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Harmonizing Health Resource Tracking

A RESOURCE GUIDE FOR COUNTRY IMPLEMENTATION

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Acknowledgements

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Abbreviations

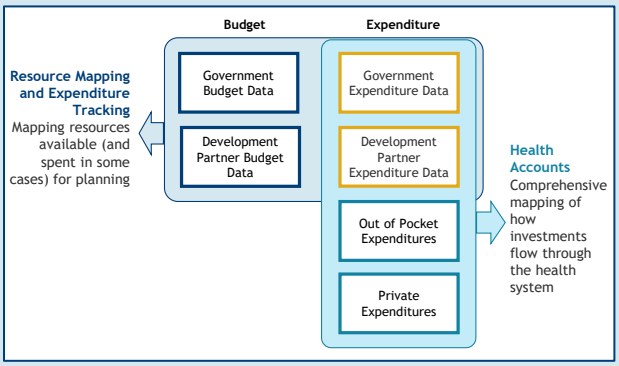
CHAI	Clinton Health Access Initiative
DPPD	Department of Planning and Policy Development, Malawi
GFF	Global Financing Facility
HA	Health Accounts
HIV	Human Immunodeficiency Virus
HRT	Health Resource Tracking
HSSP	Health Sector Strategic Plan
DHIS2	District Health Information Software 2
IFMIS	Integrated Financing Management Information Systems
MOH	Ministry of Health, Malawi
MOHCC	Ministry of Health and Child Care, Zimbabwe
NASA	National AIDS Spending Assessment
NHS	National Health Strategy
NSP	National Strategic Plan
PER	Public Expenditure Review
PETS	Public Expenditure Tracking Surveys
RMET	Resource Mapping and Expenditure Tracking
RMNCAH	Reproductive, Maternal, Newborn, Child and Adolescent Health
SHA	System of Health Accounts
WHO	World Health Organization
USAID	US Agency for International Development

Executive Summary

Policymakers today face significant challenges in mobilizing funding for health and ensuring that limited available resources are allocated and spent efficiently. Health systems are funded through multiple private, public, and external sources; and services are purchased and delivered through the public and private sectors and across different levels of government and agencies. Understanding funding levels and flows between these actors is critical to improve planning, policy, and management.

Health resource tracking (HRT) provides the visibility on budget and expenditure that policymakers, as well as development partners, civil society, and other partners need. This data can be used to prioritize and align health sector investments, advocate for additional resources, and improve efficiency and equity in health outcomes. Over the years, various HRT methodologies, tools, approaches, and processes have evolved, to address different stakeholders' distinct perspectives and needs—including an approach to Resource Mapping and Expenditure Tracking (RMET) for planning, and the System of Health Accounts (SHA).

Box i: Scope of RMET and HA

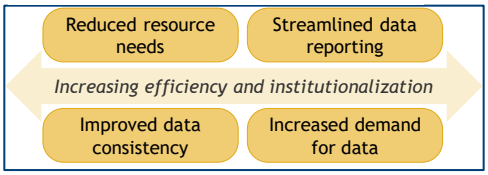


RMET is a country-specific exercise that captures budget (and sometimes expenditure) data and maps this against country plans. Resource Mapping (RM) looks at what resources are available for health, from whom, and for what, while Expenditure Tracking (ET) measures how these resources are spent. This is used for joint planning by governments and development partners.

Health Accounts (HA) comprehensively measure what has been spent, by whom, and for what across the health system, to monitor efficiency, equity, and financial protection. It includes government, external, out of pocket, and private expenditure. The standardized SHA framework also allows for international benchmarking.

As shown in Box i, exercises often collect similar or complementary data from the same stakeholders. In several countries, governments have begun to 'harmonize' these processes where there is overlap, to streamline resource needs, reduce duplication, and improve data consistency across exercises. While harmonization can take many forms, this guide primarily draws upon government initiatives to harmonize RMET and HA data collection processes, leveraging the experience of Ministries of Health in Zimbabwe and Malawi, with support from CHAI and partners including the WHO, the Global Financing Facility, and the World Bank. ***These case studies show that harmonization is a key ingredient to strengthening and institutionalizing routine production of HRT data needed for policy, planning, and management.***

Figure i: Benefits of Harmonization



This Health Resource Tracking Harmonization Guide provides practical guidance for governments and their technical partners in harmonizing HRT processes, with the goal of streamlining and institutionalizing HRT. The guide outlines five stages for assessing HRT needs to inform routine policy and planning decisions, identifying how current processes can be harmonized and optimized, and adapting current tools and processes to meet these needs. This stepwise process encourages governments to develop 'needs-based' HRT systems; systems that are fit-for-purpose to generate the evidence that decision-makers require for policy, planning, and management.

Stepwise Approach to Harmonizing Health Resource Tracking

1  **Stage 1: Assess Use Cases and Landscape Local Health Resource Tracking** Generating a deep understanding of the demand and use cases for HRT data.	• Understand current and anticipated use cases across policy, planning, and management. • Landscape existing HRT exercises and data produced against these use cases.
2  **Stage 2: Determine the Scope and Objectives for Harmonization** Assessing whether harmonization is feasible and desirable.	• Assess whether harmonization may meet HRT challenges and align on harmonization objectives. • Explore alignment across HRT processes to determine scope of harmonization.
3  **Stage 3: Define Data Elements to Meet Use Cases** Aligning on the scope and detail to be collected in a harmonized tool.	• Evaluate data elements and level of detail against intended use cases. • Identify alignment across data elements and conduct 'cross-walking' between classifications to define elements for a harmonized tool.
4  **Stage 4: Adapt the Resource Tracking Process to Meet Harmonization Objectives** Adapting a harmonized tool and process that will meet the needs of decisionmakers.	• Adapt or develop a harmonized tool to collect data elements defined in Stage 3. • Align and coordinate timelines, teams, and processes. • Identify outlets for dissemination and data use.
5  **Stage 5: Test, Iterate, and Strengthen the Resource Tracking System Over Time Towards Institutionalization** Piloting and iterative improvements to HRT to meet needs.	• Validate, iterate, and improve on the HRT process to meet evolving needs. • Strengthen institutionalization through data use, governance, and institutional capacity. • Continuously assess opportunities for digitization, integration, and/or interoperability with routine systems.

Although the steps are presented sequentially, the process is dynamic and iterative in practice; Stages 1 and 2 may be carried out simultaneously, as may Stages 3 and 4. It is possible that use cases not initially apparent in Stage 1 emerge later in the process or in subsequent rounds of data collection, especially in countries where there is limited experience with HRT. This might require revisiting Stages 3 and 4 to ensure data elements and processes meet the needs of these use cases. Stage 5 is a routine and iterative process throughout the lifecycle of HRT in following years, ensuring the HRT system is continually optimized to meet evolving evidence needs and is institutionalized over time.

The government should be at the forefront of these efforts to strengthen HRT and conduct harmonization, to ensure HRT processes and resulting data meet health sector evidence needs and are well-integrated into government systems. Continuous engagement of development and technical partners enables alignment on data needs and HRT systems optimized for use cases, ensuring that HRT data is ultimately leveraged for joint planning and decision-making to achieve health sector goals.

Navigating This Resource Guide

This Resource Guide begins with background sections on health resource tracking and its common applications, and a summary of efforts to-date in harmonizing health resource tracking exercises in several countries. Subsequent sections unpack each of these five Stages as a practical approach to harmonizing and strengthening HRT. The introduction of each Stage outlines key steps, desired outcomes, expected timelines, recommended stakeholder involvement, and anticipated human and financial resource needs. Next, the detailed stepwise process for each Stage provides illustrative case studies, practical worksheets, sample questions, and tools. In the Appendix, there are full versions of these implementation resources that can be adapted to suit specific implementation contexts and needs.

This Resource Guide aims to outline key principles and offer a common starting point; however, there is no standardized process for harmonization. When reapplying these key principles in other countries, it is important that these recommendations be contextualized, and that approaches be adapted to each country's specific needs and existing HRT efforts. This guide will serve as a living document and will be updated with new insights from implementation in additional countries.

Key Terms

Cross-Walking: Identifying alignment in metadata across health resource tracking methodologies to codify where data collected in one format/classification system can be mapped to a different system (e.g., which Disease Categories map to which Programmatic Functions).

Data Element: Categories or classification systems used to collect and disaggregate data, such as funding agent, type of provider/level of care, disease focus area, program area, and/or accounting classification. One financial data entry generally has multiple elements—e.g., a budget line for antiretrovirals for HIV may be allocated to a primary care facility (level of care) and be classified as a medicine and consumable (accounting classification) for HIV/AIDS (program classification).

Digital Solutions: Digital tools or systems that streamline or automate an end-to-end process or certain steps or functions within a process. The scope of digital solutions for HRT varies from small enhancements to existing tools; to point solutions to digitize one or more steps within a process or solve a specific problem area (e.g., for data visualization); to bespoke that digitize the entire HRT process. The specific digital solution should be aligned to a country's specific objectives and local digital ecosystem.

Harmonization: Government-led initiative in which different health resource tracking exercises are aligned to form a single process to collect and/or analyze data.

Health Resource Tracking: Collection of health expenditure and/or budget data, that is used by governments to inform health plans and policies, and to raise, allocate, and spend funding. Please note that this is an umbrella term that we will use throughout this Guide to refer to these processes; in a given country context, health resource tracking may entail a combination of Resource Mapping and Expenditure Tracking, the System of Health Accounts, routine information systems like an Integrated Financial Management Information System (IFMIS), and others.

Institutionalization: Government-led and country-owned routine production and utilization of health resource tracking data, which relies on sufficient maturity across four primary domains: demand for data and institutionalized processes; governance and financing; institutional technical capacity; and capacity to disseminate and use data.

Interoperability: Interoperability refers to the ability of different systems to communicate and exchange data with each other in a standardized manner, and this often requires the use of common data standards. Interoperable systems can share data *without requiring knowledge of the other systems*, meaning that they can operate independently while still being able to exchange data seamlessly. E.g., Using HL7/FHIR based standards, EHR systems can exchange patient data seamlessly for continuity of care, even if they are from different vendors or provider networks.

Integration: Integration involves creating connections between different information systems, often *using point-to-point data exchange protocols*. E.g., data exchange between a specific implementation of a finance system (IFMIS) and a hospital management system for reporting health outcome metrics aligned to budget allocations. Unlike interoperability, integration requires connectors to be built/configured in each system and requires deep understanding of the data formats and structures being exchanged.

Minimum Dataset: Streamlined dataset with a minimum number of elements and level of detail required to address key policy and planning requirements, which can be 'cross-walked'/mapped to international standards such as the System of Health Accounts. For countries beginning new health resource tracking exercises or looking to strengthen and harmonize existing processes, defining the minimum dataset required to meet use cases is a crucial foundational step for operationalizing improvements.

Resource Mapping and Expenditure Tracking: Country-specific process intended to increase visibility into funding available for the health sector and where it is allocated. The Resource Mapping (RM) component generally refers to the process of looking at what resources are available for health, from whom, and for what, while the Expenditure Tracking (ET) piece measures how these resources are spent. The specific financial data collected and the format and process for collection are based on a country's specific policy and planning needs.

System of Health Accounts: Internationally recognized expenditure tracking methodology that provides comprehensive and consistent monitoring of health expenditures from funding source to ultimate use. Data is collected using a standardized framework, allowing comparability across countries and over time.

Use Case: Intended way for health resource tracking data and findings to be used.

Background: About Health Resource Tracking

This section provides a brief overview of HRT. For more insight on HRT's scope, purpose, and common use cases across countries, please refer to this primer on health resource tracking.

There are various methodologies and approaches to HRT used by governments, donors, and partners, each offering different perspectives. Methodologies commonly vary along the following dimensions: Focus (Expenditure and/or budget data; national and/or sub-national); Breadth (multi-sectoral, sector-wide, or program/disease specific); Sources of funding (domestic, donor, private); and Frequency (whether this is conducted routinely to inform policy and planning or ad-hoc in response to specific questions or donor reporting requirements). Common examples of country-level HRT exercises include:

- Sector-wide System of Health Accounts (SHA) developed by the WHO, OECD, and Eurostat, is an internationally recognized expenditure tracking methodology that provides comprehensive and consistent monitoring of health expenditures against a standardized framework, which ensures that data is comparable across countries. Data includes government, donor, and private expenditures, including household out-of-pocket payment[1]. **Health Accounts (HA)** exercises address four basic questions: where resources come from; where they are consumed; what kinds of services and goods they purchase; and whom they benefit. Data from HAs inform health sector policy and allow for systematic monitoring and comparison of health spending trends over time and across countries (2).
- Sector-wide Resource Mapping and Expenditure Tracking (RMET) is a country-specific process intended to increase visibility into funding available for the health sector for planning purposes. RMET is generally intended to be forward looking, including budget data on where funding is allocated (Resource Mapping) from government, donors, and implementing partners; and sometimes also includes expenditure data to track where funding is spent (Expenditure Tracking). There is no internationally standardized methodology, and Ministries of Health (MOHs) have developed context specific RMET approaches in collaboration with partners like GFF and CHAI, with the breadth and granularity (including sources, focus, and frequency) dependent on their planning needs. In general, RMET data is analyzed against health sector and program specific strategic plans to inform gap analysis, prioritization and overall annual plans, budgets, and investment cases, and for coordinating implementation and improving accountability.

The below table reviews each of these exercises, which are the primary focus of this guide:

	Resource Mapping & Expenditure Tracking (RMET)	WHO System of Health Accounts (SHA)
OBJECTIVES		
Approach and goals	Country-specific exercise aligned to national strategic plans, measuring resources available in the health sector to analyze gaps and prioritize needs, as well as resource spent against priorities. Data informs joint annual planning, budgeting, and coordination of funds for health by government and development partners; and can also be used for investment cases and other resource mobilization.	International expenditure tracking methodology used for monitoring funds from source to point of delivery to inform policy development, answering critical questions including progress on health sector efficiency, equity, and financial protection goals. By using a standardized framework, it also allows for systematic monitoring and comparison of health spending trends over time and across countries.

[1] Note there is some debate about the comparability and reliability of out-of-pocket expenditure data between countries and across years given, among other factors: 1) variability in survey instruments, and 2) variability in the frequency of data collection via household budget and expenditure or other demographic surveys. For more, please see: Grépin et al (2020) (1)

	Resource Mapping & Expenditure Tracking (RMET)	WHO System of Health Accounts (SHA)
Questions it can answer	• What is the total committed funding for health? • Who is planning to fund/ implement programs? • How is funding aligned to government priorities per national strategic plans? • Is funding distribution equitable and efficient?	• Where do resources come from? • At what level of the health system are they consumed? • What kinds of services and goods do they purchase? • Who do they benefit?
STAKEHOLDER INVOLVEMENT		
Developer	MOHs have initiated RMET processes to improve funding transparency for joint planning and coordination between government and partners, often with technical assistance. This includes support from partners like GFF to use RMET data to inform RMNCH and other Investment Cases.	WHO, OECD, and Eurostat initiated the SHA in 2000 to provide an internationally comparable methodology for tracking resource flows from sources to uses, for policy development and monitoring spending over time and across countries.[2]
Stewardship	MOHs with technical assistance in early years, and often with funding support from donors	MOHs or equivalent, usually with technical assistance and funding support from donors
SCOPE OF DATA COLLECTION		
Time period	Primarily prospective budget data, sometimes with expenditure data	Primarily retrospective expenditure data
Sources included	• Public sector • Donors and implementing partners	• Public sector • Donors and implementing partners • Private sector • Households (out-of-pocket)
Data elements	Varies by country, but generally: • Source of funding • Programmatic focus • Geography • Cost categories	Standardized across countries: • Source of funding • Health Care Function • Beneficiaries • Factors of Provision • Health Care Provider • Disease Focus (within Sub-Accounts)
METHODOLOGY		
Methodology	Country-led and developed processes and outputs, with data categories aligned to country strategies and budgets.	International coding framework (WHO System of Health Accounts), standardized at the global level for cross-country and time series analyses.
FREQUENCY AND TIMELINE		
Frequency	Annual exercise aligned with fiscal year	Target of every 2 years
Timeline	Averages 8-12 months from data collection to dissemination, depending on level of detail	Averages 12-24 months from data collection to dissemination, though in some instances this timeline is delayed due to time needed for auditing

Other HRT approaches include program specific expenditure tracking, such as the National AIDS Spending Assessment (NASA) developed by UNAIDS or the Family Planning Spending Assessment (FPSA), which are conducted on an as-needed basis using expenditure data from domestic, donor, and

[2] WHO, World Bank, and USAID also developed an NHA "Producers' Guide" in 2003 to promote the use of Health Accounts in low- and middle-income countries.

private sources to inform financial gap analyses and investments. Finally, sector-wide targeted deep-dive assessments such as the Public Expenditure Tracking Surveys (PETS) or Public Expenditure Reviews (PER) for health, may be conducted to assess public expenditures to answer specific questions, inform improvements in financial management and health financing policy, and country development partner investments. These are generally conducted on an as needed basis.

Use Cases for Health Resource Tracking Data

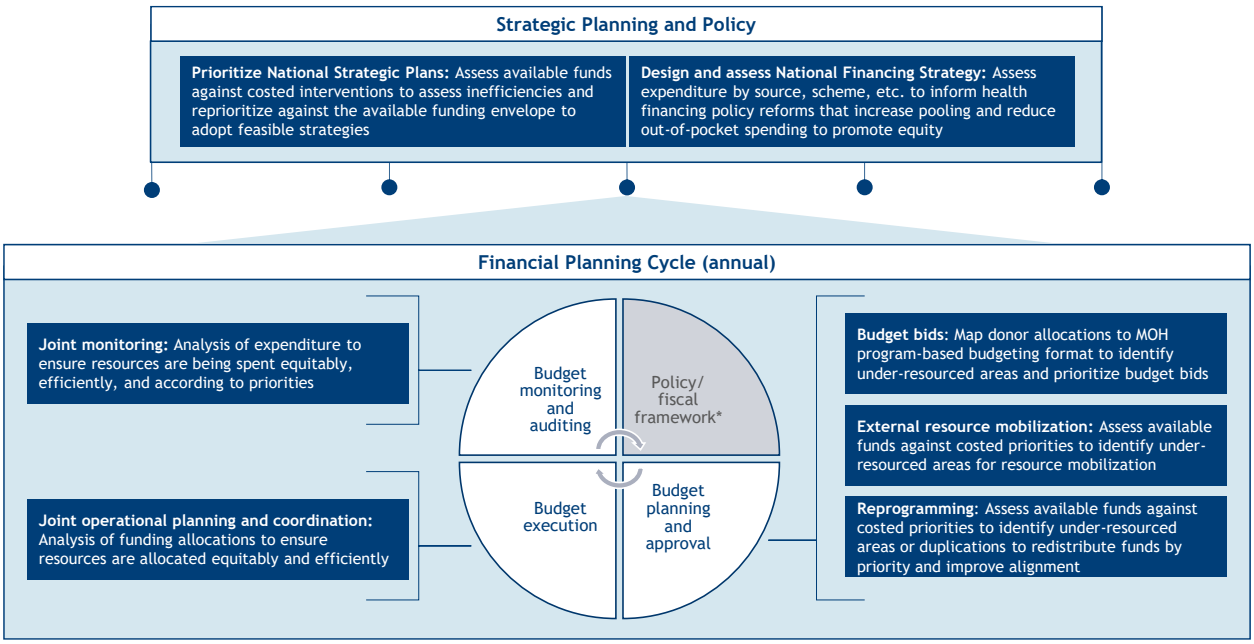
HRT collects financial evidence to inform strategy development, funding mobilization, alignment and coordination of existing funds, and the monitoring of spending trends and financial flows. This financial data can be used to identify funding availability and gaps, duplications, and inefficiencies that can be addressed to improve overall accountability, equity, and efficiency across the health financing function. It can also be used to undertake more specific analyses pertinent to the key goals of government reforms and programs (such as by disease area, health system level, or to examine the equity of funding flows across populations groups or geographies).

