the MSC-AMR.
- In all the activities carried out by WOAH, the different governmental and private institutions involved showed interest to continue working on the topics and activities of the project. Also, there was interest in seeking resources and in some cases consulting whether a second phase of the project is possible.
- Inter-institutional support was provided to share experiences and provide training and collaboration on different topics related to AMR, mainly in the laboratory areas, and a workshop on molecular and genomic surveillance was held at the SANIPES facilities, with the participation of four of the institutions that are part of the Project.
- The Ministry of Health has been actively participating in actions aimed at containing AMR. However, to ensure the sustained provision of resources, the MSC-AMR has been promoting the creation of a Results-Oriented Public Budget (PPoR), which if approved will generate a budget earmarked for AMR containment with adequate monitoring indicators.

Is there evidence that the MPTF grant is catalyzing broader stakeholder engagement and/or additional investment to address AMR (in particular, government)?

- The representatives of the National Digital Government Program PNGD expressed interest to continue with the topics and seek funding sources for the development and implementation of the computer platform that the Project leaves at the pilot level. This interest was expressed by institutions that are part of the Project and participate in the MSC-AMR.
- Evidence of commitment for continuing activities is shown by the Inter-institutional Agreements between SENASA and SANIPES with the Associations of Pig Producers and Aquaculture Producers, respectively. The agreement between SENASA and the pig farmers was formalized through an addendum to an existing general agreement, and the agreement between SANIPES and the fish farmers was also signed.
- It was noted that the Project generated opportunities for dialogue between the technical personnel of the national entities participating in the MSC-AMR, and potential opportunities for collaboration in the future. For example, the Workshop on Molecular and Genomic Surveillance allowed those National Agencies to turn to SANIPES when they require the implementation of such diagnostic methodologies.
- The signing of Public-Private Agreements with producer associations that actively involve them and generate financial and temporal sustainability in activities to improve the use of antimicrobials.
- The actions undertaken by the human health sector have made it possible to advance the commitment of responsible authorities with political decision-making power for the containment of AMR. During the development of the Antimicrobial Forum during the AMR awareness week, a member of the Health Commission of the Congress of the Republic was present and has been promoting legislation that allows the different sectors to work together to contain AMR under a "One Health" approach. There is also a law that proposes to strengthen the surveillance, prevention, and control of healthcare-associated infections (HAI) as a component of the national public health policy under the Ministry of Health, most of which are caused by resistant germs.
- Since the Workshop: *Multisectoral Approach to address the impact of Antimicrobial Resistance in the Environment*, the importance of a global and coordinated approach within the framework of "One Health" has been highlighted to work towards multisectoral and interinstitutional solutions, involving not only the Ministry of Environment but all government sectors that within their competencies develop activities that impact the environment. It is expected that the work begun will be strengthened through future projects.

Table 2: Review of progress against log frame

2.a Log frame outcomes

MPTF Outcome	Indicators	Assumptions – any revisions? Put here
Risks and benefits of AMR reflected in national	The country includes AMR within the framework of United Nations Cooperation and Sustainable Development (UNSDCF)	
sector-wide investments	The country has a functional framework for monitoring and evaluating the National Action Plan.	
	The Multisectoral Commission (MSC) reviews and uses data on AMU and AMR in relevant and prioritized sectors to strengthen policies and practices.	Assumptions: AMR integrated surveillance pilot generates data for analysis.
Evidence base/representative data on AMR/AMU improved for policymakers and sectors implementing AMU practices	Percentage of selected laboratories achieving PIP 3 in the FAO AMR Laboratory and Surveillance System Assessment Tool (FAO-ATLASS)	Assumption: The country has the financial resources to provide the facilities, human resources, equipment, and supplies for the selected laboratories to achieve PIP3.
	The country reviews and uses data on levels and trends in sales/imports/use of antimicrobials in animal production for food.	Assumptions: The country collects and notifies WOAH annually with data through SENASA in a timely manner.
Use of antimicrobials optimized in critical sectors.	Percentage of antibiotics consumed in the human sector that are in the Access Category	Revisions: To see the changes in the use of antibiotics, it was decided to change the initial indicator to the "Number of doses of reserve antibiotic consumption per 1000 inhabitants of the population." This change is also in line with the Global Report of the Antimicrobial Resistance and Use Surveillance System 2022, where indicator data is reported for different countries.
	Percentage of antimicrobials used in animals, classified by pharmacological class, animal species, and route of administration.	Assumptions: The country collects and notifies WOAH annually with data through SENASA in a timely manner.
Improved understanding of AMR risks and response options by targeted groups	Number and list of communication strategies developed or implemented to support enhanced capacity for communication and behavior change	

