Global program profiles

AMR MPTF: Global Integrated System for Surveillance on Antimicrobial Resistance and Use (GISSA)

Table 1: Overview

Project description

Project: **AMR MPTF**: Tripartite Integrated System for Surveillance on Antimicrobial Resistance and Use (TISSA) (ID: 00126136)

- Duration: 36 months (12th March 2021 – 12th March 2024)

The Tripartite Integrated Surveillance System on Antimicrobial Resistance and Use, otherwise known as the TISSA Data platform, is the product of a collaborative effort of three of the Quadripartite organizations namely FAO, WHO and WOAH. The Tripartite Joint Secretariat evolved into Quadripartite with the joining of UNEP into the alliance in March 2022. The resulting Quadripartite status has prompted the need to rename the TISSA platform to Global Integrated Surveillance System for AMR (GISSA) as of the QJS SMG decision in February 2024.

The TISSA platform, which is a global web-based repository on AMR and AMU data across the human, animal, plant, food systems and environmental sectors, has now been technically completed and is almost ready to be launched. The pending work include technical edits and cosmetic changes of the site to reflect the status of the Quadripartite, update with new WOAH logo, uploading of data from the respective organizational databases (GLASS, ANIMUSE, In-FARM), as well as the integration of UNEP. At the same time, it is important to recognize that collaborating organisations are at different stages of development with their respective information systems. While WHO and WOAH have already established and rolled out GLASS and ANIMUSE for several years, FAO is still finalizing the development of InFARM and plans to announce an open call for data in 2024. This discrepancy will inevitably affect the timing of information sharing across the three organizations. FAO will not be able to share aggregated information on AMU in crops and AMR in agri-food systems until at least 2025 when the first report with baseline AMR data is expected to be produced and its data integrated into the GISSA platform.

Highlights of the Project so far

Common Activities

Development of the system started in 2021 with an initial phase of requirements gathering to define the high-level needs and requirements for the GISSA IT data platform. An IT vendor was hired and the development of the project began at the end of 2021 and continued until March 2022. Representatives of all organizations (FAO, WOAH, and WHO) met regularly to discuss the ongoing development of the system and to solve any outstanding issues.

An extensive testing, bug fixing and completion phase of the project was then initiated where representatives from all organizations (FAO, WOAH and WHO) systematically tested the IT system that had been developed by the external IT vendor.

Following the testing and completion of the initial IT system an initial maintenance phase of the project was carried by issuing an RFP (Request for Proposal) and carrying out a vendor selection process. Once completed, representatives then continued to identify areas of improvement in the system with a view to launching the system live to the public.

Discussions took place regularly on the time and scope of the launch and how the organisations collectively wanted to launch the system. As well as this, the name of the project was discussed as something that might need to change as a result of the addition of UNEP to the Quadripartite. These issues were then brought to the Quadripartite Joint Secretariat (QJS) where it was decided that the project would be brought to the QJS Senior Management Group (SMG) for consideration. Moreover, the launch of GISSA was delayed so as to allow for organizations to secure data from their Members and finalize the testing of safe data sharing through the platform.

Throughout 2023 the GISSA system has been in standby, pending the decisions from the QJS SMG on the following topics:

1. The name change of TISSA to reflect the addition of UNEP into the Quadripartite and therefore remove Tripartite from the name
2. The date and scope of the launch of the data system
3. The integration of environment data from UNEP into the system
4. Future governance and funding of the system

Following the SMG meeting of February 2024 it was agreed to change the name from Tripartite Integrated System for Surveillance on Antimicrobial Resistance and Use (TISSA) to GISSA (Global Integrated System for Surveillance on Antimicrobial Resistance and Use) and to proceed with a launch of the system in November 2024 provided that sufficient sustainable funding was secured. It was also decided to explore the possibility of integrating the GISSA system into the QJS website which is hosted on the SiteFinish website solution on WHO infrastructure. Although proving an initial investment, this would provide cost saving in future maintenance of the system. At the time of the development of GISSA this option was not available due to lack of agreement to host the website using WHO SiteFinity.

FAO Activities

- The first beta version of the International FAO Antimicrobial Resistance Monitoring platform/ system (InFARM) was developed and tested by a limited number ofcountriesThis version included the specifications for building the interoperability with GISSA and for generating files for direct export to GISSA from the InFARM platform. FAO is currently finalizing the IT development to launch a first open call for data for InFARM in 2024.
- FAO anticipates that there will be a need for a light revision of initial specifications for interoperability with GISSA as the InFARM data model suffered minor changes. There will also be a need to do a second testing of the GISSA platform for data upload from InFARM.
- There are assigned dedicated human resources for the GISSA project.