Box 1: Definition of Use Case

In this guide, we define a 'use case' as the intended way in which HRT findings will be used. For example, an MOH might need to understand budgeted amounts for different priorities in its Health Sector Strategic Plan from all non-governmental stakeholders, to complete annual budgeting and work planning for the following fiscal year. The MOH would then define what data elements are needed and in what format, to ensure this is integrated into the HRT data collection exercise.

Figure 1 outlines illustrative use cases of HRT across parts of the annual financial management cycle and for long-term strategic planning. The following section provides detailed examples.

Figure 1: Illustrative Use Cases of Health Resource Tracking Data



*Note that the budget policy and fiscal framework is generally set by the Ministry of Finance after setting fiscal space and economic growth projections. Corresponding budget ceilings are communicated to Ministries, Departments, and Agencies (MDAs) including the MOH, which develop draft budgets within these envelopes. While there may be use cases for HRT data in setting this framework, these have not been a key focus to-date and as such we have not focused on them here.

Examples: Health Resource Tracking Data Use Cases

Below are examples of how MOHs and donors can utilize HRT data for joint planning, resource mobilization, resource reallocation, and overall coordination. They are not an exhaustive set of use cases but are meant to represent the different outcomes that can result from HRT data across policy development, planning, resource allocation, and use.

Prioritization of National Strategic Plans

HRT data can produce a financial gap analysis that quantifies availability funding against cost requirements for specific interventions or programs. Detailed strategy gap analyses are critical to prioritizing and adopting feasible strategies informed by directional estimates of available and future funding. Gap analysis results can also be used to make investment cases to mobilize additional resources, allocate new funding, or reprogram resources where there are duplications or inefficiencies.

Data has spurred improved efficiency in the allocation of resources towards National Strategic Plans (NSP) in Malawi by illustrating funding constraints and potential duplication. For example, the initial cost of the HIV NSP 2015-2020 was US$1.7 billion against an available commitment of US$1.6 billion. This mismatch was driven by high HIV testing costs with ambitious treatment targets. Through a participatory prioritization process, the National Aids Council was able to optimize HIV testing strategies under different funding scenarios, ultimately developing a strategy that would save an estimated US$42 million. Additional analyses demonstrated potential duplication in funding for certain activities that was subsequently reallocated, bringing the HIV NSP 2015-2020 costs in line with available resources while maintaining service delivery targets.(3)

The MOHCC has conducted similar processes in Zimbabwe, using funding gap analysis from HRT data to inform the overall National Health Strategy and disease-specific strategic plans (typically 2-5 years), e.g., for HIV testing and treatment services; reproductive, maternal, neonatal, child, adolescent health, and nutrition; and child survival.

Design of Health Financing Strategies

Expenditure data that shows funding flows through the health system from various sources (e.g., households, Ministry of Finance, donors, employers) through financing schemes (e.g., out-of-pocket spending, government health schemes, contributory schemes, etc.), to be spent on ultimate healthcare functions (preventive, curative, inpatient care, etc.) delivered by different types of providers can help to identify challenges, inefficiencies, and inequities in health financing within a country. This can inform health financing policy reforms that increase pooling and reduce out-of-pocket spending to promote equity. Consistently tracking expenditure data over time can also monitor progress towards health financing reform goals (e.g., of reducing out-of-pocket costs and increasing pre-payment for health). For example, the 2001/02 HA in Kenya informed the adoption of social health insurance within Kenya's long-term development plan (Vision 2030) by demonstrating inequities in out-of-pocket costs households faced.[3]

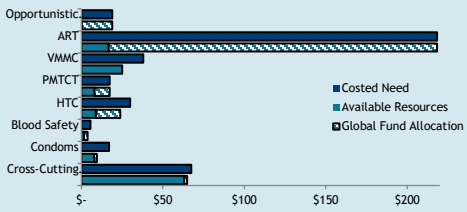
[3] This example and others like it can be viewed within the Health Financing and Governance Project (2012-2018)'s Health Accounts Policy Impact Map: https://www.hfgproject.org/health-accounts-policy-impact-map/ (4)

Informing National Budget Bids

In Zimbabwe, after collecting resource mapping data from donors and partners, the Ministry of Health and Child Care (MOHCC) converts the data into the MOHs program-based budgeting format to determine the external funding for the various programs and sub-programs. Next, the MOHCC completes a prioritization analysis to determine which programs need additional funding based on external resources available. The MOHCC uses this analysis to develop a budget bid from National Treasury, indicating the program areas to be prioritized for additional funding based on external funding resources available. This results in an annual MOHCC budget that is more efficiently allocated.

Resource mobilization for funding gaps

Data on budget commitments has been leveraged against costed National Strategic Plans to inform proposals to the Global Fund in Malawi, helping the Ministry of Health secure US$363 million (2015-17) and US$450 million (2018-20). Gap analysis showed where additional funds were required to meet costed government priorities for HIV, TB, malaria, and health systems strengthening, and Global Fund allocations were aligned to fill these gaps.

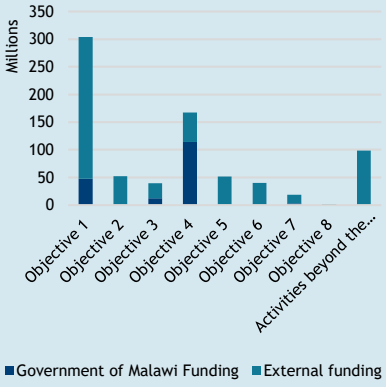


HIV Gap Analysis (FY 2015-2017), Malawi

Joint operation planning and coordination

In Malawi, the MOH uses HRT data for national and district planning and budgeting processes to advance allocative efficiency. During annual development of workplans and budgets, budget data is imported into the MOH budgeting tool to map commitments against costed Health Sector Strategic Plan (HSSP) II objectives, sub-areas, interventions, etc. for medium-term coordination.

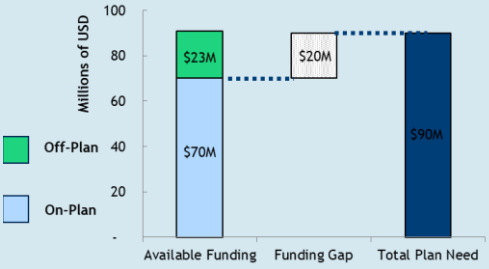
At the district level, District Health Offices use data to identify earmarked commitments for their districts and map budget data against District Implementation Plans, allowing for improved district planning, budgeting, and partner coordination, maximizing funding available for implementation of priority health programs. (3)



Total financing available by HSSP II Objective and by financing source (FY 2019), Malawi

Resource allocation and reprogramming

In Malawi, a COVID-19 resource mapping tool collected budget commitments from government and donors routinely through 2020 to coordinate the national response. The data showed that 94% of the US$86 million mobilized for the pandemic response was funded by partners. While 49% of commitments were new resources, 51% were reallocated from other essential health services. Approximately US$23 million was not aligned with the National COVID-19 Response Plan. Thus, a portion of funds was re-allocated to underfunded infection prevention and health workforce activities within the Response Plan.



COVID-19 Budget Tracking against National Response Plan, Malawi

Health Resource Tracking Harmonization Efforts to Date

HRT efforts have supported joint planning and policymaking and allowed alignment and mobilization of resources against health sector priorities and plans, to improve overall coordination. However, in many countries, there are multiple HRT exercises that often collect similar or complementary data but are implemented in parallel, causing fragmentation, inefficiencies, and fatigue among those providing data. In some cases, HRT exercises are also not well-aligned to government needs and use cases, meaning data cannot be easily applied to policy questions or dialogues, and technical reports often remain unused. This fragments efforts and erodes demand for data, ultimately hindering institutionalization.

Harmonization of processes is one approach that supports institutionalization of processes and data use and ensures that governments facing human and financial resource constraints are not overburdened. This guide focuses on RMET and HA, though similar principles can be applied to other HRT exercises.

Box 2: Definition of harmonization

Within this guide, harmonization refers to a government-led initiative in which different HRT exercises are aligned to form a single process to collect and/or analyze data. The objectives of the different exercises remain complementary to each other, and it is the process of how data is collected, and/or analyzed that is harmonized.

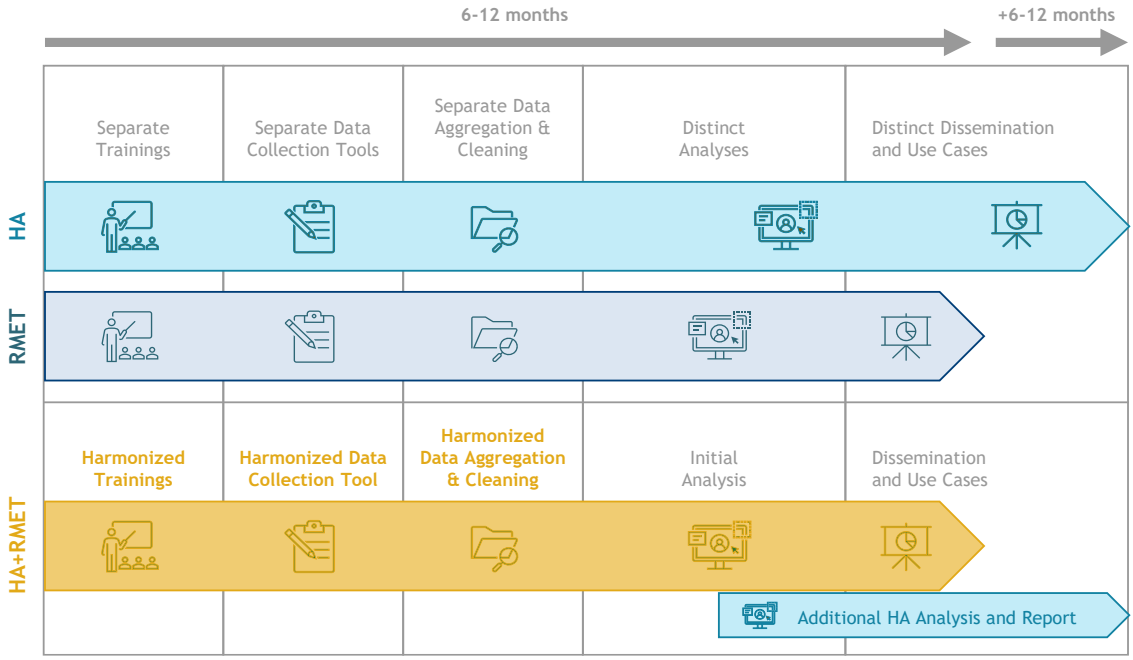
While RMET and HA have different objectives and methodologies, they collect some overlapping data from the same government, donor, and implementing partners, and the same team within the MOH often manages the two exercises for complementary purposes. Both exercises are increasingly being undertaken by governments, with varying amounts of external financing or technical assistance. While there are several countries moving towards domestic financing for RMET, RMET and HA exercises are still often supported by external financing. In many countries institutionalization is hindered by separate data collection for RMET, HA, and other HRT exercises at different points in the year with separate tools, resulting in inefficiencies and limited resources focused on data use. External agencies and governments are beginning to discuss greater alignment of HRT systems and processes to advance institutionalization and improve data use.

MOHs in Zimbabwe and Malawi have harmonized the process, timelines, and resources for the collection of donor and government data for sector wide forward-looking budgets (for RMET) and past expenditures (for HA and RMET). This has further enabled the harmonization of data collection for other HRT exercises, including the National AIDS Spending Assessment (NASA) in Malawi. Zimbabwe and Malawi's experiences in harmonizing RMET and HA have been documented in a set of case studies.

In these countries, the MOH aimed to harmonize RMET and HA to streamline data collection and conserve human and financial resources, while also expanding potential use cases and subsequent demand for data. Malawi and Zimbabwe use a harmonized process, timeline, tool, and team for data collection and associated processes such as data cleaning (see Figure 2 below). Expenditure and budget data are collected each year from government, donor, and implementing partners in one harmonized tool, at the level of granularity required for both exercises. Data from the private sector and households continue to be collected through separate surveys in years when HA are to be published, given limited overlap with RMET.

In these case study countries, RMET and HA exercises inform different policy and planning questions at different times, and therefore data analysis, report writing, and dissemination were completed separately, as reflected in Figure 2 below. For instance, RMET data may be used for joint planning of health programs across MOH and development partners at the start of each financial year, while HA may be leveraged to assess levels of catastrophic spending by households to inform a long-term health financing strategy. In these case studies, analysis for RMET is conducted annually while analysis for HA is conducted only in years when a HA exercise is underway.

Figure 3: Harmonization of RMET and HA processes in Malawi and Zimbabwe



* Timelines are indicative and based on case study countries.

Box 3: Achievements from Harmonization of RMET and HA in Zimbabwe and Malawi

Harmonization of RMET and HA has increased efficiencies and enhanced institutionalization of both exercises through:

- **Reduced government human and financial needs** for data collection, training, and staffing, freeing up resources to focus on improving data use. For example, Malawi has consolidated responsibility for both exercises within the Ministry of Health Department of Planning and Policy Development (DPPD).
- **Streamlined process for government and partner data reporting**, through a single, simplified data collection tool and improved quality checks. In Zimbabwe, the government and development partners receive only one request for data annually. To the extent possible, the data classifications are aligned with national policies and strategies for better comprehension.
- **Improved consistency of budget and expenditure data outputs,** through a singular streamlined tool with a consistent format and classification systems aligned to government priorities and plans. This ensures consistent and complementary data is available to inform a wide range of use cases to enhance decision-making and overall demand for data.
- **Increased demand for data** due to routine availability of detailed expenditure and budget data in a centralized database, that can be mapped against government strategies and plans to enhance decision-making. In Zimbabwe, harmonization has allowed for both past expenditure and planned budget data to be collected in a compatible format, providing an opportunity to compare both budget and expenditure data to costed national strategies for improved accuracy of annual gap analyses. This enables the government to reallocate funding to areas of need on a regular basis and consider the evidence from expenditures in the development of new budgets.

As described in Box 3 above, these case studies have shown that harmonization of RMET and HA can reduce implementation costs; avoid potential duplication in data collection; ensure congruence of data collected from different exercises; and improve information use for both planning and policy.

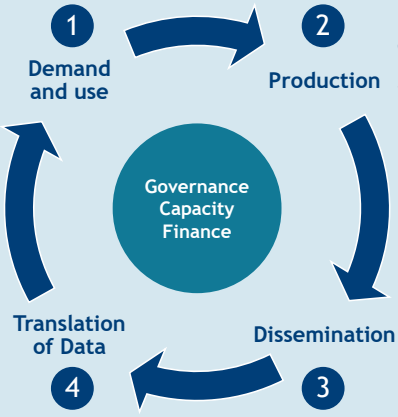
Experience to date has focused on the harmonization of data collection for RMET, HA, and in some cases NASA. However, there is opportunity to explore (1) harmonization of additional routine HRT exercises, as well as alignment with existing domestic financial management systems, and (2) harmonization of data analysis, as relevant to the context and goals of HRT in each country. While each exercise may have its own distinct use cases, these harmonization efforts can elevate the visibility of these processes and their analyses, promote efficiencies in planning and budgeting, and induce demand for routine data as it becomes more consistently available. These benefits further advance institutionalization, by reducing human and financial resources required for data collection and freeing up time to focus on identifying new data needs and use cases to build and strengthen demand for HRT data. Box 4 below defines institutionalization of HRT and describes its core dimensions.

In addition to harmonizing collection of government, donor, and implementing partner data, other data needs like household out-of-pocket health expenditures can be integrated into other routine data collection processes such as the Poverty, Income, Consumption and Expenditure Surveys. For example, Zimbabwe has integrated the HA Household Module into this survey, which is conducted every two years and produces household expenditure data for the HA. These processes are not the focus of this guide, but their integration has the potential to further supports sustainability and institutionalization of HRT.

Box 4: Definition of institutionalization

Institutionalization: In this guide, we define institutionalization as government-led and country-owned routine production and utilization of HRT data, which relies on government financing, governance, and capacity. In the case of HA, this data follows an internationally accepted health accounting framework. Regular production of HRT data enables evidence-based policy and priority-setting, reinforcing a cycle of demand for routine production of this data and further contributing to institutionalization. This is outlined in the figure below, which focuses on institutionalization of Health Accounts but is applicable to HRT more broadly.

Figure 4: World Bank framework for the institutionalization of NHA



(1) Demand and use

- As country leaders make tough trade-offs to ensure an equitable and efficient allocation of scarce health resources, there is a critical need for an evidence base
- Regular use of NHA in policy making contributes to more sophisticated policy analysis

(2) Production, data management, and quality assurance

- Sustainable production of data remains a major challenge in many countries, but capacities to produce NHAs have grown significantly in the developing world over the past decade

(3) Dissemination

- Making the collected data available for analysis enhances transparency and—with experience—analysis and insights that transform policy
- In countries that have institutionalized NHA, data are widely disseminated
- Dissemination takes place at two occasions: (1) when the NHA tables have been produced, and (2) after the data has been translated into policy-relevant briefs

(4) Translation of data and dissemination of specific analysis

- The value of NHA data is limited unless used as an evidence base for more informed health financing decisions
- Country ownership of the translation process allows countries to champion key policy insights, increasing the likelihood that the answers NHA data provide will be used to affect policy

Reproduced from WHO's Guide for the institutionalization of national health accounts in the African Region (5)

Stepwise Approach to Harmonizing Health Resource Tracking

This resource guide describes Five Stages for planning and implementing a needs-based HRT process and exploring harmonization to align processes and ultimately see the benefits described above. The step-by-step process provides a generalized plan for assessing HRT needs to inform routine policy and planning, identifying how current processes can be optimized and harmonized to meet those needs, and adapting current tools and protocols to meet the identified needs and objectives. The approach described draws from common and unique lessons from the experiences of Malawi and Zimbabwe in scoping and implementing a harmonized HRT process for RMET and HA.

