



USAID
FROM THE AMERICAN PEOPLE

HRH2030
HUMAN RESOURCES FOR HEALTH IN 2030



Human Resources for Health 2030 | January 2021

Training Management Information System Sustainability Plan

This material is made possible by the generous support of the American people through the United States Agency for International Development (USAID) under the terms of cooperative agreement no. AID-OAA-A-15-00046 (2015-2020). The contents are the responsibility of Chemonics International and do not necessarily reflect the views of USAID or the United States Government.

Acronyms

FUAT	Follow Up After Training
HCDF	Human Capital Development Fund
HR	Human Resource(s)
HRH2030	Human Resources for Health in 2030
HRIS	Human Resource Information System
INS	Instituto Nacional de Saúde
ICT	Information Communication Technology
IT	Information Technology
MOC	Memorandum of Cooperation
MOH	Ministry of Health
MOF	Ministry of Finance
NSPHS	National Strategic Plan for Health Sector
PSC	Public Service Commission
SOP	Standard Operating Procedure
TMIS	Training Management Information System
USAID	United States Agency for International Development
WHO	World Health Organization

Acknowledgement

The Executive Director of INS appreciates the USAID-funded HRH2030 Program team and its technical team's contribution to the development of this Sustainability Plan for the Training Management Information System (TMIS), and all participants with whom the team met for their valuable contributions to the completion of this final draft.

The INS acknowledges and appreciates USAID's HRH2030 Program, implemented by Chemonics International, for the technical and financial assistance provided for the development and implementation of the TMIS and improvement of mid-level INS manager's capacity to use data to make decisions. This plan will be used to carry forward this system and use of the data in the short, medium, and long term.

Special thanks are also extended to those who participated in the consultation process. Without their valuable inputs, many important issues would have been overlooked.

Contents

Acronyms.....	1
Acknowledgement.....	1
Contents.....	2
Background.....	3
Purpose of the Sustainability Plan.....	3
Target Audience of the Sustainability Plan.....	3
How to use the Sustainability Plan.....	3
Sustainability Plan.....	4
Governance Structure.....	4
Institutionalize and review governance structure of TMIS.....	7
Incorporate TMIS-related tasks into the mandate of Directorates and Units, including job descriptions of individuals supporting with TMIS implementation.....	7
Organize regular institutional governance and coordination meetings with state institutions and development partners.....	8
Institutionalization of TMIS.....	8
Revising INS Strategic Plan to include training data management.....	8
Develop data standards and SOPs for the use of TMIS and interoperability between relevant HRH entities' information systems.....	9
Conduct regular system updates.....	9
Review implementation for successes and challenges.....	10
Roll out use of TMIS and training data.....	10
Leverage international communities of practice and documentation.....	10
Staffing & Capacity Building.....	11
Review staffing plan.....	11
Engage in local partnership with universities or a technology vendor.....	11
Build capacity of current staff.....	12
Integrate TMIS training into INS National Curriculum.....	12
Financing.....	13
Costing inputs to maintain and upgrade TMIS.....	13
Include TMIS maintenance and enhancement in the annual budget.....	14
Approaching potential donors to fill gaps.....	14
Conclusion.....	15
Annex I: Competencies for Information System Personnel.....	16
Annex II: Proposed Additional Roles and Responsibilities to Support and Maintain TMIS.....	17

Background

Purpose of the Sustainability Plan

Since its establishment in 2011, the National Institute of Health (INS) has made significant efforts to become a center of excellence for in-service training, research, and management of the existing health workforce in Timor Leste. Despite this progress, health workforce challenges in Timor Leste remain, ranging from insufficient quantity, skill mix, and distribution of qualified health workers to limited financial support to sustain HRH, and low performance and motivation, which has resulted in inequitable access to quality services by the Timorese people. The underlying factors contributing to these HRH challenges are the limited completeness and quality of HRH data, as well as the limited capacity of managers to use HRH data for evidence-informed decision-making.

It is clear that improvements in the collection, management and analysis of training data are needed, as well as a sustainable information system for the storage of training data to respond to challenges seen when working to meet goals. Specifically, the lack of an information system has exacerbated several data challenges including poor management of training data, difficulty in tracking of health worker trainings resulting in duplicative training by different partners, and difficulty organizing trainings and producing reports for partners and donors/funders.

To address the issues discussed above, the United States Agency for International Development (USAID) funded Human Resources for Health in 2030 (HRH2030) Program to develop a dynamic Training Management Information System (TMIS). TMIS is a customized instance of the open-source integration Human Resources Information System (iHRIS) Train software, developed by the USAID-funded Capacity Project.

To ensure the sustainability of the system and associated activities, the HRH2030 Program worked with the INS to develop this five-year Sustainability Plan. It is envisioned that this Sustainability Plan will provide the INS a guide to achieve its long-term goals and document strategies to continue to maintain, develop, and upgrade the TMIS.

The Sustainability Plan comprises four sections which focus on the governance structure of TMIS, actions for institutionalization of the system, staffing/capacity building needs, and optimal financing to sustain the system. Each one of these focus areas contains plans and strategies to enable the decision makers to track and sustain progress.