initiatives in AMR	

2.b Log frame outputs and associated indicators

% progress against indication	tor: Based on tir	ne, budget, and a	activities underwa	y/completed			
Categories: 09	% 1-25%;	25-50%;	50-75%;	75%-99%	100%	Choose best	option
						Ţ	
MPTF Output	Indicators		Progress description started/completed	on (activities d)		Indicator % met	Assumptions – any revisions? Put here
A. Improved country capacities for the design and implementation of AMR-related policy frameworks, investment plans, and programs	A.1 AMR Commission, functional Healt	Multisectoral with a fully h approach	The execution re Plan AMR 2019-20 served to provide the formulation of As one of the ma the Multisector Antimicrobial Res the One Health ap implementation w of MSC-AMR.	port of the Mul 021 was complete baseline inform the Multisectoral in inputs, the pro ral Plan to sistance 2024-202 proach was compl ill be under the le	ltisectoral ed, which hation for Plan. pposal for address 28 under leted. The eadership	100%	Assumptions: The MSC-AMR helps the process to update and approve the AMR Multisectoral Plan
	A.2 The regula on AMR, antimicrobials u have been revie international sta	atory framework including used as pesticides ewed in line with andards.	The Legal Analysis One Health quadri seven (07) re governance, hum veterinary legislati and the environme identify the legal addressed in the adequately contain As a result of the a and at the reque project delivered Draft Law for AN AMR will over implementation,	tool was applied of partite approach, egulatory chapt oan health, food on, pesticides, pla ent. The report was gaps that will ne future for the con- future for the con- n AMR. upplication of this less of the MSC-4 an additional pro- IR containment. Ta rsee its appro- a task that will	under the analyzing ters on d safety, nt health, as able to to be ountry to legal tool, AMR, the duct: the The MSC- val and continue	100%	

		beyond the duration of the MPTF project and will support AMR containment actions in the		
B. Systems for the generation, analysis, and interpretation of data on resistance and patterns of consumption/use of antimicrobials developed or strengthened	B.1 MSC is supported by the Tripartite to review AMR and AMU data and their quality in relevant sectors and consider the need to adapt the implementation of national strategies	country.The project delivered the analysis report of the installed capacity of five (05) official laboratories for AMR diagnosis. As well as the report on the application of the FAO - ATLASS self-assessment for the same five (05) laboratories.Also, it was delivered a Manual of Microbiological Procedures for the Identification and Antimicrobial Susceptibility Testing of Bacteria of Public Health Importance, which covers different protocols	100%	
		for integrated surveillance, sample collection, conservation and transport, identification, and molecular testing for pathogen identification. In addition, two complementary protocols were developed for determining AMR susceptibility. A pilot plan for surveillance of antimicrobial use in the poultry sector was formulated, together with two protocols for data collection and analysis of information		
	B.2 Percentage of specialized official laboratories with recognized capacities to carry out antimicrobial susceptibility tests and to isolate and identify bacteria in accordance with international standards	Six (06) activities were developed within the framework of the Plan for capacity building in microbiological diagnosis and analysis and interpretation of information. The activities prioritize training virtually, in-person, and considered workshops.	100%	
	B.3 Bases for a national integrated surveillance system for AMR, supported by human health, animal health, plant health, food chain, and	Integrated AMR surveillance is part of the updated National Plan. In addition, a draft document of guidelines for integrated AMR surveillance was	100%	