Stage 1: Assess Use Cases and Landscape Local Health Resource Tracking

Summary

Stage 1 begins with generating a deep understanding of the demand and use cases for HRT. Beginning with this analysis helps to optimize HRT efforts to produce evidence critical for decision-making.

Key Steps

1. Identify current and anticipated use cases across routine policy, planning, and management, and specific HRT data required for each. Document needs across government and development partners, and at national and sub-national levels.
2. Landscape current HRT exercises and other routine data sources (e.g., integrated financial management information systems) against the evidence needs for these use cases. Assess where there is overlap in data collected and how HRT efforts could be augmented to address gaps.

Key Stakeholders

- Leadership from MOH officials or technical partners supporting HRT
- Discussions with relevant government departments and development partners who provide and use HRT data

Capacity & Resource Needs

- Capacity: Engagement of those who regularly use HRT data; access to policies, budgets, plans to identify HRT evidence needs
- Resources: Consultations may incur some transport and meeting costs

Timeline

- Approximately 1-2 months depending on the number of stakeholder discussions and the breadth of HRT landscaping necessary

Key Outcomes

By the completion of Stage 1, stakeholders should be aligned on:

- A list of current and anticipated use cases and related data needs
- A mapping of HRT exercises and/or existing routine datasets against use cases

This will help to determine the scope and objectives for harmonization and strengthening HRT in Stage 2.

Key Steps

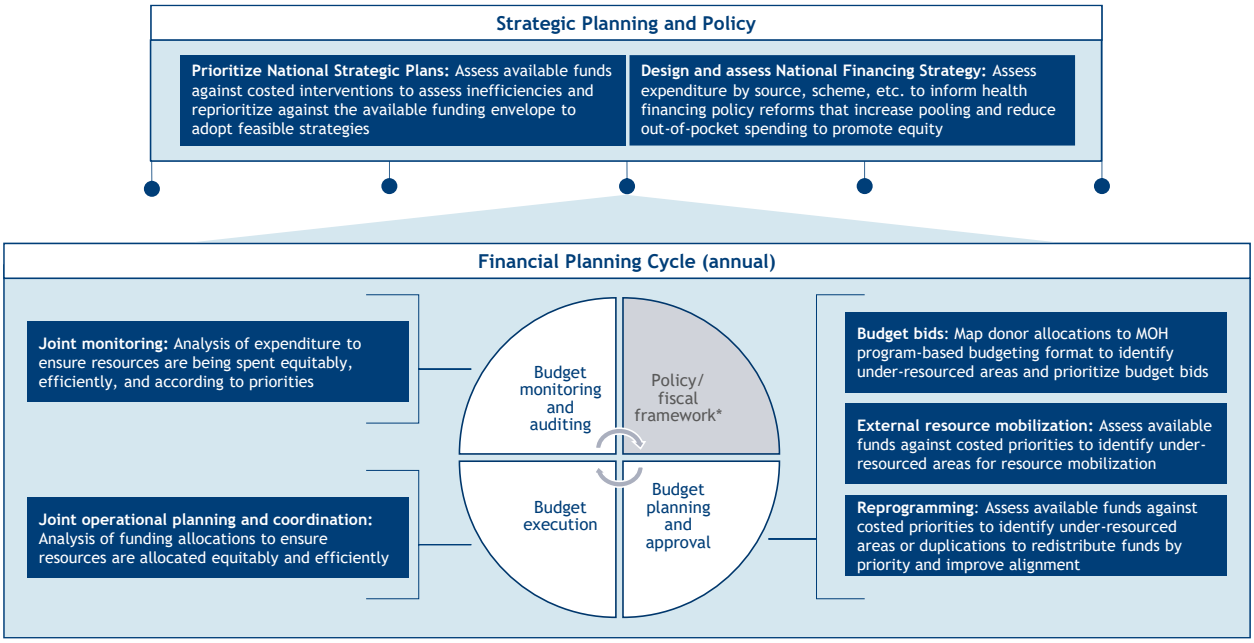
Assessing use cases against existing HRT exercises is critical for determining the scope and optimization of HRT for all decision-makers in the health sector. This should be completed prior to implementing, aligning, or harmonizing any HRT efforts. Step 1.1 is used to identify where and how HRT is used for policy, planning, and management, while Step 1.2 helps assess what HRT exercises meet those needs and whether any gaps remain. This will then inform Stage 2 on the scope and objectives of harmonization and ensuring this is the right solution to current problems, with the goal of enhancing data use.

In Malawi and Zimbabwe, these steps informed the implementation and harmonization of RMET and HA. The governments identified a need for annual budget data to align and coordinate domestic and external funds against government plans; and donors and development partners similarly agreed on the need for this data to proactively align new projects with government plans and avoid duplication of funding. On a less routine basis, but no less important, comprehensive expenditure data would be needed to inform policy and programs to improve health system efficiency, sustainability, and equity. These use cases have informed the nature and focus of HRT and harmonization in both countries as well as the design decisions made along the way, such as the integration of HA data collection into existing RMET tools.

Step 1.1: Identify current and anticipated health resource tracking use cases

As previously described, governmental and non-governmental policymakers and planners leverage HRT data for specific 'use cases.' HRT data sheds light on where funds are being budgeted or spent, by whom, and for what. This financial data can be used to identify funding availability and gaps, duplications, and inefficiencies that can in turn be used to inform joint budgeting and planning, domestic and external resource mobilization, alignment and coordination of funding, and the monitoring of spending trends and financial flows to improve overall accountability, equity, and efficiency across the health financing function. In the below, Figure 5 outlines a few high-level use cases of HRT across each major part of the financial management cycle. More detailed use case examples are given along this cycle and beyond in the previous section.

Figure 5: Illustrative Use Cases of Health Resource Tracking Data



Identifying use cases

Begin with identifying which stakeholders regularly leverage HRT data for decision-making across policy, planning, and management, looking across government officials, development partners, and private sector stakeholders, and at both national and subnational levels. In turn, through stakeholder consultations and/or workshops, build an understanding of the current and anticipated needs of these data users (including where and by whom budget and expenditure data is and will be used in policy, planning, and management, and at what level of granularity and with what frequency). It may help to use a collaborative process to enable identification of joint use cases and/or complementarity and overlap in data needs. It is useful to start this process by reviewing past health policies and strategies, operational plans, budgets and other documents from government and development partners to understand how financial data was used or displayed and what data sources were leveraged.

Mapping out data needs

Alongside use cases, map out what data and analyses are necessary to answer the questions being posed and document the level of data disaggregation as well as the frequency required. Worksheet 1 below can be used to document and detail use cases across routine planning and management functions. For further information about each of these types of use cases, please see these illustrative case study examples. An editable template for this worksheet is provided in the Appendix.

Worksheet 1: Documenting use cases and data needs

Use case	Analysis	Data elements	Stakeholders	Frequency
Developing a National Health Strategy / Health Financing Strategy	• Monitor spending against progress on health indicators to define priorities within new National Health Strategy • Tracking expenditure by source and income to evaluate financial protection to define health financing strategies	• Expenditure on health for multiple years, disaggregated by geography and source, aligned to key disease priorities defined in the NHS • OOP spending by household income	Ministry of Health	Every 3-5 years
Prioritizing a National strategic plan for HIV/AIDS	• Comparison of budget data aligned to interventions and activities in national HIV/AIDS strategic plan to identify inefficiencies, prioritize activities, and coordinate funding among donors and implementing partners	• Budget data for all HIV/AIDS programs by government and donors for upcoming 5 fiscal years, disaggregated by interventions and activities	Ministry of Health Donors	Every 1-5 years
Prioritizing an RMNCN Investment Case	• Comparison of budget data aligned to each costed RMNCH program and geography to prioritize strategies and interventions for investment case	• Budget data for all RMNCH programs by government and donors for next fiscal year, disaggregated by RMNCH intervention area	Ministry of Health Donors	Every 3-5 years
Donor resource mobilization	• Analysis of gaps and duplications in funding by disease program, geography, cost category against costed needs in policy / plan, to inform external resource mobilization	• Budget data for donors and government aligned to costed policy / plan	Ministry of Health Donors	Annual
Developing a domestic health budget / budget bid	• Gap analysis of funding allocations by disease program, geography, cost category against costed needs in policy / plan, to inform domestic health budget and workplan • Evidence on budget execution and previous spending (incl. OOP) to make the case for increased domestic budget for health	• Budget allocations from all non-government sources aligned to costed needs in policy / plan • Budget and expenditure data in comparable formats / disaggregation • Expenditure by source from all sources	Ministry of Health and Ministry of Finance	Annual
Operational planning for RNMCAH	• Understanding of budget envelope for each RMNCH program to develop prioritized annual operational plan	• Budget data for all RMNCH programs by government and donors for next fiscal year, disaggregated by RMNCH intervention area	Ministry of Health Implementing partners	Annual
Joint operational planning and coordination	• Analysis of funding allocations against priorities to assess gaps and duplications to reallocate, re-prioritize, and coordinate implementation	• Budget data for donors and government by geography, disaggregated by subnational service delivery priorities	Subnational MOH Donors and implementing partners	Annual
Routine monitoring of programmatic spend	• Analysis of spending against budget allocation to identify inefficiencies in spending for performance management	• Expenditure analysis against budget allocation, by disease program and geography	Ministry of Finance	Ideally, quarterly

Note that additional data related to service delivery and health outcomes are often required for the above use cases, but we have focused here on HRT data. Analysis of budget and expenditure data against programmatic data on health service delivery and outcomes is often critical for resource planning and management, and to evaluate the impact, equity, and efficiency of health spending.

Step 1.2: Landscape current and new health resource tracking exercises against use cases

The next step is to assess which HRT exercises and/or data systems meet the data needs of each of the use cases identified for annual planning and resource management, and whether any gaps remain. The following table outlines common types of data and relevant sources—including routine information systems such as Integrated Financial Management Information Systems (IFMIS), routine data collection during RMET or HA exercises, and/or other routine surveys. HRT exercises leverage and analyze this data against national plans or globally methodologies (e.g., SHA) to produce insights that inform ultimate use

cases. There may also be instances in which routine data sources can be leveraged directly for analyses to inform use cases—e.g., an analysis of government budget and expenditure data from IFMIS to calculate budget execution.

Table 1: Common Data Sources

Source of Funds	Data Type	Common Data Source
Government	Budget data	• IFMIS or similar financial management system
Government	Expenditure data	• IFMIS or similar financial management system
Donor	Budget data	• Routine data collection every 1-2 years for Resource Mapping
Donor	Expenditure data	• Routine data collection for Resource Mapping or Health Accounts
Households	Expenditure data	• Poverty, Income, Consumption, and Expenditure Survey or other household survey for Health Account
Private sector	Budget Data	• Routine data collection for Health Accounts
Private sector	Expenditure Data	• Routine data collection for Health Accounts

As described above, programmatic and health outcome data can be leveraged alongside HRT data to generate operational insights that managers can use to proactively improve how funds are allocated and spent. Common data sources on service utilization and health outcomes include systems like DHIS2 or other Health Management Information Systems. This is discussed further in Step 5.3.

Documenting where data is available for identified use cases

First, consider routine HRT exercises and information systems. For each use case, do the current HRT processes produce the data required? Is the data available in existing financial management systems (and if so, is it available at the right frequency and quality, and in the right format for decision-making)? Do existing exercises and systems meet evidence needs fully, partially, or not at all? Worksheet 2 below can be used to assess the data available and remaining data gaps from existing HRT exercises against the specific use cases identified on Worksheet 1. An editable template for this worksheet can be found in the Appendix. Consider all sources of HRT data and exercises conducted routinely or on an ad-hoc basis (e.g., HA, RMET, NASA, PER, PETS, and others), using previous tools and reports to assess data availability at the level of detail required to meet use cases. Gauge where there may be overlap, complementarities, or gaps in data collection, analysis, and use cases. For example, perhaps data on HIV/AIDS programming from NASA is used to inform the Government's applications to PEPFAR or the Global Fund to Fight AIDS, TB, and Malaria but similar granular exercises do not exist for the entire health sector.

Worksheet 2: Documenting data available and gaps remaining against use cases

Use case *Fill from Worksheet 1*	Which Resource Tracking Exercises Fulfill Data Needs		Which Routine Information Systems Fulfill Data Needs	Comparison of data collected	Analysis of data collected against needs
	RMET	HA	IFMIS		
Developing a National Health Strategy	Annual expenditure data disaggregated by geography, source, disease priority (defined in NHS) No OOP data	Annual expenditure data, not aligned to disease classification in NHS Provides OOP data from Poverty, Income, Consumption and Expenditure Surveys	Annual government expenditure data disaggregated by geography and disease priority IFMIS does not collect OOP data	Exercises collect overlapping expenditure data from government and development partners, using different classification systems. IFMIS collects domestic expenditure data that feeds into RMET and HA HA only collects OOP data	**Needs fully met by RMET and HA** RMET expenditure data aligned to NHS classifications enables analysis against government priorities OOP data helps understand financial protection
Developing a domestic health budget	Annual budget data for all program areas and geographies from development partners *If required, RMET data collection tool can be rolled out to government agencies outside MOH for greater clarity on domestic health budgets*	Does not include budget data	Does not currently include budget data for development partners	No overlap between RMET and HA; budget data only collected in RMET	**Needs partially met by RMET** RMET budget data sufficient to understand high-level gaps in funding for most NHS priorities, to inform domestic health budget
Operational planning for RNMCAH	Annual budget data for all RMNCAH interventions, aligned to government budget classification system *Budget data may be incomplete as RMET collects data only from major development partners*	Does not include budget data	Annual government budget data disaggregated by government budget classification system and geography, which is leveraged for RMET report	No overlap between RMET and HA; budget data collected for government and development partners in RMET. IFMIS collects domestic budget data that feeds into RMET	**Needs partially met by RMET** RMET budget data sufficient at national level and IFMIS budget data sufficient for domestic sources at national and subnational levels Additional data and/or coordination may be needed at subnational level for smaller development partners
Routine monitoring of programmatic spend	Budget allocation for previous fiscal year (and expenditure in some cases) by disease program and geography	Expenditures for previous fiscal year by HA disease classification	Government budget and expenditure data for previous fiscal year by disease program and geography	Exercises collect overlapping expenditure data from government and development partners, using different classification systems IFMIS collects government budget and expenditure data in same classification system	**Needs not currently met by RMET nor HA; domestic monitoring needs currently met by IFMIS** RMET budget and expenditure data not comparable because submitting organizations and projects may not be uniform across years; and different classification system of HA and RMET hinders comparison of data Where IFMIS collects comprehensive data, it could satisfy data needs for domestic sources

Determining how to address unmet data needs

If any identified needs are not met by current HRT efforts, consider whether collection of missing indicators can be integrated into any of the current processes, or whether a new HRT method should be introduced and integrated with current efforts. In most cases, it is likely that data needs for certain use cases that are unmet by current exercises can be met by introducing a few new data elements into existing data collection efforts. Data elements refer to the categories or classifications of data collected—e.g., funding agents, type of provider, disease focus area, program areas, accounting classifications, etc. The harmonization process is an optimal time to ensure needed data elements are integrated into HRT processes. **Box 5** provides an example of how Zimbabwe used identified needs to strengthen and harmonize HRT.

Box 5: Case Study

Strengthening health resource tracking for routine use cases in Zimbabwe

The HA expenditure tracking exercise was introduced in Zimbabwe in 2013 to inform national level policy and planning by providing insight into the sources and distribution of funders and consumers of health resources. In 2015, following a learning visit to the Ministry of Health (MOH) in Malawi, the MOHCC in Zimbabwe identified a need for forward-looking data to inform joint resource planning and coordination for health across government and development partners on an annual basis. This introduced the idea of a second resource tracking exercise (RMET) which would collect mostly budget data from all sources against the programmatic and disease priorities defined in the National Health Strategy (NHS) to assess available funding against key national priorities. The first HA exercise was still in progress to meet the need for globally standardized expenditure tracking, so the MOHCC decided to integrate data collection for RMET and HA to meet the data needs for both exercises.

HRT processes can also be adapted to meet evolving needs. In Zimbabwe for instance, the harmonized RMET and HA tool has been modified in certain years to collect additional data on specific program strategies such as HIV/AIDS, Reproductive, Maternal, Newborn, and Child Health (RMNCAH) and Community Health to inform national policies, quantify resource gaps, and develop investment cases to mobilize resources from specific donors.

If a new or significantly expanded exercise is being considered (e.g., going from HIV/AIDS to a sector-wide exercise), consider how this will be tailored to the country context, including specific program classifications, cost categories, and geographies. Determine who will lead efforts to implement the new exercise(s) and ensure they are included in all further steps of the process laid out in this document.

Key Outcomes

By the end of Stage 1, stakeholders should be aligned on:

- A list of current and anticipated use cases across the policy, planning, and management cycle, and a detailed analysis of relevant data and evidence needs for each
- Mapping of HRT exercises and/or existing routine datasets against use cases to identify whether these fully or partially meet data needs, where gaps remain, and where there may be overlaps in the data collected by different exercises. This will help to determine the scope and objectives for harmonization and strengthening HRT

Stage 2: Determine the Scope and Objectives for Harmonization

Summary

Stage 2 focuses on assessing whether harmonization of routine HRT exercises is feasible and desirable for all stakeholders by determining whether harmonization will address HRT challenges and meet evidence needs of ultimate use cases. Common harmonization objectives include creating process efficiencies and improving data availability and comparability to enhance data use, towards the goal of institutionalization. In practice, Stage 1 and 2 often run in parallel and feed into one another.

Key Steps

1. Assess appetite for harmonization and align on stakeholders' objectives for harmonization.
2. Explore alignment across HRT processes and identify scope for harmonization (which processes will be integrated, what data will be collected and at what frequency).