WOAH Activities

- The ANImal antiMicrobial USE (ANIMUSE) Global Database was launched in September 2023. Since its creation, ANIMUSE included the the integration and export of data for GISSA. By the end of 2023, all WOAH Members have been trained in the use of ANIMUSE and continue to provide AMU data to WOAH. During the workshops, many countries have expressed their interest to have a integrated portal for analysis of AMU and AMR data across sectors.
- Initial testing of the GISSA interface for data upload from ANIMUSE was completed successfully. Dedicated GISSA dashboards and reports have been developed within ANIMUSE specifically for this purpose.

WHO activities

- Management of the project - both internal between all organizations as well as external with the IT vendor during the active development phase of the project.
- WHO also organized and purchased the hosting domain and services, and it is managing the technical hosting of the system.
- WHO organized the initial maintenance contract with the external IT company and managed all aspects of this initial maintenance phase and has supported the system and reported periodically to the QJS during the latest inactive phase of the project.
- Following the SMG conclusions, WHO initiated further discussions with the QJS to assess the hosting of GISSA as part of the QJS AMR website.
- Initiated internal discussion to assess the use of the WHO Data division's Datadot platform for online GISSA reports. The assessments are ongoing and results should be available in April 2024.

Main challenges

Common

Some of the major issues from the previous project year remain into this year for GISSA and the development of a shared IT platform for shared AMR and AMU data. Such as:

1. the standardizing of countries and regions between the three organizations. It is currently impossible to use a common map for regions and a further review of a standard map at the country level between the organizations is needed. Until this is resolved, GISSA will need to display separate maps for AMU and/or AMR data per organization. This lack of cohesion may cause confusion.
2. the critical challenge of individual agreements between each organization and its Member States. Some organizations require specific agreements to share data in GISSA in addition to the respective organization database/platform.
3. As reported in the previous year, the critical point is the level of data submission and reporting. Due to rules in each organization, the data will be submitted either at country or regional levels; independently of the submission level, data will be reported at country or regional levels. The long-term objective of the three organizations is to report country-level data and compare sectors in the future.
4. Each organization has its own data reporting period. These will need to be aligned.

FAO

FAO is establishing a data platform hosting AMR data from the food and agriculture sectors at the global level. The organization finalized the work with an external vendor to develop an IT solution for the first pilot version of InFARM, that was tested by countries. One of the main challenges is getting countries trained in the use of the platform and the organization is currently finalizing a manual for operationalization of the platform that will be jointly published with the first global open call for data in 2024.

WOAH

One of the challenges has been to find a harmonized way to provide reports for GISSA as AMU data it is owned by WOAH Members and it is therefore confidential. Since the launch of ANIMUSE Global Database (2022), WOAH has asked its Members for their desired level of confidentiality for their AMU data; as of April 2024; so far, 24 Members have decided to make their data publicly available. It will take at least two years for WOAH to further explore countries' willingness to share their data. This will mean that for Members for which access to AMU at the country level is not an option, WOAH must assure their confidentiality even if countries in the same region decide to make their AMU data public. In this situation, AMU data will then be displayed in GISSA at the regional level.

WHO

For WHO the issues have remained more or less the same as the previous reporting period:

1. The procurement process of the IT vendor, for example, in WHO is streamlined for procurement unique to WHO but nothing is in place for such a "joint" contract between WHO and other organizations.
2. Another major hurdle is hosting a Quadripartite website by one organization, including cybersecurity, architectural and maintenance considerations. This could be alleviated with an agreement to transfer the GISSA website to be part of the QJS website.
3. Integrating the notion of the Quadripartite organizations in contractual procedures would clarify the work of the technical and administrative teams.
4. Use and tailoring of WHO internal tools for Quadripartite use (website, online visualization tools...)