C Systems for the	environment	prepared, which identifies the core elements required for surveillance in each sector linked to AMR with their respective metrics. A situation analysis and a proposed model for analyzing the information produced by integrated surveillance of AMR and Antimicrobial Use were developed. A proposal for a technical standard for integrated surveillance was also produced. The strengthening of the ASPs was included	100%	
optimized use of antimicrobials strengthened in critical sectors	developed, reviewed, and updated on antimicrobials for human and veterinary medical use for prioritized critical sectors	in the actions of the updated National Plan. In addition, educational material was prepared for training health personnel of the Ministry of Health - DIGEMID - ENSAP.	100%	
	C.2 Guidelines for the responsible and prudent use of antimicrobials based on international standards are developed or revised	The project delivered the "Integrated Guide for the Responsible Use of Antimicrobials for animal health, agriculture, and the Environment". For the implementation of the guide, a collaboration agreement was signed between SENASA and the Peruvian Association of Pig Farmers, as well as between SANIPES and the National Society of Aquaculture.	100%	Revisions: A change was made in the means of verification of the indicator, from 02 guides to 01 guide. The change responds to the need to have an integrated document that addresses the sectors of terrestrial animals, aquatic animals, agriculture, and the environment in a transversal manner, seeking. the "One Health" approach.
D. Enhanced capacity for designing awareness, behavior change and educational activities	D.1 Number and list of communication strategies developed or implemented to support enhanced capacity for communication and behavior change initiatives in AMR	The AMR Awareness and Advocacy Strategy was formulated under the One Health approach, its implementation prioritized the poultry sector, managed by the Peruvian Poultry Association-APA through a letter of agreement. The project contributed to the celebration of the World Antimicrobial Awareness Week	100%	Revisions: Change of verification means from "One (01) AMU/AMR training program for higher level training institutions" to "Two (02) Proposals to improve curricula in biomedical and agricultural careers for higher level training

	(WAAW) during 2022 World AMR Awareness	institutions"
	Week in 2023.	
		With the change, it is
	A proposal was developed to improve	expected that the subject of
	curricula for AMR and AMU content in	AMU/AMR will be visualized
	selected careers in biomedical and	in the curricular plans, which
	agricultural sciences.	will have a greater impact on
		the training and skills of
		future professionals.

Risk matrix – any changes?

	Risk Category:		Risk Score			
Risk description	Contextual Programmatic Institutional	Worst case consequence for the project	Impact	Likelihood	Mitigating action	Action owner
ARM is not visible on the country's political agenda since the priorities are focused on the treatment of COVID and emergencies or natural disasters that require redirecting strategic activities and/or public financing.	Contextual	Delay in project implementation	Medium	Medium ¹	Accelerate the inclusion of AMR activities in the institutional Annual Operating Plans.	Members of the Multisectoral Commission
The key actors of the AMR Multisectoral Commission are not proportionally represented, affecting	Institutional	Delay in project implementation	Medium	Medium ²	Early advocacy aimed at decision makers, based on One Health and the responsibility of	Technical secretary of the Multisectoral Commission

¹ The increasingly recurrent climate of political instability and social protests generates shifted the focus of the government to political stability.

² The human health sector still dominates the MSC-AMR

the One Health approach.					critical sectors in AMR.	and MINSA
The validity of the PNA is about to expire and its update has not been achieved.	Institutional	Delay in project implementation	Medium ³	High ⁴	Promotion of the update of the NAP through the timely presentation of the proposal in the Commission.	Technical secretary of the Multisectoral Commission
Government decision- makers fail to translate evidence on AMR/AMU into the corresponding policies, plans or legal frameworks.	Programmatic	Delay in project implementation	Medium	High⁵	Technical support for the fight against AMR well founded with evidence.	Technical secretary of the Multisectoral Commission
Changes in the government administration delay or limit the implementation of the Project	Contextual	Delay in project implementation	Medium	High ⁶	Advocacy in the transfer commissions in the MINSA, MIDAGRI, PRODUCE and MINAM ministries of the new government.	Members of the Multisectoral Commission
Health professionals prefer to use antibiotics outside of the Access List.	Institutional	Delay in project implementation	Medium	Medium	Alliances with Professional Colleges and Universities.	MINSA

³ The is a delay in the actualization of the Action Plan which represents one of the main components of the project

⁴ The Action Plan has expired, although the MSC still aliens its work around the expired Action Plan.