Key Stakeholders

- MOH leadership is integral to define the goals and scope of harmonization
- Discussions with all providers and users of HRT data help to understand desirability and feasibility of harmonization

Capacity & Resource Needs

- Capacity: Technical understanding of HRT processes; authority to determine scope and objectives
- Resources: Several stakeholder consultations may incur transport and meeting costs

Timeline

- ~2-4 weeks with dedicated time of key decision-makers. More time may be required if there is desire to explore a scope for harmonization beyond data collection (e.g., for data analysis and use)

Key Outcomes

By the completion of Stage 2, stakeholders should be aligned on:

- A detailed overview of the objectives, scope, and process of all routine HRT exercises
- Defined objectives and scope of harmonization to inform Stages 3-5
- Systems for coordination and collaboration across MoH and technical consultants, implementing partners, and donors during the harmonization process

Key Steps

In Stage 2 we focus on the question of harmonization, assessing whether harmonizing HRT efforts will advance key goals for the MOH and other stakeholders, such as creating process and resource efficiencies, improving data use, and advancing institutionalization. Stage 2 can be completed simultaneously with Stage 1, after identifying the main use cases for HRT.

Harmonization generally involves creating a single timeline, process, and tools for data collection and data analysis across two or more HRT exercises. It often also requires considerable collaboration among stakeholders involved in the different exercises. Harmonizing HRT exercises can achieve a more cohesive, integrated, and timely dataset of financial information that can be used in decision-making. This advances the use of data in policy and planning and helps to institutionalize HRT efforts.

In Malawi and Zimbabwe, harmonization has entailed creating a single data collection process and tool for both RMET and HA, as well as NASA (Malawi only), while data analysis and use remain separate to meet unique purposes for different stakeholders. **Box 3** in Stage 1 provides insight into the achievements of harmonization of RMET and HA in Malawi and Zimbabwe. The experience of both Zimbabwe and Malawi in harmonizing RMET and HA is also documented in this set of case studies.

Step 2.0: Enabling Environment

Before considering whether harmonization is appropriate and feasible, key ingredients of an enabling stakeholder environment should be in place, including:

- An **owner or champion** (i.e., individual and/or relevant department within the MOH) to lead the process of both harmonization and collecting data through a harmonized process. This champion will help secure buy-in from stakeholders (e.g., donors and implementing partners submitting and using) for harmonization, and should ensure the harmonized process is inclusive, maximizes stakeholder alignment, and results in defined use cases for the government and other partners. When carrying out harmonized processes, this champion will take responsibility for requesting data, ensuring the quality of outputs, training new team members, and engaging other government departments and partners to encourage data use.
- Buy-in across **departments within the MOH** responsible for HRT exercises, as these departments will be the ultimate stewards of the harmonized process.
- **Partners like WHO, PEPFAR, UNAIDS, World Bank, etc.** who have technical consultants in-country that are willing and able to engage in harmonization discussions. Input from these partners is critical in Stage 3 to align on data elements to be included and at what level of granularity, and to accurately 'map' data classifications across exercises where needed. As described in the following sections, these stakeholders need to be on board with potentially compromising some detail in order to generate a consistent and comparable dataset that is fit-for-purpose for the defined use cases.
- Buy-in from **donors and implementing partners such as World Bank, PEPFAR, Gavi, and Global Fund** (and others) who will be providing financial data, using HRT outputs for their own programming, providing feedback to further improve and streamline processes, and/or financially or technically supporting harmonization and HRT efforts. These partners should be engaged throughout the harmonization process to leverage available support, identify the granularity and types of information available in their financial systems, determine where outputs can be used for their internal processes, and communicate data needs.
- Where external development and technical partners will be supporting harmonization, it is important to **ensure alignment** in financial and technical support, identify/designate key counterparts within the government who will direct efforts, and develop a transition and sustainability plan at the start.

Top Tip: It is critical that the harmonization process is led by government, ensuring resulting datasets and processes are aligned to government needs. While HRT data is useful for many stakeholders, the sustainability of these efforts depends on ownership and relevance to government needs.

Step 2.1: Align on the objectives for harmonization

Given this enabling environment, the first step is understanding the current challenges with HRT and the potential for harmonization to address them. Common problems that harmonization can address include duplicative processes for HRT demanding considerable human and financial resources; the need for a more consistent set of budget and expenditure data aligned to government priorities and classification systems; fatigue from stakeholders providing similar data for different exercises, leading to delayed provision of data or poor quality; among others.

To ensure a harmonized process will meet the needs of all relevant stakeholders, it is important to align on the problems that are being solved for, and the key objectives of a harmonized process. To do this, it is useful to conduct a series of discussions with government officials and development partners who both provide and use HRT data. You may choose to start with individual discussions and then bring stakeholders together in groups to determine the objectives and scope for harmonization. This can be conducted for Steps 2.2 and 2.3 (assess potential and identify scope) simultaneously. Together with use cases, objectives for harmonization will help determine the final scope for harmonization and inform later trade-offs such as determining the data elements and level of detail to be collected and where to streamline.

Top Tip: Harmonization should only be pursued if it is an appropriate solution to current HRT challenges and will increase efficiency and data availability for intended use cases.

The following table describes common objectives of harmonization, using the case of Malawi to describe challenges pre-harmonization and how harmonization helped to solve these. Objectives of harmonization in Zimbabwe were similar.

Table 2: Harmonization Objectives in Malawi

Common objectives of harmonization	Examples in Malawi	
	Challenges before harmonization	Results after harmonization
To consolidate management of HRT within a single team or a smaller team	Prior to harmonization, RMET and HA were led by the Planning and Budgeting Unit and Policy Development Unit, respectively, within the MOH.	The Department of Planning and Policy Development now manages both RMET and HA with a smaller core team.
To conserve limited human and financial resources devoted to HRT to free up time and money for other activities.	Duplicative human and financial resources devoted to HRT within different MOH Units.	By creating a single and simplified data collection process for RMET and HA in Malawi, the cost of data collection has decreased and the DPPD can focus efforts on data analysis.
To minimize duplicative requests for data from data providers (usually government	In Malawi, both RMET and HA used to collect similar financial data from MOH, district authorities,	Stakeholders now provide data for both exercises in the same tool once a year.

agencies and development partners)	donors and implementing partners at different times of year.	
To reduce complexity so that submitting organizations are more easily able to provide data in the right format and level of detail	The Malawi MOH had trouble filling out the initial harmonized tool because of rigidities in the Integrated Financial Management Information System (IFMIS), which did not break data down by health care function or disease area. Through subsequent rounds the MOH and partners determined that the tool would collect higher-level, less granular data where necessary to accommodate these limitations.	During harmonization, the MOH tailored the tool to collect only data that was necessary to meet identified use cases and feasible to collect given financial management systems. This has allowed providers to submit data more easily and more accurately.
To ensure consistency and complementarity in the outputs of multiple data collection exercises (also see Box 6)	While budget and expenditure data were both collected, they were in different formats and used different classification systems which hindered comparability and consistency.	Harmonized HRT in Malawi has enabled the collection of different datasets—such as budget and expenditure data—in the same format and using the same classification system. This improves consistency and complementarity across datasets.

Box 6: Comparability vs. complementarity of budget and expenditure data

The need for improved consistency and comparability of data has been identified as a goal for harmonizing HRT exercises in many countries. This ensures that decision-makers can use different sets of data (e.g., budget and expenditure) for complementary purposes for policy, planning, and resource allocation decisions. For example, when developing a healthcare financing strategy, expenditure data can be used to understand the burden of out-of-pocket payments and existing levels of pooling to design new financing mechanisms; while budget data can help quantify resources available during the coming years to support these mechanisms. HRT data can be used in a similar way for developing National Health Strategies. Budget and expenditure data can also be used in a complementary way to track progress against plans. In Zimbabwe, this data is used collectively to conduct an annual gap analysis of the costed HIV National Strategic Plan 2020-2025, comparing the costed needs for each year to expenditure data for previous years (e.g., 2020 and 2021) and budget data for future years (2022-2025). This allows for a more accurate depiction of the remaining funding gaps during annual reviews.

However, comparing sets of budget and expenditure data for the same year (e.g., budget data for 2021 Round 6 of data collection with expenditure data for 2021 from Round 7) to track execution (for example), is often not possible because submitting organizations, lines of funding, and budget cycles are not always the same. In some cases, budgets are reallocated between focus areas during the year (e.g., during the COVID-19 pandemic) or supplementary budgets are approved, making it difficult to compare budget and expenditure data from a given year. Currency fluctuations introduce further complications, by increasing or decreasing the real value of the budget. These factors (among others) make it difficult to compare sets of data accurately and directly from different rounds of HRT without making numerous assumptions.

Step 2.2: Identify the scope of harmonization

Assessing the feasibility of harmonization

When determining whether harmonization is the right solution to current HRT challenges (from both efficiency and data needs perspectives), it is also important to assess if harmonization is feasible. Worksheet 3 below can be used to compare the scope, processes, and requirements for different HRT efforts to determine whether there is alignment or potential for alignment. It is helpful to start with the most frequently conducted and routinely used HRT exercises (e.g., Health Accounts and RMET) to generate the greatest efficiencies from harmonization. This worksheet may be completed by different responsible parties for each exercise under consideration; however, it is useful for a core team from the agency/department leading the process within the MOH to manage and review all inputs to ensure that standard definitions are used, and comprehensive inputs are provided by all. An editable template for this worksheet is provided in the Appendix.

Worksheet 3: Documenting resource tracking exercises for harmonization

Exercise name:	e.g., Health Accounts	e.g., Resource Mapping	e.g., NASA
Aims			
Objectives: *What decisions does this exercise aim to inform?*			
Scope			
Data sources: *Who does the exercise collect data from?*			
Financial scope: *Does the exercise collect budget or expenditure data? what are the other main data elements?*			
Processes			
Stewardship: *Who is responsible for managing different parts of the exercise?*			
Methodology: *Is there a standardized methodology and tools, or is the process country-specific?*			
Resources required: *Who provides human and financial resources to complete the exercise?*			
Frequency: *How often is the exercise conducted?*			
Timeline: *How long does the exercise take each time it is conducted? Is there a specific time of the year it is conducted?*			

Determining the scope of harmonization

Based on objectives for harmonization and feasibility, determine the scope of what will be harmonized. If data collection, analysis, or use are to be harmonized, it will require alignment on *data sources, timelines, frequency*, and *tools* (including *methodology* to some extent). For harmonization to be effective, it is imperative that the sources and scope of data are similar and that the timelines can be aligned to streamline processes and tools as required. See **Box 7** for an example of this in Malawi. Based on the scope and processes of each exercise documented in Step 1, consider the following key questions:

- *Is there alignment across different exercises to be harmonized? If not, can scope and processes be aligned across the different exercises to be harmonized?* For example, RMET and HA are often conducted on different timelines depending on when budget and expenditure data are available and required for their use cases. However, in Malawi and Zimbabwe the timelines are now aligned so that the harmonized exercise is carried out six months into the financial year when expenditure data is available and budget planning is beginning for the next fiscal year.
- *If some part of the scope/process cannot be aligned, will it be removed or carried out separately?* While RMET and HA exercises collect data from government and development partners on the same timeline, the HA data are analyzed on a different timeline as production must wait until private sector and household data is collected. As RMET does not require this data, this component is funded and completed separately with a different timeline and tools.

It is also useful to assess any concurrent efforts to improve or streamline HRT efforts—such as the development of IFMIS that will produce critical HRT data—to ensure that any enabling processes in the

pipeline are considered as part of these efforts to strengthen and harmonize HRT. By the end of the discussions on scope, stakeholders should align on the following:

- *Which parts of the exercise will be harmonized?* Some, or all, of the processes from training, data collection, cleaning, and analysis may be integrated, depending on the needs and expectations of stakeholders as well as the timelines of each component.
- *Which data sources will be harmonized?* Data collection may be harmonized from all sources or a selection, depending on feasibility.
- *What types of data will be harmonized?* Consider whether budget and/or expenditure data will be harmonized, and for how many years of data, keeping in mind the anticipated use cases of the resulting data.
- *What timelines and frequency will allow for outputs to meet all data needs and use cases?* Determine when in the year the harmonized exercise will need to be completed and how often it will be conducted based on use cases, as well as the timeline and frequency of data collection for elements that cannot be integrated into the harmonized process. Specific sequencing is further discussed in Stage 4.

We will discuss *stewardship/governance* and *coordination of funding and technical support* in more detail in Stage 3 and Stage 4. Alignment of governance and resources within the government and across development partners will be critical to achieving coordinated and sustainable HRT processes.

Determining whether harmonization is appropriate

Harmonization can help to minimize the burden of data provision and maximize the use of scarce human and financial resources, advancing institutionalization objectives. However, there are instances where harmonization may not be appropriate. A few examples are listed below.

- ***Enabling stakeholder environment***: First and foremost, without the buy-in of stakeholders identified at the beginning of this Stage, harmonization is not likely to be successful. Harmonization requires considerable collaboration across the government and technical and development partners involved in different exercises, and a willingness to alter existing HRT efforts to optimize and streamline processes and data collected towards addressing key use cases. Try to secure buy-in from across stakeholder groups prior to harmonization.
- ***Alignment across HRT exercises***: If the mapping of HRT exercises revealed significant differences, then harmonization may not be an appropriate solution—e.g., if data inputs for different exercises are mostly unique or require much different levels of granularity; if there is no overlap in the sources of data; if timelines and frequencies cannot be aligned; or if data cannot be collected in the same format.
- ***Granularity of data required for use cases***: The required complexity or granularity of data may be a particular bottleneck to harmonization, as harmonization often requires compromises that might limit some use cases and therefore may not be a preferred approach. For example, if budget data is only needed at a high level (e.g., mapped to broad objectives in a strategic plan), while expenditure data is required for all HA elements and it is a priority for stakeholders to preserve this granularity, then harmonization may not be the best solution. In other cases, a government unit may want to conduct a 'deep dive' of some of the standard HRT outputs for greater visibility during planning and budgeting, and therefore may need to conduct a separate more detailed data collection exercise.
- ***Addressing HRT challenges***: Moreover, harmonization may not always be the right solution to HRT challenges and bottlenecks. If the key challenge to generating a comprehensive dataset is partners' unwillingness or inability to provide requisite data in a timely manner, harmonization might not be the right solution—unless the rationale for this hesitancy is that partners are already getting too many duplicative requests. If the problem being faced is that the program classifications in RMET (aligned to the National Health Strategy) are different from program classifications in district budgeting and financial management systems, the solution may lie in standardizing the country's program classification systems so that financial data from district level can be more directly inputted into the RMET tool.

The example in Box 7 below provides an example to help clarify what the process of assessing potential for harmonization and aligning on the scope for the harmonized exercise looks like in practice.

Box 7: Case Study

Assessing potential and aligning on objectives/scope of harmonization in Malawi

In Malawi, the MOH initiated a health sector-wide RMET exercise in 2011 to increase visibility on donor funding and its alignment with government priorities, and subsequently began to track HA in 2014. Given the similarity in data sources and scope of these two exercises, the MOH began to harmonize data collection in 2019. The MOH leveraged learnings from harmonization efforts in Zimbabwe through government-to-government exchange of information and tools.

Step 2.0, Enabling environment: The development of the harmonized process and tool was led by the DPPD—which previously led the RMET and HA exercises—with technical support from CHAI and the WHO country office in mapping data elements and developing the tool. Leadership from the DPPD was important to secure buy-in from health sector stakeholders for a harmonized data collection process and defining needs from both sets of data.

Step 2.1, Define objectives: As described above, through harmonization, the government sought to consolidate management of the exercises; reduce financial and human resource requirements to allow for a greater focus on data use; and reduce complexity and duplicity of requests to partners.

Step 2.2, Identify scope: Visualizing the two exercises in the table below, the MOH identified:

- Overlap in data sources
- Overlap in scope of financial data collected
- Potential for alignment in stewardship
- Potential for alignment in frequency and timeline of data collection

	RMET	HA
Aims		
Objectives	MOH, donors, and implementing partners use RMET to coordinate domestic and external funding, align partners to national strategies, allocate funds to priority disease interventions, and identify efficiency gains.	MOH, donors, and implementing partners use HA data to guide strategic direction of national policies and plans to address trends in expenditure identified across the health system.
Scope of data collection		
Financial Scope	Between three to five years of budget data disaggregated by: • Funding and implementing partners • Programmatic function and intervention • Target population • Geography • Cost type	Typically, three years of expenditure data disaggregated by: • Funding source and implementing partners • Disease classification • Target population • Health care provider • Factors of provision
Data Sources	• MOH • District authorities • Donors • Implementing partners	• MOH • District authorities • Donors • Implementing partners • Private sector insurers and providers • Sample household survey

Processes		
Stewardship	Prior to harmonization, led by the Planning and Budgeting Unit within the MOH. The DPPD as a whole now manages both RMET and HA.	Prior to harmonization, led by the Policy Development Unit within the MOH. The DPPD as a whole now manages both RMET and HA. Household survey is completed by National Statistics Office.
Methodology	Country specific, sector-wide exercise aligned to national health strategies. Excel-based data collection, data aggregation and visualization tools	Internationally standardized health sector-wide expenditure tracking methodology. Excel-based data collection tool; Health Accounts Production Tool used for analysis.
Resources	Technical and financial assistance from CHAI	Technical and financial assistance from WHO and USAID, as well as from World Bank and the Millennium Challenge Corporation for high-cost household surveys
Frequency	Annual exercise aligned with fiscal year	Every two to three years
Timeline	Approximately 10-12 months from data collection to dissemination	Approximately 18-24 months from data collection to dissemination

Based on the above comparison, harmonization was limited to the collection of government and development partner budget and expenditure data, with data collection for HA from private sector organizations and households as well as data analysis and reports remaining separate. The first harmonized tool was developed to collect two years of budget data and three years of expenditure data (revised to one year of expenditure data for the annual process in subsequent years) from the MOH, donors, and implementing partners to inform both RMET and HA analysis and reports.

In harmonizing RMET and HA, it was also important to the MOH and WHO that the HA analysis and report writing remain separate. This was because (1) HA requires more time for collecting private sector and household data, while RMET data analysis must be finalized sooner to inform annual budgeting and planning, and (2) HA requires a very specific set of analysis including this larger data set that answers different questions from RMET. However, by harmonizing the data collection tool, the government was able to explore using both budget and expenditure data for policy and planning.

Outcomes: The initial objectives of harmonization for the government have been largely met. Harmonization has allowed for a smaller core team at the DPPD to manage the data collection process, freeing up resources for data analysis and use, as well as other activities. The MOH can now undertake a large part of the process with limited technical and financial assistance. In this way, harmonization has advanced the goal of institutionalization of RMET and HA.