Target Audience of the Sustainability Plan

This plan has been developed for the Council of Directors of INS, head of departments in INS, trainers, municipality health officers, human resource focal points, training providers and donors/sponsors who will be the users of TMIS. For the Council of Directors, the plan should serve as a general reference for how TMIS will be managed and sustained. For the TMIS Data Clerk and other end users, the plan will serve as a guide on how to coordinate with the INS National office. For the training providers and donors/sponsors, the plan will serve as a key document to coordinate efforts between stakeholders and partners to ensure continuous use of the system.

How to use the Sustainability Plan

This plan should be used to guide activity implementation for enhancing, maintaining, and sustaining TMIS. TMIS implementation is progressive in nature, and as such, activities do not need to be implemented in sequential order. Rather, activities should be implemented as resources and inputs become available, prioritizing quick wins. This plan will guide: roles and responsibilities for management and use of the TMIS,

technical activities to institutionalize the TMIS, key areas to target for staffing and capacity building of local staff to sustain the system and provide guidance for financing TMIS.

The plan is a living document. Therefore, activities will change as health information systems mature in Timor Leste, additional uses for TMIS are identified, and data sharing processes mature. As the context evolves, the INS and its stakeholders should revisit and redefine the activities under the governance, institutionalization, staffing/capacity building, and financing sections of this document.

Sustainability Plan

As noted earlier, this sustainability plan consists of four main areas: governance structure, institutionalization, staffing and capacity building, and financing. The section dedicated to governance structure focuses on establishing a structure to define roles and responsibilities at all levels to manage and maintain TMIS. It then suggests incorporating TMIS-related tasks into the mandate of the work units and directs readers to an annex of job descriptions for staff dealing with TMIS implementation. To ensure a shared understanding of the policy changes and/or management related to TMIS, this section advises INS to organize regular institutional governance and coordination meetings with state institutions and development partners.

The section on institutionalization of TMIS discusses the need to revise the INS Strategic Plan to include Training Data Management as one of its strategic priorities. To operationalize the inclusion of TMIS in the Strategic plan, it suggests updating existing TMIS-related guidelines and SOPs. This section then suggests performing regular system updates to ensure the system remains relevant and up to date. In order to ensure that the TMIS can work together with other systems for efficient data sharing, this section also recommends establishing conditions for interoperability between relevant HRH entities' information systems. It concludes with a proposal that the INS review implementation for successes and challenges.

The staffing and capacity building section stresses the need to review existing staffing plans and recruit additional information system personnel. It also dives into the need for investing in technical capacity to ensure that the INS has the required means and technical know-how to update, enhance and maintain TMIS. Aspects related to ensuring the INS has the human capacity to carry forward implementation of the system, coordination with key stakeholders and dissemination and use of the data is also discussed. All the capacity building efforts that have been provided by HRH2030 should be integrated into INS national curriculum to ensure it cascades to the sub-national level. To complement these efforts, the INS may also need to engage in local partnerships with universities or a technology vendor to ensure it has the capacity to further develop and enhance the system in the future.

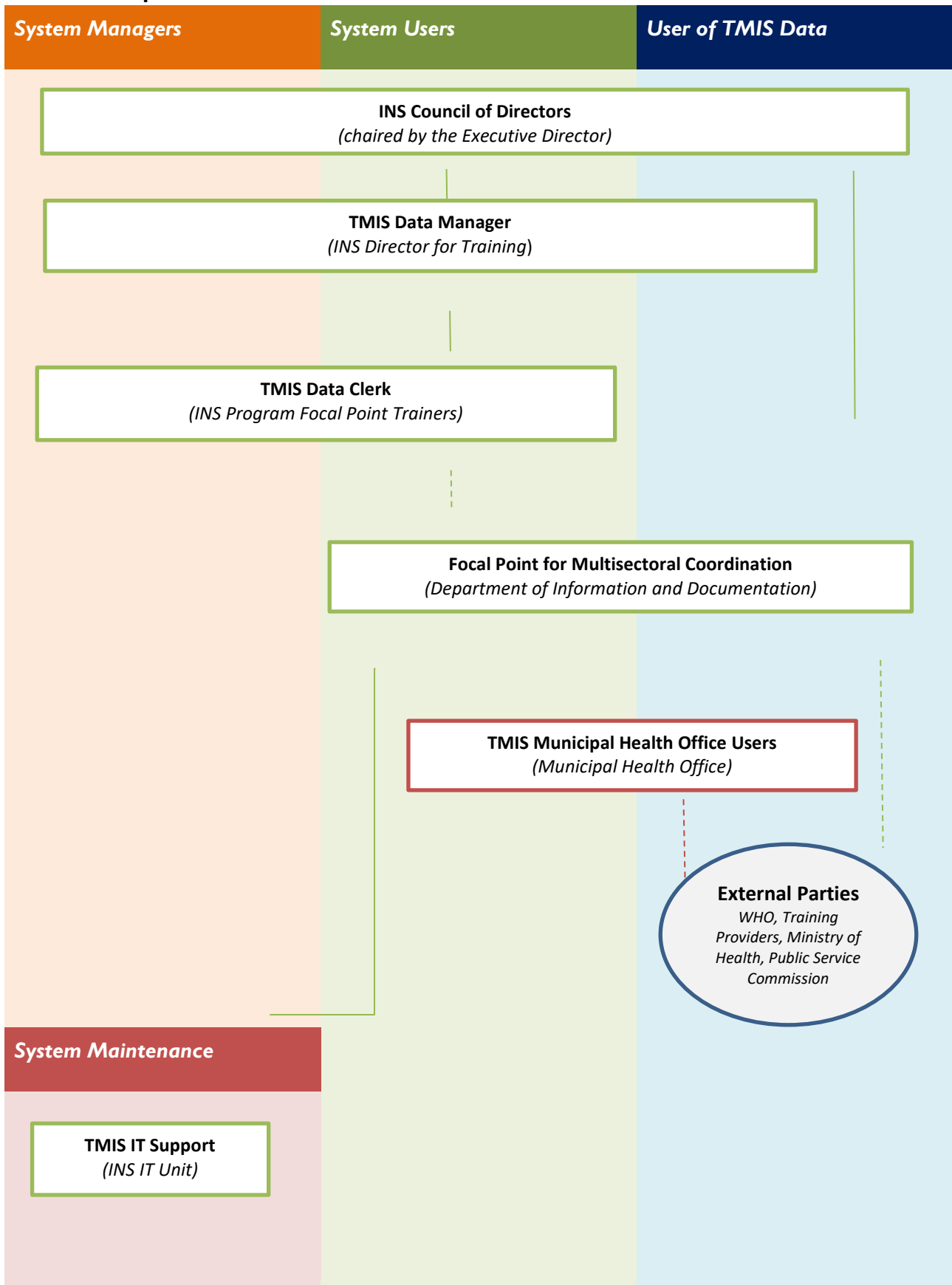
The final section, financing, focuses on the budget to fund TMIS and suggests actions to fund any gaps identified, i.e. approaching potential donors and development partners.