⁵ SENASA doesn't provide information on time about AMU.

⁶ The increasingly recurrent climate of political instability and social protests has affected the permanence of the different position in the government administration.

Informal practices in the commercialization, distribution and use of antimicrobials by the commercial chain and agricultural producers.	Contextual	Delay in project implementation	Medium	High	Alliance with Associations of Food Animal Producers	MIDAGRI- SENASA, PRODUCE- SANIPES
Scientific societies, the pharmaceutical industry, and other actors are reluctant to change antimicrobial use practices.	Institutional	Delay in project implementation	Low	Medium	Awareness and implementation of good practice strategies in the use of antimicrobials.	Members of the Multisectoral Commission
Low level of participation and collaboration of professional veterinary associations and the terrestrial and aquatic animal production industry.	Contextual	Delay in project implementation	Medium	Medium	Alliances with professional associations to guarantee their participation.	Technical secretary of the Multisectoral Commission
Low level of involvement of the different critical sectors in activities against AMR.	Institutional	Delay in project implementation	Medium	Medium	Effectively integrate key critical sectors into the NAP and Multisectoral Commission activities	Members of the Multisectoral Commission
Low receptive level of the AMR theme in the identified critical sectors and in higher	Contextual	Delay in project implementation	Low	Medium	Alliance with Civil Society, Linking educational institutions ⁷ .	Technical secretary of the Multisectoral

⁷ The project is committed to the visibility of the education.

level educational			Commission
institutions.			

ANNEX

ACTIVITY SUMMARY FORM				
Outcome	Outcome 1.1: AMR risks and benefits reflected in national budget and development partner/multilateral investments, across sectors.			
Output	Output 1.1.1: AMR risk and benefits reflected in the national budget and development partner/multilateral investment across sectors			
Activity	1.1.1.a Support the update of the AMR Multisectoral Plan by strengthening the One Health approach			
Leading Agency	РАНО/WHO			
Deliverables	Proposal for a Multisectoral Plan to address Antimicrobial Resistance 2024-2028 under the "One Health" approach.			
Description	The proposed Multisectoral Plan to address Antimicrobial Resistance 2024-2028 under the One Health approach, gathers the contributions of the 05 Working Groups of the MSC-AMR organized around the five (05) objectives of the Multisectoral Plan.			
Partners involved in the development	Members of the National Multisectoral Commission to Confront AMR (MSC-AMR)			
State/Sustainability	Sustainability depends on the coordination of the members of the AMR National Multisectoral Commission for the discussion and approval of the proposed plan.			

ACTIVITY SUMMARY FORM					
Outcome	Outcome 1.1: AMR risks and benefits reflected in national budget and development partner/multilateral investments, across sectors.				
Output	Output 1.1.1: AMR risk and benefits reflected in the national budget and development partner/multilateral investment across sectors				
Activity	1.1.1.b Analyze the regulatory framework on AMR in line with international standards and develop a work plan for its updating implementation of the NAP				
Leading Agency	FAO				
Deliverables	 Implementation of the One Health tool for the analysis of legislation relevant to antimicrobial resistance in the Republic of Peru. Preliminary draft of the Framework Law for the Containment of Antimicrobial Resistance under the One Health approach. 				
Description	 The product is based on the application of the legal analysis tool under the One Health approach of the quadripartite, which contemplates the analysis of (07) regulatory chapters on governance, human health, food safety, veterinary legislation, pesticides, plant health, and environment. The proposed draft Law establishes the necessary public coordination and management mechanisms to contain antimicrobial resistance under the "One Health" approach. Among its main scopes are the declaration of national interest and public necessity of AMR containment, continuity of the MSC-AMR, creation of the National System for AMR containment, promotion of education and awareness, and participation of the civil society. 				
Partners involved in the development	MINSA, DIGESA, SENASA, SANIPES, MINAM, and MSC-AMR				
State/Sustainability	The products were delivered to MSC-AMR and will serve to provide a legal regulatory framework for AMR containment.				