Key Outcomes

By the end of Stage 2 stakeholders should be aligned on:

- The objectives for harmonization, considering current challenges with HRT and the data needs of intended use cases
- The aims, scope, processes, and timelines for each HRT exercise that may be harmonized, to assess potential for harmonization
- Defined scope for harmonization, including which parts of the exercises will be harmonized, for which data sources and types of data, and using what timeline and frequency
- Systems for coordination and collaboration across MoH and technical consultants, implementing partners, and donors during the harmonization process

Stage 3: Define Data Elements to Meet Use Cases

Summary

Stage 3 requires aligning on the scope and detail of data elements to be collected in a harmonized tool to meet evidence needs for identified use cases. Harmonization does not mean that all elements previously collected must be collected, and Stage 3 provides an opportunity to revisit what data is needed and possible to collect with timeliness and quality.

Key Steps

1. Select which data elements will be included in a harmonized process and at what level of disaggregation, by evaluating data elements against intended data use cases and confirming feasibility of data collection. Consider starting with a 'minimum data set,' with the minimum number of elements and level of detail required to address key use cases, aligned to government policies, strategies, plans, and classification systems where possible.
2. Assess how data elements from multiple exercises will be collected in one harmonized tool/format by identifying alignment across data elements and conducting 'mapping'/'cross-walking' of metadata for partially aligned data elements, which allows providers of data to input data in a single format that can be used for multiple exercises.

Key Stakeholders	Capacity & Resource Needs	Timeline
• Collaboration between MOH HRT teams and technical and development partners to ensure decisions on data elements and cross-walking will continue to meet key evidence needs	• Capacity: Deep understanding of HRT data sources, data availability, methods, classification systems • Resources: Several rounds of consultations will likely incur transport and meeting costs	• Approximately 2-3 months to allow for several rounds of discussion and cross-walking between data elements

Key Outcomes

By the end of Stage 3, stakeholders should have aligned on:

- Documented decisions on which elements to include and at what level of detail, for future review and iteration as necessary
- Mapping of overlapping or partially aligned elements and cross-walking where needed, to simplify and align data collection in the tool

Key Steps

Once the decision has been made on whether and what parts of HRT to harmonize, it is time to flesh out the details of the data to be collected with the harmonized process. In Stage 3, we determine the scope of data elements to be collected for HRT. Data elements refer to the categories or classifications of data collected—e.g., funding agents, type of provider, disease focus area, program areas, accounting classifications, etc.

Step 3.1 is to assess whether the data elements collected by routine HRT efforts meet the needs identified in Stage 1 and determine how to fill gaps. The ultimate data collection format and classifications should be aligned with government and partners' capacity, needs, and systems as they relate to use cases. Step 3.2 focuses on efforts required to harmonize data collection across exercises, including 'mapping' or 'cross-walking' data elements so that data collected in one tool/format can be converted to another tool/format for reporting and use. For example, RMET data elements may need to be mapped to the SHA internationally standardized elements together with SHA specialists. This step is critical in ensuring the resulting data can be consistently and accurately presented in a format that is usable for each exercise.

Top Tip: Harmonization is an opportunity to revisit what data is available and the quality and accuracy of data shared, to right-size the amount and granularity of data that will be collected to meet intended use cases and needs of decision-makers. This may require some compromises to the types of data and the level of detail collected. It is important to think about the capacity and systems of submitting organizations, past data collection experiences, and ultimate use cases to make these decisions.

Top Tip: Ensure the data elements and classification systems are aligned with those used in government policies, strategies, plans, and systems; and/or that there is a clear 'cross-walk' in place to ensure consistent and quality data is collected aligned to these classifications.

Box 8: Case Study

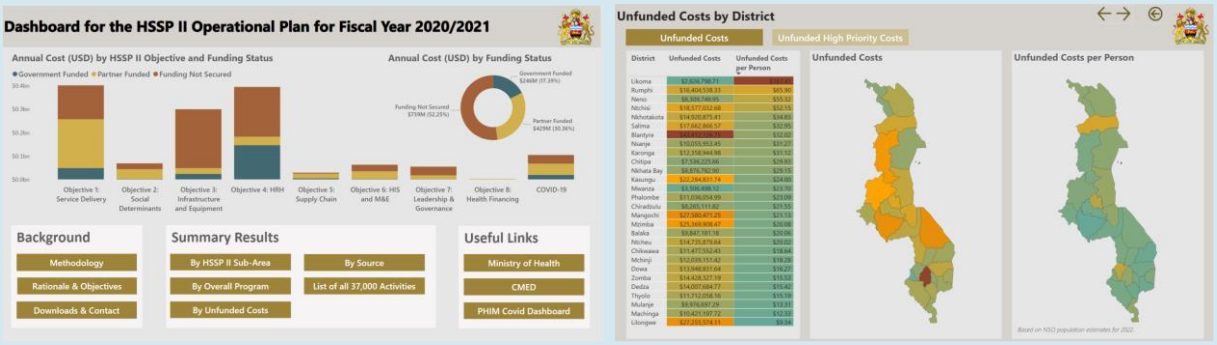
Defining data elements in Zimbabwe and Malawi

In Malawi and Zimbabwe, the MOH ensured data classifications in harmonized tools were compatible with the definition of programs, disease areas, and levels of care defined in national health policies, strategies, and operational plans; cost categories or types defined in accounting systems; and the government's fiscal year. Thus, resulting data could be directly mapped to government plans, strategies, budgets, etc. to support planning and identify funding gaps or duplications against existing priorities. This ensured that submitting organizations (government, donors, implementing partners) were familiar with the language used in the data collection tool from their own systems, the previous RMET tool, and/or government strategies and plans. Any data elements previously difficult to collect due to complexity or incompatibility with available financial management and reporting systems were either modified or dropped from the harmonized tool, as described below.

Operationally within the data collection tools, this means that financial data for each activity is broken down by areas such as programmatic function and intervention (e.g., Function: HIV; Intervention: Prevention–Condoms); cost category as defined in the MOH accounting system (e.g., Drugs and Commodities); HSSP II Objective and Sub-Area (e.g., Objective: Human Resources for Health; Sub-Area: Health worker training – in-service); region/district, etc. and submitting organizations are asked to provide this data in alignment with the government's fiscal year. For production of the HA and NASA, the data elements are automatically cross-walked within the tool to the most relevant data elements and classifications in the SHA and NASA methodology (e.g., 'HIV

Prevention – condoms' maps to the SHA disease classification 'Reproductive Health – Contraceptive Management').

In Malawi, data collection aligned to HSSP II Objectives and Sub-Areas has enabled this interactive online dashboard using PowerBI, that shows the funding status of each and displays unfunded costs by District.



Leadership from the government as well as input from partners and technical experts are all critical at this stage, to ensure trade-offs do not harm the completeness and quality of data, and that data is collected in a format most compatible with government systems and strategies to maximize potential for data use. The definition and mapping of data elements at this stage directly affect the potential for use of information in policy and planning.

Step 3.1: Select data elements to be included in a harmonized process

In Stage 1, we determined the key use cases for HRT in planning and management and which HRT systems and/or exercises would meet the data needs of each use case. Each HRT exercise collects a number of data elements at various levels of detail. Where there is flexibility to tailor data elements, it is useful to evaluate each data element against the data use cases identified in Stage 1 to assess whether a certain data source, data element, and level of disaggregation is required for planning and management decision-making. This will help streamline data requests from stakeholders to minimize complexity and ensure additional data requested specifically responds to identified use cases. It is also important to think about the capacity and systems of submitting organizations and past data collection experiences as data elements are weighed against ultimate use cases, keeping in mind that harmonizing and strengthening routine HRT may require some compromises to the types of data and level of detail collected.

Top Tip: It may help to start with a 'minimum dataset' that includes the minimum number of elements and level of detail required to meet key use cases (with a focus on government decisions and priorities), collected in a simple tool that is easy for partners to complete to reduce time lags. Work with experts in each HRT methodology (e.g., SHA) to conduct 'crosswalks' of metadata across exercises (as described in Step 3.2), to ensure data collected is usable for different use cases and exercises.

This step and the trade-offs in prioritizing data elements are particularly important if data collection is to be harmonized across different HRT exercises; different exercises may collect different data at different levels of detail, which will have to be standardized for harmonization. Reconciling different levels of data granularity and use cases from RMET and HA when mapping/cross-walking elements, particularly when still aspiring for a user-friendly and streamlined tool, is typically one of the most complex and challenging parts of harmonization process.

Box 9: Case Study

Trade-offs between data detail and data quality

It is important to consider that every additional element in the HRT tool increases the burden of provision for someone filling out the tool and may add complexity that can cause confusion. It is best to start simply and include the minimum number of elements and level of detail required, building on this over time as partners become more familiar with the exercise and as information systems allow. This must also be balanced against other considerations such as the standardized SHA methodology which requires certain data elements and classification systems. In **Malawi**, the MOH identified simplicity and ease of data provision as key objectives for RMET/HA harmonization. To meet these goals, they:

- **Limited requests for data that are not critical for resource planning and management**. The tool only collects data on *target population* for HIV, TB, and Malaria programs to inform programming and investments for the Global Fund but not for other programs.
- **Identified the level of detail that was feasible for government and development partners** to provide, given local relevance as well as financial management and reporting systems. Rather than collecting the 9 categories and 30 sub-categories of *Health Care Providers* usually collected for HA, the MOH simplified the level of detail to capture the 13 classifications most relevant and that capture the Malawi context. Ultimately the data that was collected did not change but the process was simpler for the government and partners to complete.
- **Used cross-walks or mappings where possible** so that data could be collected once (aligned to the MOH Programmatic Function and Intervention, Cost Categories, etc.) and directly mapped to the SHA classification system (see Step 3.2).

While these decisions reduce the granularity of data, there is greater ease in collecting data in a timely manner and confidence in the application of this data.

Worksheet 4 below provides a suggested template to list all the data elements currently collected or planned to be collected by each exercise to be reviewed and harmonized, including how the element is defined and the purpose of this element in decision-making. If useful, include the level of disaggregation or specific data classifications collected in an additional column for further review and comparison.

Consider the follow key questions:

- *What data elements are most relevant and useful for government, development partners, and other decision-makers as per the identified use cases?*
- *For each of the above elements, what level of detail and disaggregation is required for use cases across planning, budgeting, and tracking investments?*

Worksheet 4: Documenting data elements for resource tracking

Exercise name: RMET

Type	Data Element	Definition	Purpose/use case
Project and Activity Details	Project Name	Name of the project as defined within the submitting organization	No specific use case: this data element simply allows for easy reference during discussions
Financiers and Implementers	Funding Agent	Organization or entity funding the project. May be same or different from implementing partner.	To assess funding from domestic and external sources; to coordinate programs across partners
Health Providers	Type of Provider	Type of health facility or health provider the project is supporting: • National Referral Hospital • Regional Hospital • District Hospital • Health Cendre • Community Health Workers	To assess funding from domestic and external sources; to coordinate programs across partners To allocate funds as per the service delivery priorities outlined in national health strategies; to ensure distribution is equitable as per health needs
Programmatic Function and Intervention	Disease Focus Area	The disease area or areas targeted by the program. Disease areas defined as per the Health Sector Strategic Plan (HSSP)	To allocate funds as per the disease priorities outlined in national health strategies; to ensure distribution is equitable as per health needs To report to donors on programmatic interventions they are funding; to prepare funding requests for donors, e.g., Global Fund
Strategic Objective	Health Sector Strategic Plan Objective	The HSSP strategic direction(s) impacted by the project, such as 'Strengthening governance' or 'Enhancing health infrastructure'	To align available funding to government policies and priorities
Target Population			
Geography			
Budget and Expenditure			
Cost Type			

Once this is completed, consider the following questions to assess whether and at what level of detail to collect each data element in the final data collection tool. Hold conversations with key providers and users of data to assess:

- *What level of disaggregation is feasible based on existing systems for financial management and reporting used by government and development partners?* For instance, consider that many financial management systems only collect expenditure data by line-items such as 'salaries' rather than detailing where funds are spent—e.g., whether at national referral hospitals or district hospitals—or the programmatic target of these expenditures. Where data needs cannot be met using current systems, it is helpful to identify system changes that might ultimately be required to meet these needs.
- *Based on feedback received on the data collection processes to date, are there any consequences (e.g., compromised accuracy or timeliness) of collecting the data elements and level of detail expected?* For instance, if data providers must make a number of assumptions to disaggregate data to the level of detail required in the tool, they may take a long time to provide data.
- *For any data elements deemed unnecessary at this stage, might they be relevant for future needs?* For instance, target population data may not be required for the routine planning and management functions of the government but may be useful in the future to inform the development of donor investment cases and operational plans. Changes can also be made in annual updates to the HRT tool and process if needed.
- *For any data elements currently collected that are not useful or not applicable to the local context, is the harmonized methodology and tool flexible to drop the element or modify the level of detail at which it is collected?* For instance, RMET exercises are country-specific and can be tailored to meet identified use cases, whereas exercises such as HA and NASA have defined, internationally standardized methodologies that may or may not allow modifications. In such cases, it is useful to discuss any modifications with the teams running these exercises and align on a minimum standard dataset that can be used to continue producing relevant reports. WHO was involved in the harmonization of exercises in Malawi and Zimbabwe.

Step 3.2: Create a mapping of data elements for the data collection tool

If data collection is to be harmonized, the next step is to assess how data elements from multiple exercises will be collected in one tool and one format. **This applies only to data elements that are deemed necessary to meet the use cases identified in Stage 1 or to maintain integrity of the HRT methodology.** To do this, list the data elements collected by the exercises next to each other to visualize areas of overlap and differences. This generally results in three types of data elements:

1. Those that are **the same (fully aligned) across the exercises**

Data elements that are fully aligned can be included in the tool and collected for all harmonized exercises. For example:

RMET Zimbabwe	HA Zimbabwe	Alignment	Decision and Rationale
Funding Agent	Source of Funds	Full alignment	Both data elements collect the same data. A drop-down menu with a selection of all local funding agents will be included

2. Those that are **different and only required for one exercise**

Data elements that are required for only one exercise can be included in the harmonized data collection tool and aligned to the format and level of detail feasible within the tool. For example:

RMET Zimbabwe	HA Zimbabwe	Alignment	Decision and Rationale
N/A	Health Care Provider	No alignment as the data element only collected for one exercise	The data element is necessary for the production of HA. Rather than including the full range of nine categories and 30 sub-categories of *Health Care Providers*, the tool will only capture the nine categories most relevant to the local context and most likely to be used by partners

3. Those that are **similar but not the same (partially aligned)**

For elements that are partially aligned, but where each exercise requires its own classification to be collected for the purposes of the exercise, it is possible to map, or 'cross-walk,' classifications used in one dataset with the classifications used in the other. This means that while the tool will collect data in one format, the data can be processed into a different format required for another exercise and use case. This enables collection of data for different purposes but using one set of inputs.

This is particularly relevant for HRT exercises that have internationally standardized methodologies, such as the SHA or NASA. These methodologies have standardized data elements and data classification systems to ensure comparability across countries, but not all data classifications will be intuitive and relevant within the local context. For these data elements, in order to collect data for the production of HA and NASA, the MOH in Zimbabwe and Malawi created mappings or 'cross-walks' of data

classifications used locally with those used in SHA and NASA. This has been applied to data elements such as disease classifications, health care providers, and cost types.

This is a complex process that requires technical support from government officials and technical partners familiar with the HRT methodology and definitions of each data element, to ensure the harmonized tool maintains integrity of the data collected for each exercise. If there is alignment on the objectives of the exercise, it is possible to create this crosswalk and meet international requirements as well as what is needed locally.

For example, in Malawi, Programmatic Functions and Interventions defined by the MOH based on national policies and strategies are used to classify budget and expenditure data in the RMET tool. Two related data elements within the HA include 'Disease Classification' and 'Health Care Function,' which collect similar data but with different systems for categorization. The following table shows an example of how budget and expenditure data related to condoms and ARVs for HIV prevention and treatment are mapped to the most relevant categories in the HA disease classification system.

RMET Malawi	HA Malawi	Alignment	Decision and Rationale
Programmatic Functions and Interventions, defined by the MOH based on national policies/ strategies, e.g., • **HIV Prevention - condoms** • **HIV Treatment - ARV**	*Disease Classification,* e.g., • Reproductive Health - Contraceptive Management • Infectious and parasitic diseases - HIV/AIDS and other STDs	Partial alignment as the data element and classifications are similar but may not directly overlap	The tool collects data by MOH programmatic function and intervention. These inputs are then mapped to the closest SHA *Disease Classification* at a similar level of disaggregation. E.g., • 'HIV Prevention - condoms' maps to the SHA classification 'Reproductive Health - Contraceptive Management' • 'HIV Treatment - ARV' maps to 'Infectious and parasitic diseases - HIV/AIDS and other STDs'

The following example shows how this can be expanded to SHA Health Care Function as well. In some instances, a Programmatic Function/Intervention maps 1:1 with a defined SHA Health Care Function; while in other cases, multiple Interventions fall under one SHA Health Care Function and Disease Classification. This indicates that if data had only been collected in the SHA format, the granularity of Interventions articulated within Malawi's plans might have been missed, which could hinder subsequent use of data for planning and budgeting.

Figure 6: Example Cross-Walk in Malawi

Programmatic Function	Programmatic Intervention	Health Care Function	SHA Code	Disease Classification
Environmental Health and Diarrheal Diseases	Disease Surveillance - Disease surveillance and vector control	Preventive care - Epidemiological surveillance and risk and disease control programmes	HC 6.5	Non-disease specific
Malaria	Prevention - ITNs/LLIN (Nets)	Prevention and public health services - Prevention of communicable diseases	HC.RI.3.3	Infectious and parasitic diseases - Malaria
Malaria	Prevention - Indoor Residual Spray (IRS)	Prevention and public health services - Prevention of communicable diseases	HC.RI.3.3	Infectious and parasitic diseases - Malaria
Malaria	Larvicides	Prevention and public health services - Prevention of communicable diseases	HC.RI.3.3	Infectious and parasitic diseases - Malaria

Here, Programmatic Function/ Intervention and the SHA Health Care Function align 1:1

Here, multiple Programmatic Interventions within one Programmatic Function align with the same SHA Health Care Function and Disease Classification

Additional country examples as well as mappings are available in the Appendix and described in these case studies from Zimbabwe and Malawi.

Worksheet 5 below can be used to document the mapping and decisions on which data elements to include. An initial mapping may be conducted by a core team managing the process of harmonization, followed by consultations and revisions with technical experts in each of the HRT methodologies.