Governance Structure

A governance structure is critical for determining the strategic direction of TMIS, mandating the sharing of responsibilities among actors at all levels, determining protocols and procedures for how the INS will share training data between institutions and ensuring high quality and complete data to assist in decision making. The proposed governance structure includes external parties such as the Ministry of Health, World Health Organization (WHO), and other training providers. These external parties will ultimately be the end-users of the data captured within the TMIS and will insist that the training data produced meet their needs for decision making. While the Executive Director is the main coordinator and point of contact for external

parties, the Council of Directors has the sole authority to make decisions in regards to TMIS. Below is the proposed Governance Structure.

Exhibit I: Proposed Governance Structure



In order to operationalize the proposed governance structure above the following three activities are proposed.

Institutionalize and review the governance structure of TMIS

The first activity to be implemented to ensure operationalization of the proposed structure is to institutionalize and review the governance structure of TMIS. During the first year of the TMIS implementation, the INS should establish and communicate clear roles and responsibilities among the actors within the proposed government structure. These roles and responsibilities need to be formalized and institutionalized through the Council of Directors’ decisions and embedded into the existing INS organizational structure.

As the TMIS matures and information systems grow in Timor Leste, the INS may wish to revise the TMIS governance structure to identify potential modifications and changes required to meet evolving needs of the INS.

Incorporate TMIS-related tasks into the mandate of Directorates and Units, including job descriptions of individuals supporting with TMIS implementation

While reviewing the governance structure of TMIS, efforts should also be made to ensure that work units and individuals who will manage the TMIS understand their new roles and responsibilities. The INS Council of Directors may wish to review the current INS structure to redefine roles and responsibilities to include TMIS-related tasks. Following this, the Human Resources Department in the INS will have to revisit job descriptions of staff supporting TMIS implementation. On the basis of additional roles and responsibilities of their work units, their individual job descriptions should also be reviewed to incorporate TMIS-related tasks. Exhibit 2, below, provides a high-level overview of proposed roles and responsibilities for the INS and external parties. More detailed examples of roles and responsibilities, to be incorporated into existing job descriptions, have been included in Annex I.

Exhibit 2: Proposed Roles and Responsibilities

National Institute of Health	External Parties
<p>Overall, TMIS will be led by the Council of Directors chaired by the INS Executive Director who has the full authority over TMIS. These actors will provide strategic direction for the use of TMIS and TMIS data and serve as the national oversight for TMIS implementation at a high level, advocating for multi-sectoral coordination and promoting the use of INS training data.</p>	<p>Due to the nature and wide use of TMIS, external parties are also included in the TMIS governance structure. Actors such as WHO, Public Service Commission, Ministry of Health, Parliament and Prime Minister Office are the users of the training data and information.</p> <p>To ensure this multi-sectoral coordination, the Department of Information and Documentation under the Directorate of Training in INS will serve as the focal point for multi-sectoral coordination and data standard for TMIS.</p>
<p>National Director for Training is the official designated as the TMIS Focal Person/Data Manager who will ensure effective training data management and sharing</p> <p>The National Director will be supported by the Heads of the Departments of Identification and Training and Information and Documentation. The head of the Department of Identification and Training oversees managing data and entry of data into the system and ensuring that key stakeholders are informed of progress and analysis. The head of Department of Identification and Training should have experience in management, entry and quality assurance for training data. The head of the Department of Information and Documentation is the unit responsible for information communication technology (ICT) and information systems in the absence of a proper ICT Unit.</p>	
<p>Program Focal Point Trainers, from the Department of Identification and Training, will be the primary user of TMIS to input training information and data (i.e. training instances, trainer information, participants, training results) into the TMIS.</p>	
Municipal Health Office	
<p>Municipality Health Officers are actors at the sub-national level who will ensure proper nomination of the participants for INS trainings.</p>	

Detailed proposed additional roles and responsibilities to support and maintain TMIS can be found on the annex II.