ACTIVITY SUMMARY FORM	
Outcome	Outcome 1.2: Evidence base/representative data on AMR/AMU improved for policymakers and sectors implementing AMU practices.
Output	Output 1.2.1: Evidence base/representative data on AMR/AMU improved for policymakers and sectors implementing AMU practices antimicrobials.
Activity	1.2.1.a Analysis of the installed capacity (HR, infrastructure, equipment, supply of services, and others) for the integrated surveillance of AMR, using available tools (FAO-ATLASS and other existing ones), with emphasis on animal health, food for human consumption and the environment
Leading Agency	FAO
Deliverables	 Baseline Study of the Diagnostic Capacity of Official Laboratories for Antimicrobial Resistance (AMR) Surveillance. National workshop for the evaluation of the National Antimicrobial Resistance Surveillance System in the food and agriculture sectors.
Description	 There is an analysis of the installed capacity of five (05) official laboratories for AMR diagnosis: Animal Health Laboratory (UCDSA) and Food Microbiology Laboratory (LMA) of the National Agricultural Health Service (SENASA) of the Ministry of Agrarian Development and Irrigation (MIDAGRI); Aquaculture Health Laboratory and Microbiology and Molecular Biology Laboratory of the National Fishery Health Agency (SANIPES) of the Ministry of Production (PRODUCE) and the Microbiology Laboratory of the General Directorate of Environmental Health and Food Safety (DIGESA) of the Ministry of Health (MINSA). A workshop was held on the application of the FAO-ATLASS tool to identify the level of each laboratory in the Progressive Improvement Pathway (5 levels), based on the analysis of the components of Governance, Data Collection, and Analysis, Data Processing Network, Communication, and Sustainability.
Partners involved in the development	SENASICA- MEXICO, DIGESA, SENASA, SANIPES, and MSC-AMR
State/Sustainability	The products were delivered to MSC-AMR, and the diagnostic analysis will be used to determine the status of the laboratories and to draw up a work plan for laboratory improvement.

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ACTIVITY SUMMARY FORM	
Outcome	Outcome 1.2: Evidence base/representative data on AMR/AMU improved for policymakers and sectors implementing AMU practices.
Output	Output 1.2.1: Evidence-based/representative data on AMR/AMU improved for policymakers and sectors implementing AMU practices antimicrobials.
Activity	1.2.1.b Implementation of protocols and procedures for the integrated surveillance of AMR (human health, terrestrial and aquatic animal health, in prioritized food chains), as a technical basis for the development of a normative base
Leading Agency	PAHO/WHO, FAO
Deliverables	 PAHO/WHO Manual of microbiological procedures for identification and antimicrobial susceptibility testing of bacteria of public health importance. FAO AMR Protocol: Determination of antimicrobial susceptibility by the disk diffusion (DD) method in microorganisms. AMR Protocol: Automated assay for determination of antimicrobial susceptibility by the minimum inhibitory concentration (MIC) in microorganisms.
Description	 PAHO/WHO The manual includes among its main components a protocol for Integrated Surveillance of Antimicrobial Resistance under the "One Health" Approach (VIRAMUS), protocols for the collection, storage, and transport of samples, identification, and molecular tests for the identification of pathogens. FAO Two AMR protocols were proposed for the determination of antimicrobial resistance susceptibility by automated and conventional methods for the sentinel microorganisms prioritized in the AMR integrated surveillance pilot plan. The protocol for the determination of antimicrobial resistance susceptibility by the automated method will be destined for SENASA and SANIPES laboratories, and the protocol by the conventional method for DIGESA.
Partners involved in the development	DIGESA, SENASA, SANIPES, and MSC-AMR
State/Sustainability	The products were delivered to MSC-AMR, and their implementation is within the framework of the AMR surveillance pilot.