Worksheet 5: Aligning data elements across resource tracking exercises

EXERCISE e.g., RMET	EXERCISE e.g., HA	Alignment	Decision and rationale	Stakeholder involvement
Funding Agent	Source of Funds	Full alignment	Both data elements collect the same data so a drop-down menu with a selection of all local funding agents will be included	Core team for harmonization is sufficient
N/A	Health Care Provider	No alignment as the data element only collected for one exercise	The data element is necessary to produce the HA. Rather than including the full range of nine categories and 30 sub-categories of Health Care Providers, the tool will only capture those categories most relevant to the local context and most likely to be used by partners in a drop-down menu	Core team with involvement from partners and technical experts, e.g., WHO, PEPFAR
Geography	N/A	No alignment as the data element only collected for one exercise	The data element is important for understanding geographic equity of resource allocations, enabling reallocation to under-resourced areas. The tool will capture budget and expenditure data by region and district.	Core team for harmonization is sufficient
Program Function and Intervention	Disease Classification Health Care Function	Partial alignment as the data element and classifications are similar but may not directly overlap	Programmatic Function and Intervention classifications are defined by the MOH to assess financing against key priority areas such as HIV or RMNCH, while Disease Classification and Health Care Function are standard classification systems within the HA. The tool will collect Programmatic Function and Intervention data and a combination of these inputs will be automatically mapped within the tool to the closest SHA Health Care Function and Disease Classification at a similar level of disaggregation.	Core team with involvement from partners and technical experts, e.g., WHO, PEPFAR

Key Outcomes

By the end of Stage 3 stakeholders should be aligned on:

- Documented decisions of the data elements to be included in the harmonized tool and level of granularity for each, comprising an initial minimum dataset
- Documented mappings/crosswalks of partially aligned elements that have been approved by technical experts in each HRT methodology

Stage 4: Adapt the Resource Tracking Process to Meet Harmonization Objectives

Summary

Stage 4 focuses on development and/or adaptation of a harmonized tool and process that will produce relevant data for requisite analyses and use cases.

Key Steps

1. Develop a harmonized tool by adapting an existing tool or designing a new one, which is simple and intuitive to complete and is interoperable with existing data systems and HRT formats.
2. Agree on and document governance, responsibilities, timelines, and coordination of funding and technical support for the harmonized process.
3. Identify outlets for disseminating data and additional advocacy or analyses/outputs needed to encourage data use; and explore the potential to integrate data analysis and use.

Key Stakeholders	Capacity & Resource Needs	Timeline
• Collaboration between MOH HRT teams, development and technical partners, and other entities supporting HRT to finalize a tool and process that meets evidence needs and clarifies roles and stewardship	• Capacity: Understanding of MS Excel or other relevant applications; capacity to identify how data will be used; ability to coordinate alignment on a harmonized process • Resources: Discussions to align on a new process and tool may incur some transport and meeting costs	• Approximately 2-3 months depending on whether a new or existing tool is being adapted and what other processes are being aligned

Key Outcomes

- A draft harmonized tool for piloting with all stakeholders in Stage 5
- Refined and documented processes, responsibilities, governance, and coordination for harmonized HRT
- Roadmap for data use and dissemination

Key Steps

In Stage 4, we focus on developing the harmonized tools and processes planned in the earlier stages. Step 4.1 outlines guidance for developing a harmonized data collection tool, which has been the focus of most harmonization efforts to date, while Step 4.2 offers guidance on the potential for harmonizing data analysis and data use both during the design and implementation of HRT. In Step 4.3 we will focus on activities to streamline and integrate some of the administrative and logistical components of the exercise, including timelines and management.

Box 10: Case Study

Adapting and iterating on existing data collection tools in Malawi and Zimbabwe

In Zimbabwe and Malawi, the harmonized tool was developed based on what was initially planned and used for RMET—a basic Excel spreadsheet with pre-defined, standardized categories that allow multiple stakeholders to input data in a consistent format. For example, this includes programmatic functions and interventions aligned to MOH priorities, cost categories/types aligned with government accounting systems, health provider level aligned to the SHA classification system, etc.). A graphic of Malawi's tool is provided in Box 11 and both tools are provided in Appendices A (Malawi) and B (Zimbabwe). Both tools are currently maintained in Excel to allow for annual revisions based on feedback and in-house maintenance at the MOH. For instance, in Malawi, over time the MOH decided to harmonize NASA with the other annual exercises, and HIV interventions and target populations were added to the existing tool to satisfy additional NASA data needs. The MOHCC in Zimbabwe is also working to revise the RMET-HA tool to collect more granular data down to facility-level to inform sub-national planning. Each addition of data is driven by use cases.

Step 4.1: Devise a harmonized tool to collect identified data elements

As described in Stage 2, data collection has been the focus of harmonization efforts in Malawi and Zimbabwe, because most HRT exercises collect data from the same/similar sources and at a similar frequency. For data collection to be harmonized, it is necessary to develop a harmonized tool.

Choosing a platform and format for the harmonized tool

The harmonized tool can either leverage an existing format used for one of the exercises or be developed anew and adapted to the data elements and detail determined for the harmonized process. To decide on the right approach, evaluate the following questions:

- *What software do the exercises use for data collection?* For instance, in Malawi both RMET and HA used Microsoft Excel for data collection from government and donors, and so both the HRT teams as well as data providers were familiar with Excel functionalities and the harmonized tool was developed in MS Excel. Later, data visualization was added through Microsoft Power BI.
- *How will the harmonized dataset differ from previous datasets in scope and size?* If the new dataset determined in Step 3 is not significantly different in content and format than previous datasets, it may make sense to use an existing tool and build any new data or functionalities into the same tool as needed.
- *How familiar are the HRT team and data providers with data collection and analysis? Are they more familiar with certain tools, formats, or ways of collecting and analyzing data?* If so, it may be easiest to start with something familiar and build on it rather than starting from scratch. Conversely, if teams have had significant challenges with current tools, this is a good opportunity to start fresh with a new format that is aligned to the harmonized data elements.
- *What is needed to collect and export the types of data needed for decision-making? Is the software for data collection able to satisfy these needs?* While MS Excel is often used for data collection due to government and donor familiarity with the software, it does have limitations—

for example, automated interoperability with existing systems for program and service delivery management and reporting. Consider whether data can be easily inputted from routine systems (e.g., IFMIS or DHIS2); or can be exported into the Health Accounts Production Tool (HAPT) to enable downstream analyses. In some cases, digital systems can be developed, as described in Stage 5.

In most cases, it is useful to start with an existing tool and build additional functionalities to meet new needs for the harmonized data elements. If the harmonized data collection tool is to be built on a digital platform (see Stage 5), it is useful to first pilot the format in MS Excel or another simple, existing application to refine and test the format and functionalities in a manual tool.

Top Tip: Consider integration and interoperability with routine data systems and downstream tools from the start. For example, assess whether data can be directly inputted from IFMIS which is often done for the Health Accounts. Also consider if other sources of routine data (e.g., DHIS2) might provide additional perspectives on government allocations, spending, and service delivery outcomes; and if the tool's format allows data to be exported easily into systems such as the HAPT.

Developing the components of a harmonized tool

As described in Stage 3, MOHs have found it useful to align data classifications within the tool with government strategic plans, priorities, and accounting classifications where possible, and that data is mapped to the country's fiscal year for planning. For example, the data collection format in Zimbabwe is aligned to the Programmatic Functions and Interventions defined in the National Health Strategy, and the Cost Categories based on MOHCC accounting classifications. This makes the resulting data directly comparable to the costed interventions in the National Health Strategy, disaggregated by Cost Category, so that gaps or inefficiencies in allocations can be identified for resource mobilization or reallocation.

The tool should be formatted in a user-friendly manner in order to gather the required data with accuracy. Consider the following enablers from Malawi and Zimbabwe's experience using similar Excel-based tools derived from a common format:

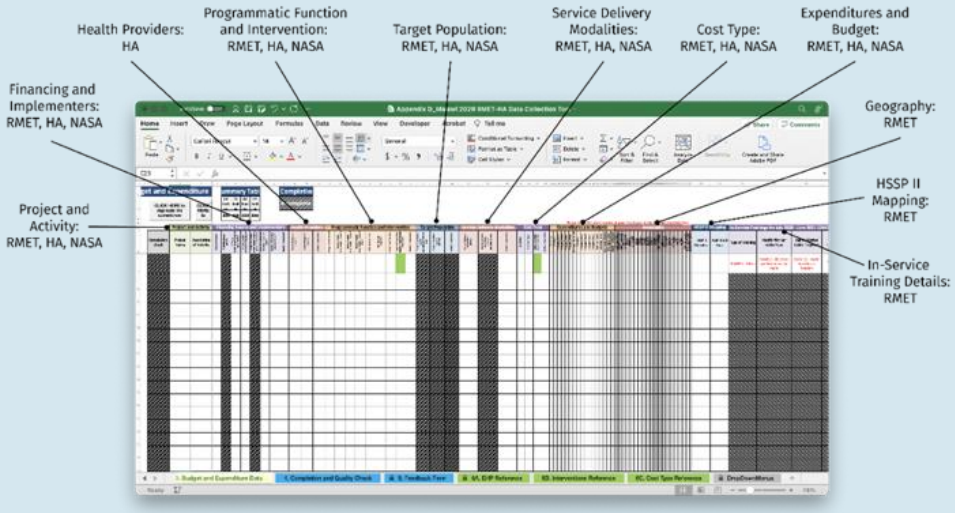
- **Detailed guidance***:* The tool should provide detailed guidance for providers of data on how to classify data and what assumptions may be necessary. Definitions for all data elements and categories should be provided, often in a reference tab. There should also be a space for data providers to document any assumptions they make. This guidance helps to improve quality and accuracy of data entered.
- **Drop-down menus***:* Where possible, provide drop-down menus (or the equivalent in the case of a digital tool) to standardize data collection. These help to ensure data is mapped to a consistent set of classifications to allow for comparability and aggregation across entries. Drop-down menus should provide all possible options, and each option should be mutually exclusive to prevent any confusion when selecting the best option.
- **Mandatory vs. optional data:** Clearly mark which fields are mandatory to meet data needs for the use cases identified so that providers of data can focus on fulfilling these requirements. Keep in mind that data providers may skip any optional fields.
- **Data quality and completion checks***:* Data quality and completion checks allow providers of data to review their work prior to submission. These may include simple functions such as a stoplight color system that highlights incomplete submissions, and/or data summary and visualization tabs where submitting organizations can review their inputs for accuracy.
- **Feedback***:* Most tools incorporate a space for feedback on the tool and data collection process, including any challenges with disaggregating or classifying data. This feedback is critical to refine and adapt the data elements, tool, and process during subsequent data collection cycles.

Box 11: Case Study

Adapting data collection tool for harmonization in Malawi

When harmonizing RMET and HA in Malawi, the existing RMET tool was used as a starting point. The MOH chose to do this because:

- RMET required a larger number of data elements, many of which were similar to HA data elements. Therefore, satisfying the HA data needs required fewer additions to the existing RMET tool.
- RMET was typically conducted annually for planning purposes, whereas HA was only conducted every 2-3 years. As such, respondents were more familiar with the format and requirements for the RMET tool.
- The RMET tool is country-specific and therefore can be adapted and tailored as needed, whereas the HA tool is more standardized. However, it is possible to map country specific data elements to standardized categories.



The harmonized tool has a single data entry sheet that collects all data elements for the harmonized exercises, as shown in the above, with an additional sheet that displays a preliminary summary and visualization of data entered in the tool to serve as a quality check. Data collected in the RMET format on the main data entry sheet are automatically mapped to HA and NASA classification systems, so data providers can see how entries are categorized for these exercises.

Tools from the harmonized processes in Zimbabwe and Malawi are available in the Appendix and explained in greater detail in these case studies.

Step 4.2: Define responsibilities, timelines, and coordination of HRT and data use

The final step in harmonization ensures that the objectives of harmonization identified in Stage 2 are fully realized. In this step, the MOH, its departments that manage HRT, development and technical partners (where relevant), and other local entities involved in HRT (where relevant) must decide on and operationalize the governance, administrative, and managerial functions of HRT. This includes outlining clear timelines and coordinated roles, along with a plan for external technical support and funding of these exercises.

Defining governance and stewardship of HRT

Consider the following key questions to plan for effective **governance and stewardship** of the process:

- *What team(s) will be responsible for managing the HRT exercises?* If more than one, how will harmonized portions of the process be managed and where will separate portions of the process start and end?
- *Do other domestic institutions (e.g., academic institutions, think tanks, National Statistics Offices) currently support HRT and/or will they continue to support parts of the harmonized process?* Are the areas where these entities are currently managing or supporting the process clearly defined, and/or is there a need to align responsibilities and accountability?

Some pieces of guidance based on country experiences and WHO's guidelines on institutionalizing HAs (5) and forthcoming Health Account Institutionalization Maturity Framework are outlined below. This is further elaborated in the section on institutionalization in Stage 5.

- **Government stewardship**: While partners may support HRT, a government team/unit should be the ultimate champion or steward of the process to support institutionalization within existing systems and ensure outputs are useful for government needs. Leadership by the government is also needed to collect timely data from partners (e.g., by having requests come from senior-level officials to convey their urgency), to engage key donors and funding pools to identify where outputs can be used for their internal processes, and to build momentum for institutionalizing HRT. Responsibility for the HA report in particular may be embedded within host organizations other than the MOH—such as the National Statistics Office, academic institutions, and private think tanks—given that mandates of different actors involved in different HRT exercises are clearly defined, as described below.
- **Clear ownership and accountability within a government unit:** It is useful that the unit leading the process have the HRT exercise integrated as one of its annual deliverables and appoint officers to support and coordinate any partners providing technical assistance or other entities involved in parts of the HRT process. Within this unit/team, the 'champion' of HRT should be a permanent staff member that can take responsibility for outputs, train other team members, and facilitate engagements across departments/agencies and partners for data use.
- **Organizational framework to coordinate multiple actors:** Where multiple stakeholders are involved in HRT processes, there should be a clear organizational and governance framework to define responsibilities and clear lines of accountability to clarify ultimate responsibility and facilitate collaboration. If there are parts of HRT exercises that will continue to be conducted separately—e.g., HA and RMET analysis and report development that happen separately in Malawi and Zimbabwe after joint data collection and cleaning—then clearly defined communications and roles of each player involved is key. For example, in some countries, the HA report is generated by a unit not within the MoH, but rather in the National Statistics Office or a local academic institution or private think tank. This should also link to partner support as described below.

Top Tip: Ensure responsibilities are clearly articulated within organizational mandates and governance systems to further institutionalization. This includes integrating the HRT exercise as an annual deliverable of the unit(s) leading the process; appointment of dedicated staff to champion and coordinate the process; and ensuring clear documentation regarding roles across entities, timelines, and coordination of funding and technical support.

Box 12: Case Study

Harmonizing ownership of the data collection process in Malawi

There are advantages to consolidating stewardship within a single team/unit to create ownership of the harmonized exercise and reduce inefficiencies in the harmonized processes. In Malawi, RMET and HA exercises were initially undertaken by different units within the DPPD. Following harmonization

of processes (e.g., integration of partner training, data collection, and cleaning for the RMET and HA exercises), a core team within the DPPD is responsible for circulating the harmonized tool, conducting trainings, and collecting and analyzing data from government entities and development partners. This unit also analyzes RMET data to generate insights and develop the RMET report. Every two years, another dedicated Health Financing Unit within the DPPD works with the National Statistics Office to leverage this harmonized dataset alongside national household survey data and additional private sector survey data to develop the final HA report (see Figure 7). Having a clear framework for coordinating the roles of each of these actors in production of both sets of data/reports is critical.

Coordinating funding and technical support

Early discussions with partners can help to understand their ability to provide financial or technical support as needed throughout the process of harmonization as well as for maintenance of the HRT processes in future years. If HRT exercises are funded and supported from different sources, it is necessary to ensure this does not hamper harmonization and detract from coordination and completion of HRT exercises. Related to the above considerations on governance, use the following key questions to assess the needs for **coordinating funding and technical support** for the harmonized process:

- *Do external partners currently support HRT and/or will they continue to support the harmonized process?* Is there a plan for transition of responsibilities to government teams for institutionalization? Will there be a need for continued technical support from partners related to different methodologies—e.g., WHO or PEPFAR involvement in producing the HA or NASA? Will there be changes in the funding needs after harmonization—e.g., no further need for data enumerators by reducing the complexity of the harmonized tool?
- *Is there need for coordination across agencies or across external partners to align funding and technical support for the harmonized exercise?* Are the areas where partners are currently managing or supporting the process clearly defined, and/or is there a need to align and address duplication of partner efforts?
- *Is there a signed document in place regarding who will do what, by when, and with whom, to enable collaboration and coordination?* Where there are multiple stakeholders involved in harmonization efforts and with different HRT processes, it can help to have an agreed and signed document regarding who will do what, by when, and with whom. For example, if the government agrees to implement the data collection process, the budgeting team needs to ensure that public funds are allocated to this exercise aligned to the plan for when the exercise will take place. Similarly, when development partners like WHO commit to providing training or analytical support, their respective program teams need to ensure these defined resources are available. All of these elements need to be pre-agreed and aligned so that each stage can take place on the defined timeline for results to be ready for defined use cases throughout the year.

Adjusting processes and aligning timelines

Consider the following key questions to determine the data aggregation, cleaning, and validation **processes** as well as **timelines** for the harmonized process:

- *On what timeline will data collection, analysis, and dissemination take place to ensure HRT information can feed into the annual planning process and inform other use cases?*
  What dependencies restrict the timelines for data collection, cleaning, analysis, and dissemination? When does the process need to start each year to account for these dependencies? Data collection and analyses should be timed so that outputs can be used within the (usually) annual budget planning processes of both government and development partners. To achieve this, it is important to be realistic about the time required for data collection, data cleaning, and validation—which often includes a few rounds of back-and-forth with partners—as well as data analysis. For example, as described earlier, RMET and HA are often conducted on different timelines depending on when budget and expenditure data are available in the year. In Malawi and Zimbabwe, the timelines are now aligned so that the harmonized exercise is carried out six

months into the financial year when expenditure data is available and budget planning is beginning for the next fiscal year. Timing of the process can be revisited in future years to ensure it meets the requirements of all data users.

- *Are new or revised processes or capacities needed for data aggregation and cleaning to adapt to a larger dataset with new data elements, classification systems, and/or data sources?* Harmonization can often lead to a larger dataset, sometimes with additional data elements, classification systems, sources of data, or financial years of budget or expenditure data collected. This can require bringing in additional capacity for data aggregation and cleaning; adjusting processes and ensuring adequate time is allocated for data cleaning; or rethinking systems for data management. It is important to plan and budget for new processes or capacity that will be required.