Organize regular institutional governance and coordination meetings with state institutions and development partners

The final proposed Governance Structure activity is to organize regular institutional governance and coordination meetings with state institutions and development partners. Since 2015, the INS has strived to implement its mandate of providing quality in service training and coordinating health research by establishing strong cooperative ties with development partners, government institutions, and various institutions for higher education and research. With the establishment of TMIS and the new proposed TMIS government structure, this cooperation needs to be strengthened even further in the following years. INS should consider organizing regular institutional governance and coordination meetings with these institutions and partners to promote and coordinate use of the TMIS and ensure shared understanding of the policy changes and/or management related to TMIS.

Actions for Sustainability

Activity	Stakeholders for INS to Engage	Timeline		
		Short Term (3-12 months)	Medium Term (1-3 years)	Long Term (3-5 years)
Institutionalize and review governance structure of TMIS	WHO, PSC, Ministry of Health (MoH)	X	X	
Incorporate TMIS-related tasks into the mandate of Directorates and Units, and job description of Staff dealing with TMIS implementation	MoH, Public Service Commission (PSC)	X	X	
Organize regular institutional governance and coordination meetings with state institutions and development partners.	MoH, WHO, PSC, Training Providers, etc		X	X

Institutionalization of TMIS

TMIS software, built on the open-source software iHRIS Train, has been customized and is ready for operationalization based on the requirements of the INS and the Timorese context. A minimum data set of health worker data, such as name and ID, as well as INS' 2020 historical training data, has already been successfully entered into the system. As of January 2021, INS has yet to input the remaining information and profiles for each health worker into the system. Additionally, historical training data from 2016 - 2019 needs to be cleaned and standardized so that it can also be input into TMIS.

While these are great accomplishments, it remains critical that the INS institutionalize TMIS to ensure buy-in and ownership. Considering the current progress and the gaps identified, the below activities are proposed.

Revising INS Strategic Plan to include training data management

The Timor Leste National Strategic Plan for Health Sector (NSPHS) (2011-2030) has been the primary policy document that guides all health sector services. Capacity development and health workforce training to produce qualified human resources has been one of the primary strategic priorities. Consistent with the

NSPHS and, in order to guide its institutional development and implement its mandate, the INS has also outlined its strategic objectives in its five-year Strategic Plan 2015 – 2020. The revised version, 2020 – 2024, is under discussion though it appears that the draft of INS strategic plan has not considered TMIS activities as one of its strategic priorities. The policy direction for training data management is not defined clearly in the current draft of its 5-year Strategic Plan. Without clear policy direction for data management (i.e. maintaining, using, and sharing data), the INS lacks clarity on how the TMIS will be operationalized and sustained. As INS is developing its new Strategic Plan, it is recommended to include an initiative regarding further enhancements to management of training data through continuous upgrading and maintenance of the TMIS.

Develop data standards and SOPs for the use of TMIS and interoperability between relevant HRH entities' information systems

In order to ensure that the TMIS remains relevant and utilized by the health sector, the interoperability of TMIS with other existing health systems such as MOH-led HRIS, Saúde na Família, SISCa, Public Service Commissions' Personnel Management Information System and DHIS2 is essential. This effort to ensure interoperability with MOH-lead HRIS should be the priority within the first year of TMIS implementation. One of the conditions for interoperability is the use of the same data standards across systems. Due to the absence of a formal agreement regarding data standards in the country, INS has made an effort to cooperate with the MOH to ensure TMIS is using the same standard for health worker profiles and information as used in the MOH-lead HRIS. However, continued coordination is still needed with the MOH to confirm/validate these data standards. Once TMIS fully complies with MOH-led HRIS data standard, INS should seek to establish a Memorandum of Cooperation (MoC) for data sharing with the MOH to ensure both information systems work together within and across organizational boundaries in order to interpret and use data comprehensively for the effective delivery of healthcare for individuals and communities.

Furthermore, in the short run, the INS should also develop a data dictionary based on these data standards for TMIS to capture the names, definitions, and attributes of data elements being used in the system. The dictionary will help provide guidance on interpretation, accepted meanings and representation of the data.

To support the interoperability of the systems and operationalize the implementation of TMIS, INS should also develop relevant Standard Operational Procedures (SOPs) and guidelines. These SOPs and guidelines will provide step-by-step instructions to help managers, users and partners carry out routine management and operations of the TMIS. These SOPs and guidelines should be followed in coordination with other partners via a technical working group on interoperability, or data sharing, with the INS-lead TMIS. This technical working group must ensure that the agreed upon data standards meet full compliance with other stakeholders for long term interoperability.