ACTIVITY SUMMARY FORM	
Outcome	Outcome 1.2: Evidence base/representative data on AMR/AMU improved for policymakers and sectors implementing AMU practices.
Output	Output 1.2.1: Evidence-based/representative data on AMR/AMU improved for policymakers and sectors implementing AMU practices antimicrobials.
Activity	1.2.1.c Development and implementation of protocols and procedures for integrated surveillance of AMU (human health, terrestrial and aquatic animal health, in prioritized chains), as a technical basis for the development of a normative base
Leading Agency	FAO
Deliverables	 Pilot surveillance plan for the use of antimicrobials in the poultry sector. Protocol for the collection of data on the use of antimicrobials in poultry farms. Protocol for data analysis on the use of antimicrobials in poultry farms
Description	 The Pilot Plan for Surveillance of Antimicrobial Use in the Poultry Sector collects data from broiler and layer poultry farms in major production regions such as Lima, Ica, and Trujillo. The results found generated evidence for decision-making in animal health. Both AMU protocols detail the process and responsibilities for the collection and analysis of AMU data in the poultry sector, with the aim of replicability for other sectors.
Partners involved in the development	SENASA, and MSC-AMR
State/Sustainability	The products were delivered to MSC-AMR to evaluate with the corresponding health authority the implementation of the recommendations made in the final report.

ACTIVITY SUMMARY FORM	
Outcome	Outcome 1.2: Evidence base/representative data on AMR/AMU improved for policymakers and sectors implementing AMU practices.
Output	Output 1.2.1: Evidence-based/representative data on AMR/AMU improved for policymakers and sectors implementing AMU practices antimicrobials.
Activity	1.2.1.d Strengthening capacities for the microbiological diagnosis of sentinel bacteria (E. coli, Salmonella spp., Campylobacter spp., and Vibrio spp. or others) under the One Health approach, with emphasis on prioritized food chains to strengthen integrated surveillance of AMR.
Leading Agency	FAO, PAHO/WHO, WOAH
Deliverables	Capacity building plan for microbiological diagnosis and data analysis and interpretation.
Description	The capacity-building plan was implemented over the two years of project execution, starting with virtual training for thirteen (13) laboratory technicians from SENASA, DIGESA, and SANIPES, with the support of SENASICA of Mexico, the regional reference laboratory for AMR for FAO. In addition, six (06) technicians from these entities participated in an internship at SENASICA's laboratory facilities on diagnostic methods. An international forum on Surveillance of Antimicrobial Resistance under the One Health approach was also held to highlight the importance of AMR as a public health problem and to strengthen integrated surveillance of AMR in the country under the One Health approach. Likewise, a Multisectoral Workshop was developed to address the impact of AMR in the environment, to identify the factors and pathways of entry of AMR in the environment in AMR problems; as well as identify diagnostic methodologies to be developed in environmental samples. PAHO/WHO prioritized training for the verification of sample collection with SANIPES and INS. Finally, WOAH held a workshop on genomic diagnosis and sequencing of resistant microorganisms at the SANIPES facilities.
Partners involved in the development	INS, DIGESA, SENASA, SANIPES, MINAM, and MSC-AMR
State/Sustainability	MSC-AMR, committed to capacity building of those involved in AMR surveillance, plans to align diagnostic methodologies in integrated surveillance in the future.