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

A critical factor, however, is the need to ascertain funding availability to sustainably maintain the operations of the system. The work was funded via the AMR MPTF global project stream, which has now expired. New funding will be urgently required to launch, maintain and update the system to keep track with the new developments in the systems of the different organizations as well as to pay outstanding costs. Most urgent is the outstanding cost of USD $6,000 for running the website during testing in the year 2022 and 2023 will need to be paid. The estimated annual cost for simply maintaining (with no new features) the IT for effective functioning of the system amounts to between USD $61,000 – $81,000, which includes website maintenance contract – approx. USD $50,000/year; Azure hosting – USD $6,000 USD/year, for the website and content; GISSA domain names purchase -approx. USD $5,000/year. This cost does not include database hosting, as until now, during its pilot phase this has been provided free of charge on WHO XMart. This arrangement is not guaranteed, especially as the quantity of data is expected to grow after the launch of the system, this could be an additional cost of up to $20,000 a year. Additionally, the estimated staff costs to simply maintain the current system post launch, and not including any requirements analysis or further developments, are expected to be an estimated 172 days/year. Comprised of:

- to maintain the website, update web pages, post news/events/documents, troubleshoot any issues with the website and hosting (1 staff) - 72 days/year i.e., approximately 6 days/month;
- and data management upload and validation (1 staff per organization) - 100 days/year i.e. (25 days/year/organization, currently 3 organizations, 4 when UNEP is included).

The current scope of GISSA/TISSA is encouraged to expand beyond a mere web-based data repository and enable integrated data analysis across the four sectors including incorporating UNEP into the platform.

To cover further development of the system, a full-time project manager and a full-time data manager are needed. To cover fully integrated analyses and regular joint reports, one full-time technical staff for each of the organization are needed. In total to move from a simple repository to advanced website and joint analysis, 6 full-time staff are needed.

Did you manage to overcome these challenges? If so, how?

The main way to overcome the challenges relating to standardization is for GISSA to manage extra functionalities, mostly around countries and maps, that has meant that the system has grown in complexity to fulfill legal requirements from the three organizations.

Challenges with the website layout and hosting may potentially be resolved through the integration fo the system into the QJS website, using SiteFinity and hosted the WHO IT environment.

The ultimate issue of the launch of the system is now pending the sourcing of sustainable funding for this launch.

Learning Innovation

There has been substantial learning during this project. In particular, the organizations have learnt a great deal about data platforms and software available as well as data harmonization and standardization between the organizations and surveillance areas. Such lessons could be used as guidance for countries as they set up their own data platforms.

Table 2: Review of progress against log frame

2.a Log frame outcomes

MPTF Outcome	Indicators	Assumptions – any revisions?
Evidence base/representative data on AMR/AMU improved for policy-makers and sectors implementing AMU practices	Information on AMU available and harmonized across sectors, provided on a regional level Number of countries for which data across sectors will be available in the TISSA platform Number of annual visits to the TISSA website by specific reports	

2.b Log frame outputs and associated indicators

% progress against indicator: Based on time, budget and activities underway/completed

Categories: 0% 1-25%; 25-50%; 50-75%; 75%-99% 100% **Choose best option**

MPTF Output	Indicators	Progress description (activities started/completed)	Indicator % met	Assumptions – any revisions? Put here
Evidence base/ representative data on AMR/AMU improved for policy-makers and sectors implementing AMU practices	A.1 Information on AMU available and harmonized across sectors, provided on a regional level Baseline value: No harmonized AMU data across sectors available on a regional level	The IT system is fully functional and complete. The team is now awaiting a decision for sustainable funding for the launch of the system data in order for it to go live and be available for data upload and view by the public.	75%;	*Currently, countries are independently reporting data on AMR and AMU in different sectors to WOAH and WHO monitoring systems. FAO monitoring system (InFARM) has been developed..* *During the initial data upload, the Tripartite organizations will identify available countries to contribute with AMR and AMU for humans or animals at the end of the project duration. It is expected that the number of countries providing all sets of data, including AMR in animals, will increase in the long term.* *When AMR data from food and plant sectors are available, numbers will be reported for this type of data and sector. Similarly, when data in the*

	Target value: Harmonized AMU data across sectors available at least by region			*environment become available, the number of countries providing this information will be reported.* *The Tripartite organizations initially expect around 30 countries to report human AMR and AMU and animals AMU at the time of the Project.* *In terms of the use of the data, initially, a simple indicator will be the number of visits to the website.* *At this point the system is functional and only needs a few content updates to be ready to be fully launchedand then we can see the data to inform these indicators.*
	A.2 Number of countries for which data across sectors will be available in the TISSA platform Baseline value: no countries information displayed in TISSA Target value: 25 countries reporting AMR and AMU data in humans and AMU data in animals by second half of 2023	The system is now completed and fully functional. However, as the team is now awaiting a decision for sustainable funding for the launch of the system data has not yet been submitted, this indicator is still in progress. However, each Organization's surveillance programs already collect the data that will ultimately be submitted to the TISSA platform. WHO, for example, collects data on AMR from over 100 countries.	75%;	
	A.3 Number of annual visits to the TISSA website by specific reports Baseline value: No visit currently happens	The website is not yet live, so this indicator can be better measured upon successful launch.	0%	