Conduct regular system updates

TMIS is not a static system and will thus require changes from time to time to respond to the evolving needs of users. It is anticipated that there will be changes or revisions in content, modules, data forms and fields to improve availability of data in the system and/or functionality of the system to respond to user needs. Regularly scheduled assessments to inform system revision is an important way that the INS can ensure the system remains current and keeps pace with the training service developments. Beyond that, where possible, the INS Information and Documentation team is given the opportunity to play an active role in the enhancement of the system by tailoring parts of the system towards meeting INS interest.

The request for revision or modification may come from trainers or any individual with particular interest, though such requests should be channeled through the head of the Departments of Identification and Training. Requests will be discussed with the Director of Training before being included in the agenda for

the discussion with the Council of Directors for approval. Decisions made on such requests will then be implemented by the Director of Training through his/her Information and Documentation department.

It is expected that changes or modifications to the system within the first year of TMIS implementation will be more frequent. Guidelines for requesting changes or modifications should be established within the first year. After this first year, it is anticipated that changes or modifications should only be made within two year intervals or another agreed upon timeline.

Apart from functional modification and changes, the INS must ensure that the TMIS software is also regularly updated to improve the stability of the software and remove outdated features. Technology advances at such a rapid pace, producing better and more efficient hardware with increased security. Therefore, the INS should prioritize upgrading hardware to ensure that the TMIS hardware follows best practices in security, connectivity, and user experience.

Review implementation for successes and challenges

During annual institutional governance and coordination meetings, TMIS implementation should be reviewed to identify successes, challenges, and areas for improvement. The purpose of these reviews is to determine what works and what does not work to inform improvement in further implementation of the system. This review may include, but should not be limited to, the process flow, governance and institutionalization, roles and responsibilities of the partners, SOPs and guidelines, data standardization, data sharing, and data use. Improvements should be defined, documented, and shared for implementation.

Roll out use of TMIS and training data

TMIS was successfully developed and delivered to the INS in February 2021. INS managers and trainers, as well as IT staff, have attended required trainings to improve their capacity in utilizing the system as well as using the training data to make decisions. However, the system will not reach its optimal use if it is not rolled out to users outside of the INS such as at the sub-national level and implementing partners, i.e. health training providers. The TMIS user training and data use training, led by the INS trainers, should be conducted again to include users at the sub-national level to ensure they possess the same level of capacity and know-how to use the system and to be able to link data to actions (see Capacity Building below for more details).

It is equally important that training data be shared with TMIS users at all levels. As of now, most data are manually collected from various training providers and from municipal health offices. However, these data providers have almost no access to training data once they are collated and maintained at the INS. With TMIS, data collection and sharing with these levels can be done through the system. The INS should develop standardized data collection forms to respond to events when users are not able to enter data directly into the system. These forms need to be disseminated and socialized. In addition, SOPs and policies for use of the system and data quality assurance need to be developed to ensure that the system is effectively utilized, and that the data collected and shared are of high quality.

Leverage international communities of practice and documentation

As noted above, the software selected for TMIS is the open source software iHRIS Train. Being open source, the software is free to download and install and is accompanied by an international community of practice and online documentation. This community of practice, which can be engaged through a Google Group and Slack, allows the INS IT staff access to iHRIS experts throughout the world. Should the INS run into an issue, or have a question, they can contact the iHRIS community of practice on Google Groups (ihris+subscribe@googlegroups.com) and/or Slack (<https://ihris.slack.com/>). In addition, should the INS be in search of a tool for implementation or technical reference for systems administration, online

documentation for iHRIS Train can be found at the iHRIS website, <https://www.ihris.org/>, iHRIS Launchpad <https://launchpad.net/ihris-train>, and iHRIS Wiki https://wiki.ihris.org/wiki/Technical_Documentation.

Finally, the community of practice should be monitored for future updates to the iHRIS core software and used by the INS as a key resource for updating iHRIS Train.

Actions for Sustainability

Activity	Stakeholders for INS to Engage	Timeline		
		Short Term (3-12 months)	Medium Term (1-3 years)	Long Term (3-5 years)
Revise the INS Strategic Plan to include Training Data Management	Development partners, other training providers, MoH	X		
Update standards, guidelines, and SOPs	MoH		X	
Conduct regular system updates	MoH	X	X	X
Establish conditions for interoperability between relevant HRH entities'	MoH, PSC		X	X
Review implementation for successes and challenges	MoH, Development Partners		X	X

Staffing & Capacity Building

TMIS should be strengthened to serve as the sole repository of all health worker training data with the capacity to generate quality and timely reports including information on trainings, trainers, course curriculum, distribution of trained workers and many others. To achieve this, the INS must be able to manage, maintain, enhance, and upgrade the system as required.

Review staffing plan

Currently, the INS does not have the required capacity to perform such functions, as it has just one technical IT staff member with limited skills and knowledge in information systems and application. In order to sustain the system, the INS needs to review its current staffing plan and to recruit at least two more qualified civil servants with an information systems background and at least one national consultant to coach and mentor the INS Information Technology (IT) team. Costs for recruitment should be included in the budget (see Finance section below). In addition, the INS should also consider the possibility of outsourcing the maintenance and management of TMIS if hiring an on-site national consultant is not feasible.