Outcome	Outcome 1.2: Evidence base/representative data on AMR/AMU improved for policymakers and sectors implementing AMU practices.
Output	Output 1.2.1: Evidence-based/representative data on AMR/AMU improved for policymakers and sectors implementing AMU practices antimicrobials.
Activity	1.2.1.e Diagnosis of existing IT platforms and development of a proposal for a pilot interoperable platform for integrated surveillance of AMR and AMU
Leading Agency	WOAH
Deliverables	Software pilot (operational and with source code)
Description	A pilot and interoperable system software was developed through a consulting firm and with the participation of the institutions that are part of the project, based on identified and prioritized needs to support the management of integrated surveillance of AMR, including data on the use of antimicrobials in the human and animal health sector. Various sessions were held to present and validate the functional and non-functional requirements of the system. The documents to be reviewed before each session were shared with the technical areas (informatics, epidemiology, and laboratory) of each of the participating entities. Analysis and design documents are available, as well as the FrontEnd code or interfaces in code ready to be reused in the continuity of the project. The system was given the name of "PlatRAM".
Partners involved in the development	The main stakeholders involved are the Ministry of Agriculture (SENASA) Ministry of Production (SANIPES) Ministry of Health (INS, DIGESA, DIGEMID) Ministry of Environment (MINAM) Multisectoral Commission - AMR the Presidency of the Council of Ministers (PCM). specifically, specialists in the areas of informatics, epidemiology, laboratory, and others as deemed appropriate by the government authorities of the above-mentioned agencies.
State/Sustainability	The Product was delivered to MSC-AMR. The participating institutions have expressed interest in seeking resources for the development of the system and its implementation.

ACTIVITY SUMMARY FORM	
Outcome	Outcome 1.2: Evidence base/representative data on AMR/AMU improved for policymakers and sectors implementing AMU practices.
Output	Output 1.2.1: Evidence-based/representative data on AMR/AMU improved for policymakers and sectors implementing AMU practices antimicrobials.
Activity	1.2.1.f Capacity building in the analysis and interpretation of information generated from integrated surveillance of AMR under the One Health approach
Leading Agency	WOAH
Deliverables	Diagnosis and Technical Guidelines for the Analysis and Interpretation of AMR Integrated Surveillance Information in Peru
Description	The development focused on the human health, animal health and food sectors; the environmental aspect is not recommended for implementation in the short term because of its complexity and the lack of primary information. As Peru does not have a surveillance system for AMR, as well as for the Consumption and Use of Antimicrobials (AMU), the guidelines include general aspects of the conformation of a surveillance system and, on them, the aspect of analysis and interpretation of the information was included.
Partners involved in the development	The main agencies involved are SENASA, SANIPES, INS, DIGESA, DIGEMID, and MINAM.
State/Sustainability	It depends on each sector involved to use the guidelines and implement their integrated AMR surveillance systems. A roadmap is available to guide their implementation.

ACTIVITY SUMMARY FORM	
Outcome	Outcome 2.1: Optimized use of antimicrobials in critical sectors
Output	Output 2.1.1: Systems for optimized antimicrobial use strengthened in critical sectors
Activity	2.1.1.a Development of a plan and early implementation of the Antimicrobial Stewardship Program (AMS) in human health
Leading Agency	PAHO/WHO
Deliverables	Design and execution of the virtual course for the antimicrobial optimization program (ASP) within the framework of the national health training program in Peru.
Description	A training curriculum for health personnel on the appropriate use of antimicrobials was developed in coordination with DIGEMID and the National School of Public Health (ENSAP). Educational training videos were developed on the implementation of AMS in the country's health institutions. The National School of Public Health has access to a virtual course on AMS developed by PAHO, which is available for training health personnel of the National and Regional Governments. The forum "Fighting Antimicrobial Resistance in Peru" was held on November 21 and 22, 2023, as part of the Antimicrobial Resistance Awareness Week to raise awareness of the importance of AMS in the country's health institutions.
Partners involved in the development	Ministry of Health - DIGEMID Ministry of Health - ENSAP National Institute of Health
State/Sustainability	It will depend on the continuity in the coordination of activities of the partners involved.