Developing materials to support the harmonized process

The new harmonized process and the governance structures, funding arrangements, timelines, and capacities to support it should be outlined in **standard operating procedures** (SOPs) or another similar guideline. This should outline administrative and managerial functions required for the harmonized process and align responsibilities for each (e.g., data collection, cleaning, analysis, etc.), including designating clear technical support and funding roles to meet required timelines. This SOP will be used by the unit responsible for the harmonized HRT process and supporting partners, and can be supported by checklists, supplementary tools, and training materials that codify steps for data collection, cleaning, analysis, and report-writing.

Box 13: Case Study

Codifying RMET Processes in Malawi

In Malawi, SOPs and other RMET materials have been compiled into a Resource Mapping Toolkit that helps to onboard new team members and ensure consistency and quality within the process and resulting HRT data/outputs over time, while advancing institutionalization. Malawi's toolkit includes:

- An introduction to RMET
- Detailed processes and timelines for each stage of RMET, from planning to data collection to dissemination
- Checklists, templates, and other tools for planning, training, data entry, and quality control
- Examples of practical applications of RMET data and potential analyses.

Similar toolkits and SOPs have been developed in other countries for RMET and HA processes.

Training materials on the harmonized tool are particularly important to ensure providers of data enter data with quality and accuracy. This is particularly important if new data elements have been added to a harmonized tool and process. These training materials should be developed for providers of data—including relevant government departments and development partners—as well as data enumerators if they are hired for data collection. The training approach can be tailored to the breadth of data providers targeted—e.g., hands-on trainings for smaller group of partners vs. larger workshops for larger scope of data collection. This training should cover areas such as:

- Overview of HRT, its importance, and key use cases of the data (including an orientation to strategic plans and key health sector reforms and decisions that data will map to or inform).
- Orientation to the tool, including all data elements and classification systems, and a demonstration on filling out the tool. This could include group work where participants test out completing the tool with example projects.
- Feedback gathering from participants on questions and challenges in filling out the tool. Training is an important forum to gather feedback on the tool, as described in Stage 5. After initial training and feedback, the tool is typically refined before its dissemination and use by data providers during collection exercises.

As HRT process is refined or augmented over time to address new data use cases (see Stage 5), it is important to update corresponding SOPs and training materials to capture changes. As further described in Stage 5, these materials are critical to institutionalizing HRT processes.

Figure 7 below describes the harmonized process in Malawi.

Figure 7: Malawi-specific harmonized processes

	RMET	HA
April →	**Planning** • Core team* secures exercise funding, develops workplan with timelines, scope, and responsibilities • Feedback collected from development partners** and government entities*** during the previous round of data collection is integrated into the tool or workplan • If any ad-hoc HRT exercises are planned, harmonization is discussed • Data enumerators may be hired	
May →	**Training** • Core team updates training materials with changes to classifications or data elements • Two trainings carried out for (1) data enumerators and (2) relevant government entities and development partners. Challenges with the tool noted during training and subsequently addressed if possible	
June - July →	**Partner and government responses in harmonized tool** • Data collection tool disseminated. Government entities and development partners fill in harmonized tool with hands-on support from data enumerators. • Some partners (e.g., Global Fund, USAID, and CDC) coordinate submissions from multiple sources (e.g., grant recipients), reducing duplication and discrepancies in reporting	
June - August →	**Data cleaning and aggregation** • Data enumerators clean the data, checking for completeness, duplications, and discrepancies. Additional communication with partners and government entities to validate data and address any challenges • Final submissions aggregated into a single Excel file for further cleaning • DPPD core team converts data submissions into HA and RMET formats in specific databases	
September - January	**Data Analysis and Dissemination** • Core team develops insights to inform government and partner needs, RMET report developed and endorsed by MOH Senior Management Committee and Secretary for Health, circulated to the public • RMET results discussed with Health Financing Technical Working Group to inform policy, budgeting, planning, and monitoring efforts	
+12 months		**Data Analysis and Dissemination** • HA data imported into HAPT tool. **In HA production years**, DPPD Health Financing unit leverages national household survey data from National Statistics Office, manages private sector surveys, and develops HA report

*Core team = team assembled at the start of each exercise from the DPPD
**Development partners = donors and implementing partners
***Government entities = national MOH and district authorities

Step 4.3: Identify opportunities for data dissemination and use

While advocacy is out of the scope of this document, it is important to note that producing HRT findings is often not sufficient to ensure that those findings are used in decision making processes by either government or development partners. Consider the following key questions while developing plans for stimulating data use:

- *What platform can be leveraged to communicate with partners about the harmonization process and disseminate results (e.g., health sector technical working groups)?* Using existing or new platforms for validating and disseminating findings can encourage stakeholders to internalize findings and explore use cases. It can help to identify opportunities for joint dissemination of harmonized exercises, to explore potential for new use cases not previously possible with budget and/or expenditure data in isolation. If HRT teams are different, joint planning and joint dissemination are also useful platforms for consensus building and thus better planning of subsequent cycles of HRT.
- *Will additional support or advocacy be needed to encourage government departments, donors, and implementing partners be encouraged to use outputs for resource allocation and internal planning processes?* It is helpful for the HRT team to proactively engage government departments, donors, implementing partners, and/or funding pools (if applicable) to identify where outputs can be used for internal processes and whether additional information may need to be captured to satisfy their data demands (see Stage 5). To ensure that the data is used, further advocacy efforts may be required, such as additional outputs and analyses to generate clear next steps for resource allocation or reallocation to support coordination; production and dissemination of specific materials for different stakeholders like the Ministry of Finance or parliamentarians; and involvement of civil society organizations in some cases.

Box 14: Case Study

Dissemination of RMET results in Zimbabwe

For example, in Zimbabwe, the RMET team conducts an annual dissemination and validation meeting to review RMET results gathered in the previous exercise before launching a new round of data collection. Results are also disseminated at annual technical working group meetings, while the team remains available to produce specific analyses for other key high level and technical level meetings—e.g., the Health Development Partners Group meetings, Global Fund Country Coordinating Mechanism meetings, and other meetings as requested by MOH officials and partners. For internal budgeting and planning, budgets from donors and implementing partners are analysed and used to prioritise the MOH budget bid from Treasury; while comprehensive budget data is used to quantify gaps for national strategic plans (as described in Use Case Examples).

Exploring opportunities to harmonize data analysis and use

To date, harmonization efforts have focused on collection of government, donor, and development partner data and the associated data cleaning and training processes, while analysis and use of RMET and HA exercises have largely remained separate. This may be because the rationale for harmonization was mainly grounded in process efficiencies, not the need for leveraging results alongside each other. Another reason is that harmonization in Malawi and Zimbabwe has focused on RMET and HA, which have some overlapping data sources but have different timelines for analysis and use. HA requires a separate set of data to be collected from private sector and households before final production, which means it is analyzed on a different timeline than RMET. The analyses also present results in different ways (i.e., SHA framework vs. country-specific RMET classifications) and often serve different purposes in policy, planning, and resource mobilization so are used at different points in the year. Therefore, past data collection and cleaning, the two processes tend to be conducted separately to allow additional data collection for HA and to meet the unique use cases for each exercise.

However, if harmonization of data analysis and use were identified as feasible and desirable in Stage 2, MOH officials, team(s) responsible for analysis and use, and technical partners should convene routinely to explore specific opportunities during the first few rounds of implementation of harmonized HRT. If the team responsible for analysis is the same and timelines for analysis are aligned (see Step 2), there is potential for the analyses to inform each other. The complementary datasets collected for different exercises can also produce a larger dataset of budget and expenditure data that may allow for new

analyses and new use cases. Real-time programmatic and financial data can also be leveraged alongside this strategic data for broader policy design. A harmonized dataset of budget and expenditure data also provides important data on programmatic spend that can support future budgeting and planning by governments and development partners.

Key Outcomes

By the end of Stage 4 stakeholders should be aligned on:

- A draft of the harmonized tool for piloting during Stage 5
- A harmonized HRT process documented using standard operating procedures (SOPs) or other guideline that aligns responsibilities for administrative and managerial functions (across data collection, cleaning, analysis, etc.), defines timelines, and designates clear technical support and funding roles to meet these timelines. This should be complemented by a clear institutional mandate and responsible champion or lead within a HRT unit to sustain this harmonized process
- Roadmap for data use and dissemination, including fora for sharing data to encourage uptake and plans for specific analyses or outputs to address needs of different stakeholders

Stage 5: Test, Iterate, and Strengthen the Health Resource Tracking System Over Time (Towards Institutionalization)

Summary

Stage 5 outlines steps to iteratively improve and strengthen harmonized HRT processes through continued feedback, proactive exploration of expanded use cases, clear documentation and governance, and integration with existing information systems.

Key Steps

1. Pilot the tool with a selection of organizations and make refinements prior to rollout. Collect feedback each year to iterate and improve on the HRT process and meet evolving evidence needs.
2. Strengthen institutionalization over time through improving data dissemination and use; establishing clear governance and financing arrangements; and developing institutional capacity.
3. Continuously assess opportunities to strengthen institutionalization of HRT and enhance use cases through digitization, integration, and/or interoperability with routine information systems.

Key Stakeholders	Capacity & Resource Needs	Timeline
• Input from a diverse selection of submitting organizations/users of data while piloting the tool and refining HRT over time • MOH HRT team ownership of the process and iteration • Potential support from technical partners for institutionalization	• Capacity: Understanding of MS Excel or other applications used for HRT; strategic thinking and learning to identify areas for improvement • Resources: May require financial resources if engaging data enumerators or developing digital tools	• Approximately 1-2 months routinely each year to review and integrate feedback, integrate new data elements, and revise training and SOPs

Key Outcomes

By the completion of Stage 5, stakeholders should have aligned on:

- A final harmonized HRT tool that is iterated on and expanded over time to meet evolving needs
- Documentation of feedback from each HRT round for integration into future rounds
- A roadmap for institutionalization
- [Optional] A roadmap for planned digitization and integration/interoperability with existing systems

Key Steps

Stage 5—the final stage—encompasses the iterative process of improving data quality, data integration, and data use over time to meet evolving needs. Step 5.1 focuses on validating and preparing the data collection tool for use in the harmonized HRT process. Step 5.2 describes guidance for institutionalization of HRT over time. Step 5.3 offers some common considerations for improved data quality and data integration being explored across countries, including opportunities for digitization.

Step 5.1: Validate, iterate, and improve process to meet evolving needs

Piloting and validating the harmonized tool

Before rolling out a harmonized tool and process, it is useful to pilot the tool with government departments and development partners that will be providing and using data to ensure the tool is user-friendly and collects complete and accurate data to meet use cases. This feedback is typically gathered through written and verbal feedback during tool training and/or following the pilot data collection process. Piloting the tool can highlight areas where required data is too complex or granular and requires significant assumptions, which may compromise data quality. This may require further iteration or additional training to fill the tool. Information from the pilot can be fed into revisions and further guidance for providers of data.

Box 15: Case Study

Challenges identified during piloting of the harmonized tool in Malawi

In Malawi, through the first round of implementation, the MOH DPPD requested continuous feedback from all stakeholders contributing data. This informed further decisions on which data elements to include and at what level of disaggregation. For instance, the Government of Malawi faced challenges in completing the requested data format for government spending due to rigidities and limitations of its IFMIS. The Chart of Accounts in IFMIS does not break out activities by health care function or disease area, so expenditure had to be inferred from departmental allocations; for example, expenditures from the Department of HIV & AIDS can be classified as HIV/AIDS. This process allowed for agreement on consistent assumptions to make when filling out the tool. However, this need for assumptions may be mitigated in the future with changes to IFMIS.

Gathering ongoing feedback and iterating on the harmonized tool and process

After the initial harmonization process is complete, it is important to continue to iterate and improve on the process over time based on feedback from submitting organizations and evolving needs and use cases. Continuing to explore further use cases and applications for HRT data and processes over time helps increase the demand for data and build momentum for institutionalization.

- **Submitting organizations**: It is useful to request feedback each year at the start and end of each data collection cycle; this may prompt stakeholders to raise questions or challenges with the process and to consider new use cases and data needs to maintain relevance as financial management and reporting systems evolve. Feedback should be requested during the process on the harmonized tool's functions, the clarity of data requested, and assumptions made in reporting data, in order to continually refine a user-friendly tool and process that collects accurate data. Partners should also be encouraged to communicate any new or evolving data needs in their feedback. This input should be clearly documented and incorporated during the planning stage preceding each HRT cycle. Examples of continued iteration and evolving data uses are described in the case study below.
- **Internal feedback**: In addition to gathering and incorporating feedback from those submitting data, where the teams for data collection, cleaning, analysis, and/or use are different across HRT exercises, joint planning and joint dissemination can create spaces for internal discussion and

feedback to refine processes and better plan for subsequent cycles of HRT, as well as explore new use cases.

Learning from other countries

As a growing number of countries implement, expand, and harmonize a range of HRT exercises, there are important lessons to be learned and shared on the process, tools, scope, and uses of HRT from different contexts and from different stakeholders. This can be particularly helpful when countries have similar health systems and health financing arrangements (e.g., national health insurance, decentralized systems, etc.). Zimbabwe and Malawi have long maintained a channel for learning across the two contexts, including learning visits, sharing of tools, and guidance on harmonization processes.

Top Tip: Leverage tools and lessons learned from other countries implementing and harmonizing HRT exercises to optimize processes and continually expand use cases based on context and need.

Step 5.2. Plan for and support institutionalization over time

Institutionalization entails government-led and country-owned routine production and utilization of HRT data, which relies on government financing, governance, and capacity. Regular production of HRT data enables evidence-based policy and priority-setting, financing, and management decisions—reinforcing a cycle of demand for routine production of this data that contributes to further institutionalization. Harmonization supports institutionalization goals by streamlining processes, generating efficiencies, and expanding the production and use of HRT data.

As harmonized HRT processes are set up and iterated upon over time, it is important to continually assess the level of institutionalization and create plans to further institutionalize efforts where needed. The framework in Box 2 from the WHO's Guide for the Institutionalization of Health Accounts in the African Region (5) provides a useful way to think through the enablers of institutionalization for HAs. The forthcoming Health Accounts Institutionalization Maturity Framework also poses four domains to measure a country's level of institutionalization, which can also be applied to harmonized HRT processes and systems to assess and develop plans for institutionalization. ***Note**: These initial domains will be refined and updated over time based on lessons learned across countries*.

It is useful to use these domains to assess the level of institutionalization and develop a **roadmap for advancing institutionalization** that builds on strengths and addresses key constraints. This roadmap should clearly touch on the below areas and chart out roles for different actors—including government departments, academic entities, or technical and development partners (among others) depending on the context, goals, and needs.

1. ***Demand** for HRT data grounded in use cases across planning, budgeting, monitoring and evaluation, and policy development from the MOH, development partners, and other institutions*

As described in Stage 1 and throughout this guide, the foundation for setting up, harmonizing, or strengthening HRT should be the ultimate use cases. HRT tools should be tailored to meet these use cases and remain flexible to meet evolving needs, which will further feed demand for data and strengthen ownership and institutionalization of HRT processes. For example, in Malawi, additional data elements were added to the harmonized tool to capture programmatic classifications for COVID-19. Use of this data for coordination around the COVID-19 response has generated greater demand and buy-in for HRT and willingness from partners to provide more disaggregated data.

2. ***Governance and financing**, including 2.1) a formal mandate for HRT (and the HA in particular) with necessary legal and institutional frameworks and sufficient resources available; 2.2) an organizational structure and coordination mechanisms that embed responsibly and reinforce accountability; and 2.3) a clear financing strategy for all necessary inputs, including staffing, systems, and equipment*

As described in Step 4.2, clarifying responsibilities and roles in conducting and financing HRT is critical. In Zimbabwe, a dedicated health financing/health economics team is being assembled to manage harmonized data collection, analyses, and use to support institutionalization. An internal government champion within the responsible unit has been crucial to institutionalization in both Malawi and Zimbabwe, as this person can take responsibility for HRT outputs, training of new team members, and facilitating engagements with other government departments and partners to encourage data use. However, there is always a risk of turnover, and as such documentation of processes (below) is critical.

3. ***Institutional technical capacity*** *to collect and produce quality data, including 3.1) the HA team technical expertise; 3.2) routine information systems (or tools/surveys where needed) to collect, store, and analyze data; and 3.3) established routine processes for HRT laid out in SOPs*

Where partners are providing technical and financial support for HRT processes, each subsequent round of HRT can help build sustainable capacity within the government team to transition towards full government ownership and institutionalization. For example, in Malawi, CHAI supported 74% of the human resources required for RMET in the first round in 2011-2012, but throughout the years the team has built the DPPD's capacity and systems so that the sixth round of RMET in 2019-2020 only required 7% of human resources from CHAI, despite high staff turnover (average of 70%) between rounds of RMET.

User-friendly tools for data collection that HRT teams are capacitated to update and adapt over time help to sustain quality production of HRT data aligned to evidence needs. As described in Step 4.2, developing SOPs, checklists, supplementary tools, and training materials that codify steps for data collection, cleaning, and analysis further advance institutionalization. In Malawi, these have been compiled into an RM 'toolkit' to document learnings, support onboarding of new team members, and share lessons across country contexts (3). In Zimbabwe, a supplementary HA conversion tool has been developed to streamline the export of data into the HAPT (see Box 15).

4. ***Dissemination and use of data****, which feeds the first domain (demand), including 4.1) communication of results through effective modalities and based on analyses tailored to use cases; 4.2) methods of dissemination to decision-makers and the public; and 4.3) ultimate use of data in policy, planning, and management.*

As described in Step 4.3 and Box 13, a keen focus on data dissemination and use has been a critical enabler of institutionalization in Zimbabwe and Malawi.

Top Tip: Continuously iterate on tools and processes based on feedback from government stakeholders and partners, to maintain alignment with government strategies and priorities and ensure responsiveness to evolving data needs and new use cases to build demand and momentum for institutionalization.