Engage in local partnership with universities or a technology vendor

As mentioned above, INS may also consider the possibility of outsourcing the maintenance and updating/enhancing of TMIS, if hiring an on-site consultants or staff is not feasible. This includes engaging in local partnerships with universities, such as Information System Departments, or a local technology vendor. These engagements can be established through a technical agreement that may be reviewed annually as needed. Under the technical agreement, INS may wish to seek assistance from universities to help them

with enhancing, upgrading, and maintaining TMIS. The INS may wish to engage local technology vendors to provide assistance as needed. This engagement could reduce the operational cost and time for the INS.

Build capacity of current staff

In addition to reviewing the staffing plan, priority should be given to strengthening the capacity of the INS and other stakeholders to use, maintain and enhance the TMIS. The target of these capacity building activities are INS directors, training departments, IT staff, municipality health officers, and data clerks. INS managers and trainers have completed data use training and TMIS user training. TMIS administration training has also been provided to the INS IT team. The next step for training is to provide the same trainings to all municipality health officers and data clerks at the sub-national level. Potential capacity building areas and participants are proposed in Exhibit 3. While some suggested stakeholders have already participated in these trainings, additional and regular training to build skills is recommended.

Exhibit 3: Capacity Building Areas

Capacity Building Area	Participants
Orientation of Senior Managers	Senior managers of INS including members of Council of Directors and Head of Departments of INS, National Director of Human Resources (HR) from MOH, Head of Quality Cabinet from MOH.
TMIS User Training	Users of TMIS such as: INS senior managers, INS trainers, municipality health officers, National Director of HR from MOH, Head of Quality Cabinet from MOH.
TMIS Advanced Administration Training	Staff of INS IT Department
Data use and quality for decision-making training	INS managers, INS trainers, National Director of HR from MOH, Head of Quality Cabinet from MOH and municipality health officers
Refresher trainings for new staff or when new modules are released	Newly recruited staff and existing staff who have already attended a previous training for newly released modules
Coaching on use of TMIS data for decision making	INS IT staff for TMIS Administration and INS trainers for TMIS Use; Senior managers of INS including members of Council of Directors and Head of Departments of INS, National Director of HR from MOH, Head of Quality Cabinet from MOH.

Integrate TMIS training into INS National Curriculum

To complement TMIS implementation, the HRH2030 program developed and delivered training modules and manuals on the utilization of health workforce training data for decision-making and on systems administration and use of TMIS. The data use training gave participants both theoretical and hands-on experience in identifying and responding to health workforce challenges and the associated training needs; stakeholder engagement in the collection and sharing of training data; how to analyze training data; use of training data to make decisions and, most importantly, act. Throughout the training, participants learned how TMIS can be used to carry out key steps in the decision-making process. The TMIS systems administrator and user training applied a problem-based, hands-on approach to help users and administrators of TMIS to learn how to use the system based on their respective roles.

As noted above, these trainings have been successfully delivered to INS managers and trainers, and accompanying materials to replicate the trainings have been provided. The INS should repeat the data use and TMIS user trainings for the municipality health officers at the sub-national level, as they will be the actors who will use the TMIS for planning and developing trainings. To ensure implementation of this activity, it is recommended that the INS integrate these trainings into the INS National Curriculum. The INS will then identify an appropriate cascade training approach, such as supporting the trainers by identifying champions at the central and municipality levels. Following INS in-service training standards,

these trainers will provide follow-up after training (FUAT) to support decision makers and managers. The FUAT visits will help to inform additional capacity building needs identified within this sustainability plan.

Actions for Sustainability

Activity	Stakeholders for the INS to Engage	Timeline		
		Short Term (3-12 months)	Medium Term (1-3 years)	Long Term (3-5 years)
Review staffing plan and recruit 2 – 3 IT personnel with required information system skills.	Public Service Commission, MoH	X	X	
Engage in local partnership with universities or a technology vendor	Universities, technology vendors		X	X
Capacity Building of current staff	MoH	X	X	X
Integrate TMIS training into INS National Curriculum	INDMO		X	X

Financing

The INS was created as a legal entity under decree law no. 9/2011 as a legal body with administrative, financial, and patrimonial autonomy within the MOH, reporting directly to Minister of Health. Therefore, it has the autonomy to plan, budget and manage its own funding. However, to date it still relies on funding from the government through General State Budget to fund its staff salary, goods and services, minor capital, and development capital. In early 2020, the INS developed a document to strategize income generation, moving toward even more autonomy from the government and development partners. Unfortunately, this may need a few more years to take effect due to current political conditions and the COVID-19 pandemic.

Its priority training activities for health professionals are financed through the Human Capital Development Fund (HCDF), although the funding allocation from HCDF does not adequately respond to the needs outlined in the health workforce capacity building plan. The INS' budget in 2017 and 2018 was reduced by almost half compared with 2014, and in 2019 and 2020, the INS operated with no proper budget for training due to political impasse. Development partners continue to provide direct and indirect funding to support training activities and technical assistance.

TMIS development, including trainings, consultancy services and operational costs, are all funded by USAID through the HRH2030 Program. The INS has allocated a very limited budget to the TMIS for 2021 to support the TMIS municipal training and server maintenance. Maintenance and enhancement of the system, consultancy services, travel and personnel costs are expected to be funded by development partners in 2021. The below describes the costing inputs and strategies for identifying financing mechanisms for long term sustainability of the TMIS.