ACTIVITY SUMMARY FORM	
Outcome	Outcome 2.1: Optimized use of antimicrobials in critical sectors
Output	Output 2.1.1: Systems for optimized antimicrobial use strengthened in critical sectors
Activity	2.1.1.b Preparation and implementation of two (02) guides on the responsible and prudent use of antimicrobials in animal health and agriculture
Leading Agency	WOAH
Deliverables	Guide on the responsible and prudent use of antimicrobials in animal health (terrestrial and aquatic animals) and agriculture.
Description	The Guide includes a general part and three specific sections on the use of antimicrobials in terrestrial animals, aquatic animals, and agriculture, as well as thematic sheets by animal species and main crops, to guide the competent authorities, private professionals and producers in the appropriate and prudent use of antimicrobials.
Partners involved in the development	The main parties involved are SENASA and SANIPES, as well as the producers of the different species of terrestrial and aquatic animals and crops covered by the Guide.
State/Sustainability	The implementation of the guide through inter-institutional agreements with producer associations will provide sustainability to the product. An addendum to an agreement has been signed between SENASA and the National Association of Pig Farmers for the implementation of the guide among its members, as well as with the National Aquaculture Society to initiate the application of the Guide in the shrimp sector.

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ACTIVITY SUMMARY FORM	
Outcome	Outcome 2.2: Improved understanding of AMR risks and response options by target groups
Output	Output 2.2.1: Enhanced capacity for the design of awareness raising, behavior change and educational activities
Activity	2.2.1.a Awareness raising and advocacy on AMR/AMU under the One Health approach, for specific prioritized groups, at national, regional, and local levels.
Leading Agency	FAO
Deliverables	 Awareness raising and advocacy strategy for the containment of antimicrobial resistance in Peru under the One Health approach. Awareness raising and advocacy strategy implemented in the poultry sector.
Description	 The Awareness and Advocacy Strategy is a framework tool for the development of awareness and advocacy actions for all sectors involved in AMR prevention and reduction actions. The development of the activity oversaw the Peruvian Poultry Farming Association (APA), the strategy was directed to four (04) stakeholders in the sector and deployed actions in 03 lines of action: capacity building, community activities, and mass discomination
Partners involved in the development	INS, DIGESA, SENASA, SANIPES, MINAM APA, small and medium scale poultry farms, and MSC-AMR.
State/Sustainability	The deliverables were handed over to MSC-AMR for the development of targeted strategies for each relevant productive sector.

ACTIVITY SUMMARY FORM	
Outcome	target groups
Output	Output 2.2.1: Enhanced capacity for the design of awareness raising, behavior change and educational activities
Activity	2.2.1.b Advocacy in higher education institutions, professional associations and scientific societies
Leading Agency	WOAH
	1. Development of a mapping of existing Professional Associations and Scientific Societies
Deliverables	2. Advocacy in the updating of curricula in Peruvian Universities and
	educational institutes.
	The product was approached as 3 sub-activities and stages. There is a
	document with the mapping of Professional Associations and Scientific
	Societies, Diagnosis of curricular plans in the Universities and educational
	institutes of Peru and Proposal for a Curriculum Improvement Plan in AMR /
	and biomedical sciences and veterinary medicine and agricultural and
	livestock sciences, the latter sub-activity being developed.
Description	The first sub activity succeeded in manning existing professional and trade
	associations in Peru, with the aim of increasing their involvement in AMR
	issues and in the activities of the Multisectoral Commission against AMR. The
	second sub-activity consisted of the analysis of the curricular plans of the
	careers mentioned above; and the third sub-activity refers to the proposal of
	curricular improvement plans regarding AMR and AMU in the careers
	of professionals of careers involved in the subject.
	1. Professional Associations and Scientific Societies of different careers
	linked to AMR/AMU.
Partners involved in the development	2. University population of the different professional careers prioritized:
	pathological anatomy, dentistry/stomatology, veterinary medicine.
	zootechnical engineering, and agronomic engineering.
State/Sustainability	The interest of professionals and scientific societies in getting involved and
	participating in MSC-AMR increased, with some associations requesting
	Veterinary Products Laboratories (Aprovet)
	It is expected that the university authorities will implement the proposal to
	update the curricular plans in the different careers prioritized in the field of
	human medicine and biomedical sciences and veterinary medicine and
	agricultural and livestock sciences.