	Target value: more than 1000 visits annually			
A. Systems for generating, analysing, and interpreting data on resistance and consumption/use patterns developed or strengthened	A.1. Development of the TISSA Platform Baseline value: no IT platform available Target value: the TISSA platform developed	The system is fully developed and ready for full launch with only a few minor content updates needed before this launch (for example simply to update the logo of WOAH). This will be done upon the decision of the date and scope of the launch.	100%;	The decision for a decision for sustainable funding for the launch of the system data. There is therefore a delay in the launch of the system. A risk that this creates is that content will need to be updated as it is already becoming out of date.
	A.2 Number of countries included in the TISSA database Baseline value: No countries are included in TISSA Target value: 70 countries included in TISSA and having at least one set of data	This indicator is in process and will be better measured upon the launch of the system	0%	*In terms of countries included in TISSA, TISSA will report the number of countries included in the database for each sector and the type of data at the time of the Project. The number of countries reporting at least one set of data is expected to be larger than for the outcome indicator 1 as some countries will not have access to all data sets. In the long term, it is expected that this indicator and outcome indicator 1 will converge.* *Due to data sharing policies, it might be that data will not systematically be initially reported at a country level but a regional level.*
	A.3 Display of harmonized data across sectors at the regional level Baseline value: No harmonized data across sectors displayed at the regional level Target value: Harmonized data	During the requirements gathering phase of the Project involving subject matter experts from all organizations, the needs for data visualizations have been defined for each surveillance program. However, during this exercise, some issues have arisen regarding the potential to harmonize the data as detailed in the risk above.	25-50%;	As detailed above, there is an issue with displaying data from all organizations on one common map. The intermediate solution is to have a map distinct for each Organization's data.

	displayed at the regional level	The regions for each Organization are distinct, and thus it will be difficult to display such data on one common map at the regional level.		
B Strategic global level governance advocacy initiatives on AMR implemented	B.1 Number of global initiatives supported by TISSA data Baseline value: no global initiatives supported by TISSA data Target value: Tripartite organizations expect *Codex Alimentarius* to refer to the use of the TISSA platform	This output will be better measured, and activities will be started once the IT system is launched.	0%	*The Tripartite organizations are already involved in global initiatives related to AMR and AMU across sectors.* *The three organizations also have a leading role in global initiatives.* *TISSA would be a unique global independent database having AMR and AMU data across sectors*

Risk matrix – any changes?

Risk description	Risk Category: Contextual Programmatic Institutional	Worst case consequence for the Project	Risk Score		Mitigating action	Action owner
			Impact	Likelihood		
Non-delivery of the TISSA platform	Programmatic	Without the web-based platform, data integration and the harmonized display will not be possible	High	Low	The development of a joint report with an analysis of the current data may provide an interim solution not viable in the long term.	WHO, WOAH, FAO

Availability of data in the platform	Institutional	No data for a specific sector will not be made available to users	High	Moderate	WHO and WOAH already have a global system for surveillance of AMR and AMU in humans and for AMU in animals, respectively. FAO is identifying the specific areas for capacity building in AMR surveillance in food and agriculture by applying the FAO-ATLASS tool. AMR data management was recognized as one of the areas needing more support. The expansion to more countries and regular assessments through this tool will strengthen the capacity to generate, analyse, and report AMR data. AMR data in food and agriculture sectors are currently being collected through FAO projects and other initiatives in countries, but FAO has now developed and is training countries in the InFARM platform . Other organizations may also have interesting datasets that they will make available on a case-by-case basis. The generation of AMR data from the environment is still limited and in an inception phase. This is a cross-cutting issue for the three organizations (AMR bacteria, genes, antimicrobials, and residues are discharged into the environment by all sectors represented in the Tripartite). FAO will take the lead in facilitating discussions on environmental monitoring data together with UNEP.	WHO, WOAH, FAO