Costing inputs to maintain and upgrade TMIS

The costing inputs defined below should be considered as a guide for maintaining and upgrading TMIS. These inputs are based on expenses noted during the installation of the TMIS and indicate the potential cost drivers for TMIS, rather than recorded actual costs.

Exhibit 4: Costing Inputs

Budget Line Item	Descriptions Cost Considerations	Illustrative Timelines
Personnel	<p>Personnel costs should include the following:</p> <ul style="list-style-type: none"> Approximately 30% time for the directorate of Training (see role described above) Approximately 5-15% time for Focal Point Trainers involved in updating the data into TMIS, Approximately 50% time for systems and network administration Training 	Continuous recurring costs
Travel	<p>International Travel</p> <ul style="list-style-type: none"> 1-2 trips/year to various conferences or workshops to further develop internal capacity on TMIS implementation through learning and to share experiences, as well as benchmark progress with other countries 	Annual recurring costs
	<p>Domestic</p> <ul style="list-style-type: none"> Consideration of travel costs to municipalities for TMIS roll out activities Travel to municipalities to train and coach TMIS users 	Monthly recurring costs
Consultants	<ul style="list-style-type: none"> Consultant to support system development 	Short term one time cost
	<ul style="list-style-type: none"> Consultant to support data analysis and interpretation to use HRH data collected to respond to key identified policy questions 	Ad hoc short and long term costs
Operations	<ul style="list-style-type: none"> Proper space for TMIS server Internet access for communications, access to TMIS platform, etc. Office stationery such as paper, pens, ink for printer, etc. Trainings – end user, developer, refresher trainings, as new staff come on or new modules are released. 	Monthly recurring costs
Equipment	<ul style="list-style-type: none"> Ongoing maintenance and running the system Hosting and data storage Laptop for TMIS associated staff with standard software and antivirus subscription Additional server for backup, including a data security package 	<p>Initial immediate costs with upgrades every three to five years for hardware and standard software for computer</p> <p>Monthly or annual costs for antivirus and data security</p>

Include TMIS maintenance and enhancement in the annual budget

As mentioned in the previous section, in 2020 TMIS development-related trainings, consultancy services and operational costs were all funded by USAID through its HRH2030 Program. For 2021, the INS has allocated a very limited budget to support the TMIS municipal training and server maintenance. It is therefore recommended that TMIS maintenance and enhancement costs be included in the budget revision in September 2021 and in the annual budget for subsequent years. INS may use the current expenditure on the system establishment as basis for calculating the proposed budget to be allocated for maintenance and enhancement. This may include enhancement of the system, consultancy services, travel, and personal costs.

Approaching potential donors to fill gaps

In addition to allocating an annual budget, the INS should consider also approaching potential donors to fill gaps that may not be covered through the National Budget. As the budgeting process takes time and the INS often experiences budget reduction, some expenditures may need funding support by donors and/or development partners. For example, enhancement of the system requires qualified and skilled developers that are often costly. Donors may therefore be requested to support the recruitment of a service provider with required competencies. Donors may also be requested to support the TMIS roll out to municipalities during the first year of TMIS implementation. This support may include the production of training materials, personal costs, travel, and consultancy services.

While a physical server has been provided to the INS by the HRH2030 program, an additional server is needed for disaster recovery plan and backup. There is a need to also improve the existing server room to ensure the security of the server/s. Donor support may also be needed to cover these costs.

Actions for Sustainability

Activity	Stakeholders for INS to Engage	Timeline		
		Short Term (3-12 months)	Medium Term (1-3 years)	Long Term (3-5 years)
Include TMIS maintenance and enhancement in the annual budget	Ministry of Finance (MOF), MoH	X	X	X
Approaching potential donors to fill gaps: <ul style="list-style-type: none"> - Support recruitment of developers with required competencies - Support TMIS roll out to municipalities - Purchase additional server and improve server room 	MoH, MoF, Development Partners	X	X	X

Conclusion

To address health workforce challenges contributing to inequitable access to quality health services in Timor Leste, improvements in the collection, management and analysis of health workforce training data are needed, as well as a sustainable information system for the storage of training data. The TMIS will allow the INS to improve the availability and quality of training data to improve planning, coordination and decision making on health workforce training, ultimately contributing to the improvement of equitable access to quality health services.

This Sustainability Plan, developed by HRH2030 and the INS, should be used by the INS and other stakeholders to ensure the sustainability of the TMIS in the areas of governance, institutionalization, staff/capacity building needs, and financing. The INS and other stakeholders should use this plan as a guide to achieve its long term goals and document strategies to continue to maintain, develop, and upgrade TMIS, ensuring coordination and use of TMIS data for decision making along the way. It should be emphasized again these activities do not need to be conducted in sequential order; rather, activities should be prioritized and implemented as resources and inputs are available, prioritizing quick wins. It is recommended that the progress of all TMIS-related activities be monitored and the plan updated regularly to capture lessons learned during use and implementation of the system and TMIS data, improvements in stakeholder coordination, and to progress with the evolution of information systems maturity in the country.