Box 16: Case Study

Iterations to HRT data and processes over time

In Malawi:

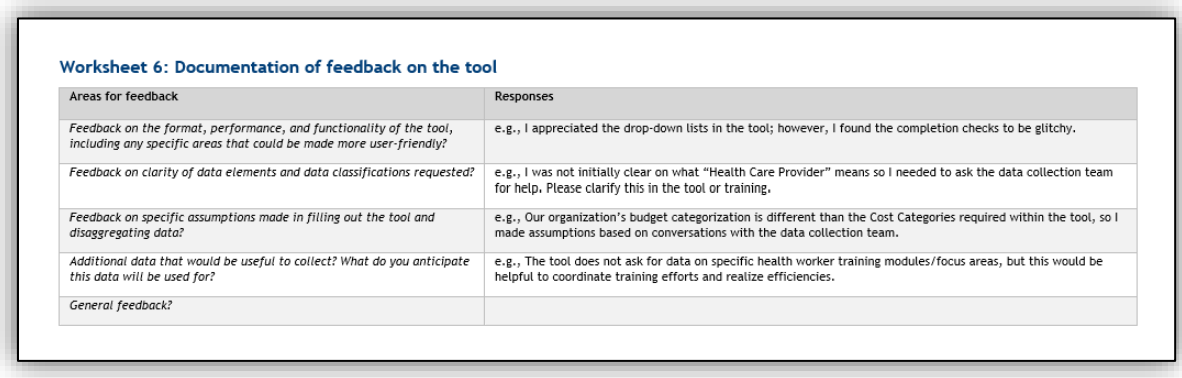
- **NASA**: In 2020, the DPPD worked with the National AIDS Commission to harmonize data collection for NASA with the existing RMET-HA process, to inform the Global AIDS Monitoring Report. This required mapping existing data elements and integrating HIV interventions and target populations to the existing tool to satisfy additional data needs.

- **COVID-19:** In 2020, the harmonized tool was revised to include programmatic classifications for COVID-19. This allowed the DPPD to track funding for the pandemic response against the government's national plan and played a role in coordinating response efforts.[4]

In Zimbabwe:

- **Additional tools**: To further strengthen collection and analysis of HA data in a harmonized manner, in 2020 a supplementary Excel tool was developed to include a conversion of HA data collected in the harmonized tool into a standardized format that can be more easily uploaded to the HAPT for analysis, thus simplifying the production of HA. The draft tool is provided in the Appendix.
- **Human resources**: A dedicated health financing/health economics team is being assembled to manage harmonized data collection, analyses, and use to inform resource allocation and policy decisions.

The worksheet below can be used to request feedback on the functionality and clarity of the tool, availability of data, and assumptions required for completion. It is also important to assess any remaining needs or gaps in producing useful datasets for HRT from these stakeholders' points of view.



Worksheet 6: Documentation of feedback on the tool

Areas for feedback	Responses
Feedback on the format, performance, and functionality of the tool, including any specific areas that could be made more user-friendly?	e.g., I appreciated the drop-down lists in the tool; however, I found the completion checks to be glitchy.
Feedback on clarity of data elements and data classifications requested?	e.g., I was not initially clear on what "Health Care Provider" means so I needed to ask the data collection team for help. Please clarify this in the tool or training.
Feedback on specific assumptions made in filling out the tool and disaggregating data?	e.g., Our organization's budget categorization is different than the Cost Categories required within the tool, so I made assumptions based on conversations with the data collection team.
Additional data that would be useful to collect? What do you anticipate this data will be used for?	e.g., The tool does not ask for data on specific health worker training modules/focus areas, but this would be helpful to coordinate training efforts and realize efficiencies.
General feedback?	

Step 5.3: Assess opportunities for digitization, integration, and interoperability with existing systems to enhance and streamline financial planning and management

To further institutionalize HRT and expand evidence-based financial planning and management, governments in many countries are exploring the potential to digitize components of HRT and leverage routine information systems. This includes digitizing components of HRT processes (e.g., data collection, analysis and visualization) or entire processes, using digital solutions that can increase efficiency and improve data quality and use for decision-making. It also includes leveraging financial data such as data from IFMIS directly in HRT by improving interoperability between systems or integrating systems. Finally, it includes leveraging routine program data from systems such as DHIS2 and analyzing this together with financial data to gather additional insights on efficiency and effectiveness of health spending. While this work is still nascent in many countries and best practices and evidence are forthcoming, some early considerations in leveraging routine information systems and exploring digital solutions are discussed in this section.[5]

[4] RMET has been leveraged in many countries to assess COVID-19 funding against response plans, supported by GFF's tailored COVID-19 RMET tools.

[5] Also see Cooper/Smith's 2022 White Paper on real time resource tracking (6).

Box 17: Key Definitions

Interoperability: Interoperability refers to the ability of different systems to communicate and exchange data with each other in a standardized manner, and this often requires the use of common data standards. Interoperable systems can share data *without requiring knowledge of the other systems*, meaning that they can operate independently while still being able to exchange data seamlessly. E.g., Using HL7/FHIR based standards, EHR systems can exchange patient data seamlessly for continuity of care, even if they are from different vendors or provider networks.

Integration: Integration involves creating connections between different information systems, often *using point-to-point data exchange protocols*. E.g., data exchange between a specific implementation of a finance system (IFMIS) and a hospital management system for reporting health outcome metrics aligned to budget allocations. Unlike interoperability, integration requires connectors to be built/configured in each system and requires deep understanding of the data formats and structures being exchanged.

Digital Solutions: Digital tools or systems that streamline or automate an end-to-end process or certain steps or functions within a process. The scope of digital solutions for HRT varies from small enhancements to existing tools; to point solutions to digitize one or more steps within a process or solve a specific problem area (e.g., for data visualization); to bespoke that digitize the entire HRT process. The specific digital solution should be aligned to a country's specific objectives and local digital ecosystem, as described below.

There are several potential applications of digital tools or solutions for HRT, and opportunities to leverage routine information systems, which include but are not limited to:

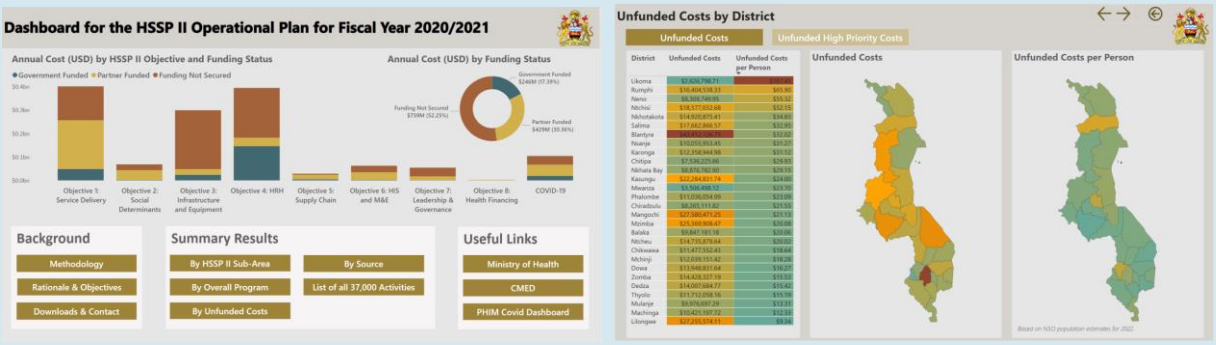
1. *Digitizing aspects of HRT processes, which can range from using automated tools to manage single functions such as data collection or data analysis and visualization; to end-to-end IT platforms to manage the entire process*. While harmonization can create efficiencies, most steps remain manual and digitization can help in some instances to reduce human resource needs for data collection, cleaning, aggregation, and/or analysis by automating these processes. Digitization can further streamline processes, allowing for greater efficiency in deploying limited human resources as well as ensuring improved data quality by embedding multiple data validation and completeness checks within each process. Digital solutions may leverage existing online tools such as PowerBI or Tableau for data visualization or use bespoke solutions tailored to the requirements of the country's HRT system. Data collection can also be digitized and even integrated into existing routine information systems in some cases. For example, an HRT module has been added into DHIS2 in Ethiopia to track donor funding, which aligns financial data to programmatic data to measure performance and efficiencies.
2. *Directly extracting financial data from routine systems when collecting data for HRT exercises, through improved interoperability or alignment of data elements and their classification systems with those in routine data systems (e.g., IFMIS)*. For example, in many countries government expenditure data are directly extracted from IFMIS systems for analysis on domestic spending during the HA or RMET production process. This helps to expedite data collection processes and reduces resource needs. This is described throughout this guide and is an important consideration for harmonizing processes and advancing institutionalization.
3. *Increasing access to raw data and data analysis functionalities for all stakeholders to meet their specific use cases, while maintaining appropriate data control*. Government departments and development partners may want to access HRT data to run analyses to support targeted, evidence-based decision making. Digital tools can allow for granular data control by providing role-based access to a common dataset (e.g., a single source of truth), thus ensuring congruency across analyses without compromising quality or completeness. This can improve demand and use of data, further incentivizing transparency and accountability practices.

4. *Analyzing financial data from HRT exercises or systems (e.g., IFMIS) alongside programmatic data (e.g., from systems like DHIS2) for streamlined and efficient assessments for resource planning and management and for evaluating the impact, equity, and efficiency of health spending*. For this, integration and/or interoperability through common data standards can be used to compare programmatic and financial data (e.g., consistent coding by region or facility). The fusion of data from multiple data systems increases operational insights and can be used by managers to proactively improve how funds are allocated and spent.

Box 18: Case Study

Data Visualization in Malawi and Burkina Faso

Malawi and Burkina Faso utilize online dashboards to visualize RMET data against operational plans to mobilize and align funding towards under-funded priorities. Malawi's interactive PowerBI dashboard visualizes RMET data (including 37,000 activities from 43 data sources) against the Health Sector Strategic Plan Operational Plan to strengthen financial transparency and accountability, and show unfunded priorities at the national, central hospital, and district levels. It is anticipated that donors will be able to use this tool to align fungible budgets towards unfunded priorities as Malawi operationalizes its 'One Plan, One Budget, One Report'[6] vision.



Burkina Faso has a similar dashboard that shows funding commitments by type, year, and intervention domain.

The selection of the right digital option(s) will depend on the objectives for digitization, the existing digital ecosystem, and the financial resources and capacity available to support design, implementation, and iteration of the tool(s). It is helpful for the following enabling factors to be in place prior to digitization:

- *There is a clear, medium- to long-term value proposition of digitization*. Given limited resources and competing priorities for HRT process improvements, digitization efforts should present a clear medium- to long-term solution for addressing areas of inefficiency or challenges with data use. It is also important that efforts are coordinated and sequenced with other digitization reforms and priorities across the health sector, to avoid duplication and incompatibility of systems.

[6] An initiative to guide health sector harmonization and alignment towards targets in national plans and strategies, including One Plan (a collaboratively designed and evidence-based health sector-wide strategic plan); One Budget (resources from both partners and government pooled in 'one budget' for the implementation of this plan); and One Report (a harmonized system for assessment and performance review to enable mutual accountability for resources and shared goals).

- *The processes and data needs are well established and documented*. Digital solutions are best suited for processes that are standardized and tend to be repeated in a very similar way year on year with little change required. If the process, users, and/or data needs from the exercise are likely to change each year, additional technical support and costs may be required for routine maintenance and updates. Prior to introducing any digital solutions, it is critical to ensure that processes, data needs, stakeholders and uses of data are well-established and documented, ideally through a few rounds of HRT.
- *Interoperability and/or integration are considered with existing and/or developing systems*. In order to gain a holistic view on the impact of spending, there may be a need to consider compiling input data from multiple sources (e.g., IFMIS or DHIS2) to provide additional perspectives on government allocations and spending alongside service delivery outcomes. On the other end, there may be a need to share the outputs from HRT into other systems such as the Health Accounts Production Tool to enable downstream analyses. Interoperability and integration are technical design decisions that should be considered and documented before the solution development starts, as developers must define and build the protocols of data exchange into each system to enable the functions.
- *Ultimate ownership of the digital solution is clear*. There should be a clear 'home' for the digital solution within a unit (likely within the government) that is able to support updates, whether on its own or in collaboration with an external software agency—even if the unit is not responsible for initial development.
- *Fixed and recurring costs associated with digitization are identified and estimated*. The total cost of ownership of the digital solution should be accounted over its entire lifecycle. Some of the key cost factors to consider include costs to contract or maintain an internal team for solution development, servers and networking equipment, hosting and licensing costs, and ongoing training and maintenance costs over the life of the solution.

Top Tip: Prior to pursuing digitization, identify whether and what digital solution(s) are appropriate and for which parts of the process, by considering digitization objectives; alignment with the existing digital ecosystem or planned digital health architecture; financial resource requirements; and other medium- to long-term goals.

Ultimately, a successful digital solution should be a key enabler to achieve defined financing planning and management goals, rather than competing for limited domestic resources.

Key Outcomes

By the end of Stage 5 stakeholders should have aligned on:

- A final harmonized HRT tool that is iterated on and expanded over time to meet evolving needs
- Documentation of feedback from each HRT round for integration into future rounds
- Roadmap for institutionalization, highlighting medium-term plans to reach maturity across four primary domains: demand for institutionalized processes, governance and financing; institutional technical capacity; and capacity to disseminate and use data
- [Optional] Roadmap for planned digitization and integration/interoperability with existing systems, considering the broader landscape of routine information systems

Summary and Conclusions

Health resource tracking is an umbrella term for the set of processes whereby governments collect and analyze budget and/or expenditure data in order to inform the full range of sector functions—policymaking, planning, budgeting, resource mobilization, financial management, and service delivery. To address the needs of the various stakeholders involved across these functions (e.g., government, development partners, civil society), multiple HRT methodologies and approaches have evolved overtime, with different areas of focus and sources of data.

With support from partners like GFF and CHAI, MOHs have developed and implemented country-specific RMET processes to inform planning, resource mobilization, and allocation, and to coordinate implementation and monitoring. Governments are at different stages of maturity in institutionalizing processes for routinely tracking resources, and GFF, CHAI, and other partners have provided support to develop, strengthen, and/or harmonize these processes. HA exercises are also routinely implemented in most countries according to the standard international SHA methodology developed by WHO, resulting in data that allow for monitoring and comparison of health spending over time and across countries.

In several contexts, governments and development partners have undertaken efforts to harmonize these exercises, with the aim of reducing process duplication and streamlining the human and financial resources required to collect and aggregate data. RMET and HA—two of the principal HRT exercises deployed—collect some overlapping data from the same sources (government, donors, implementing partners) and are often used by similar stakeholders for complementary use cases.

This Resource Guide was developed with and based on the implementation experience of the Governments of Malawi and Zimbabwe, two countries who have spearheaded the harmonization of RMET and HA in collaboration with GFF, WHO, and CHAI. Both Malawi and Zimbabwe have implemented a harmonized process, timeline, tool, and team for data collection, while maintaining complementary processes to analyze and use the data for distinct use cases and stakeholders. In doing so, they have seen significant efficiencies and enhanced institutionalization within and across both exercises. Harmonization has created streamlined processes that ease the burden of data submission on partners, improve data consistency across exercises, and reduce the human and financial resources required to conduct HRT. Ultimately, this has contributed towards improved evidence-based decision-making, created more demand for data, and expanded use cases. Over time, a harmonized approach to HRT increases accountability for health resource investments and enables a shift toward increased government ownership of health HRT and reduced external assistance.

This Resource Guide outlines a Five-Stage approach for countries interested in planning and implementing a harmonized HRT process. In Stage 1, we outline foundational steps for identifying use cases of HRT and assessing how the existing landscape of HRT exercises meets the evidence needs for these use cases. In Stage 2—often implemented in parallel with Stage 1—we analyze alignment across the scope and requirements for different exercises to assess whether/how harmonization is a feasible and advantageous solution, hone objectives for harmonization, and define the scope of a harmonized process. In Stage 3 and Stage 4, we describe how to define the data elements and adapt the HRT process with a focus on data use. This includes putting the appropriate tools and systems in place to streamline processes, promote quality, and strengthen dissemination and data use. In Stage 5, we provide guidance for implementation, routine process improvement, and institutionalization over time, which should form an iterative process throughout the lifecycle of HRT in following years. Although the steps are presented sequentially, harmonization is dynamic and iterative in practice, and should maintain a continued focus on data needs and use cases.

This Resource Guide and its approach outline key principles and practical considerations for countries looking to implement or improve harmonization for HRT. However, there is no standard or prescribed process for harmonization, and it is important that the Guide's recommendations are adapted to the country's specific context, needs, and existing HRT efforts. First and foremost, it is critical that the harmonization process is owned and championed by government stakeholders, and is aligned to the government's goals for streamlining processes and generating needed evidence for decision-making. While HRT data are useful for both government and development partners, harmonization is most successful and sustainable if HRT systems increasingly empower governments to lead partner

coordination. This may mean starting with a simple, streamlined HRT tool and process that collects a minimum dataset for priority use cases, and iterating on this over time to further leverage routine data sources and expand applications of HRT data based on ongoing feedback. Demonstrating utility across multiple use cases and stakeholders will increase appetite and demand for HRT data, building momentum for institutionalization.

As a growing number of countries improve and expand the implementation and harmonization of HRT exercises, important lessons will continue to emerge on the process, tools, and scope across different context and stakeholder case study examples. We aim for this Resource Guide to serve as a living document that will be updated with new insights from implementation in additional countries.

In the Appendix of this Guide, we have provided full versions of the tools and worksheets shown in this guide and used by the Governments of Malawi and Zimbabwe, as well as detailed case studies and further global resources on HRT.

Appendix

Tools and Templates

A. RMET-HA harmonized data collection tools (Malawi)
B. RMET-HA harmonized data collection tools (Zimbabwe)
C. Two Example RMET-HA processes (Zimbabwe & Malawi examples)
D. Mapping of RMET and HA data elements (Zimbabwe & Malawi examples)
E. Sample crosswalks of RMET Cost Categories and HA Factors of Provision (Zimbabwe & Malawi examples)
F. Worksheets referenced throughout this guide

Additional Guidance

CHAI Resources

- Health Resource Tracking Primer
- Health Resource Tracking Harmonization Case Studies
- Health Sector Resource Mapping in Malawi: Sharing the Collection and Use of Budget Data for Evidence-Based Decision Making
- Malawi Resource Mapping Toolkit

World Bank and GFF Resources

- Resource Mapping and Expenditure Tracking (RMET) in GFF Countries
- GFF Tools and Resources for Tracking COVID-19 Response Financing
- World Bank Repository of Public Expenditure Reviews
- World Bank Public Expenditure Tracking Survey Guidebook
- World Bank Public Expenditure Reviews for Human Development Guidance

WHO, OECD and Eurostat

- Resources on Health Accounts
- Health Accounts Production Tool (SHA 2011)
- Reference Book: System of Health Accounts, 2011 Edition

UNAIDS Resources

- NASA Publications and Tools
- Guide for Linking NASA and NHA

USAID Resources

- Guide: Choosing the most appropriate health expenditure tracking tool

Cooper Smith Resources

- Achieving Enhanced Financial Monitoring of Global Health Programs: Findings From the Country Owned, Real-Time, Resource Tracking (CORRT) Initiative

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