Overall, TMIS will be the system through which the INS and stakeholders improve the availability and quality of health workforce training data. This document provides a plan to follow not merely to reach a destination, but to guide the journey towards improving use of quality training data amongst stakeholders to address health workforce challenges and improve access to quality health services in Timor-Leste

Annex I: Competencies for Information System Personnel

Information System personnel to be recruited should possess, at minimum, the following skills and qualifications. This should be used as a reference when conducting the recommended recruitment of IT staff to support the management, maintenance, and enhancements to the TMIS.

Information System Personnel Competencies

- Degree in computer science, Computer Software Engineering or Software Programming and Development
- Knowledge and interest in computer systems and the latest technologies
- Knowledge in ICT / information management, particularly in system analysis, database design, and programming.
- Knowledge in Linux Operating system especially Ubuntu OS environment.
- Proven experience in using LAMP web server including knowledge in programming and PHP language and MySQL database
- Knowledge and experience in application administration, authentication and cryptography, logging and reporting, and security configuration.
- Ability to create and modify hard code of a system based on the institutional needs.
- Show understanding in IT support services especially IT application support, web design and maintenance.
- Minimum 5 years' experience in Information System especially Database Maintenance

Annex II: Proposed Additional Roles and Responsibilities to Support and Maintain TMIS

The below outlines the proposed roles and responsibilities of the INS and external stakeholders to support and maintain TMIS. This should be used as a reference alongside the governance structure discussed above.

Council of Directors

As per Decree Law No. 9/2011 article 9, the Council of Directors is chaired by the Executive Director of INS with the other directors of INS namely Director for Training, Director for Finance Administration and Logistics, and Director for Cooperation and Partnership. As a collegial body that decides the management, planning, and budgeting of the INS, it also has management authority over the TMIS. For TMIS specifically, its roles will be to:

- Provide strategic direction for the application of TMIS and serve as the national oversight for TMIS implementation.
- Review and approve recommendations for changes or modifications to TMIS including TMIS data (i.e. what data fields and forms need to be added)
- Advocate for multi-sectoral coordination and promote the use of INS training data

Directorate for Training

The Directorate for Training is responsible for ensuring the quality of training materials and the delivery of training services for health professionals. As per INS internal regulations, the Directorate is also responsible for the standardization, quality control, and documentation of all INS training activities. For TMIS, its roles will be to:

- Develop and implement procedures for effective data management.
- Create rules and procedures for sharing training data.
- Oversee and manage staff members in the daily use of TMIS.
- Ensure that the use of TMIS adheres to legal and INS regulations.
- Regularly monitor and evaluate information and data from TMIS that could affect analytical results.
- Assess system performance and make recommendations for software, hardware, and data storage improvements.
- Manage all incoming data files.
- Continually develop data management strategies.

The work of the Directorate for Training will be assisted by three head of departments, namely the Departments of Identification and Training, Standardization and Quality Control, and Information and Documentation. Each of these departments plays a different role in support of TMIS.

Department of Identification and Training

The Department of Identification and Training will be the primary user of TMIS with a mandate to document, store and analyze all the training data while also safeguarding security and adhering to confidentiality standards. Its roles for TMIS will be to:

- Ensure the collection and processing of training data relevant to the organization;
- Plan for continuous training and improvement of health professionals and input training information into the system
- Develop programmatic content of courses and trainings, to be taught at INS
- Produce reports, statistical data and information on the actions of continuous training and improvement of health professionals, delivered by INS

- Ensure the admission process of trainees, monitor the entire training process, and issue training certificates through TMIS.

Department of Standardization and Quality Control

This department's principal role is to ensure standardization and quality control of trainings delivered by the INS. Its roles for TMIS will be to:

- Ensure integrated management and continuous improvement in the quality of training, in consultation with other organizational units or project structures.
- Ensure the development, management and application of the self-assessment and institutional assessment systems at INS
- Promote innovation and modernization projects that contribute to improving the quality of the training provided
- Regularly assess the needs and levels of satisfaction of the parties involved in using TMIS
- Carry out other activities related to the assessment of the quality of training, when required

Department of Information and Documentation

Department of Information and Documentation is the central unit for data and information. It also provides IT services for the INS in the absence of a proper IT Unit. For TMIS, its roles are to:

- Maintain TMIS and be the responsible unit for hosting TMIS source code
- Configure TMIS for system enhancement
- Manage updates to the system
- Maintain all documentation including technical documentations for TMIS

Program Focal Point Trainers

Program Focal Point Trainers are INS senior trainers who lead specific training program areas in the INS i.e. maternal and newborn care, communicable diseases, and environmental health. For TMIS, their responsibilities are to:

- Schedule trainings and manage specific training activities in their respective areas
- Ensure proper nomination of participants for training
- Input training and trainer information into TMIS
- Input training data such as test results, including FUAT results, into the system.
- Ensure timely update of training and trainer information into TMIS

Municipal Health Officers

Municipality Health Officers are the managers of public health offices at the municipality level. Their roles in TMIS is to conduct training needs analysis at the municipality level and ensure proper nomination of training participants from their respective municipalities.

External Stakeholders

There will be various external stakeholders involved in the TMIS implementation such as WHO, PSC, MOH, other training providers, funders, and donors. Their role in TMIS is to ensure that the training data produced meet their needs for decision making.