



**AFRICAN COLLABORATIVE
FOR HEALTH FINANCING
SOLUTIONS**

Guide for planning harmonized SHA/NASA resource tracking

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List of Acronyms

AIDS	Acquired Immunodeficiency Syndrome
ART	Antiretroviral Therapy
ARV	Antiretroviral
ASC	AIDS spending category
BEN	Beneficiary
BP	Beneficiary population
DCT	Data consolidation tool
DIS	Disease
FA	Financing Agent
FAP	Funding Agent and Purchaser
FE	Financing entity
FP	Factors of provision
FS	Revenues of health financing schemes
FS.RI	Institutional units providing revenues of health financing schemes
GAM	Global AIDS monitoring
GDP	Gross domestic product
HA	Health Accounts
HAPT	Health Accounts Production Tool
HC	Healthcare function
HCR	Healthcare-related
HF	Financing scheme
HIV	Human Immunodeficiency Virus
HK	Capital formation
HP	Healthcare provider
HTS	HIV testing services
NASA	National AIDS Spending Assessment
NGO	Non-governmental organization
NSP	National HIV strategic plan
OECD	Organization for Economic Cooperation and Development
OOP	Out-of-pocket expenditure
PEPFAR	President's Emergency Plan for AIDS Relief
PF	Production factors
PLHIV	People living with HIV
PS	Provider of services
REV	Revenues of financing sources
RT	Resource tracking
RTT	Resource tracking tool
SCH	Financing scheme
SDM	Service delivery modality
SHA	System of Health Accounts
THAE	Total HIV/AIDS expenditure
THE	Total health expenditure
UNAIDS	Joint United Nations Program on HIV and AIDS
USAID	United States Agency for International Development
USD	United States Dollar
WHO	World Health Organization

Introduction

Purpose of this document

The purpose of this document is to provide insights into the technical aspects of an approach to harmonizing resource tracking (HRT) that combines the System of Health Accounts (SHA) and the National AIDS Spending Assessment (NASA) methodologies. The African Collaborative for Health Financing Solutions (ACS), funded by USAID and coordinated by Results for Development, has provided support to several countries to advance their Universal Health Coverage agendas. In Namibia and Botswana specifically – at these countries’ request - a team of ACS SHA and NASA experts worked with the country resource tracking technical working groups (RT-TWGs) to assist them to harmonize their previously separate SHA and NASA processes.

Namibia and Botswana recently piloted the ACS harmonized SHA/NASA approach, and this guide describes their implementation and experiences that may be useful to resource tracking experts and country teams responsible for resource tracking who are interested in undertaking a joint SHA/NASA exercise to comprehensively map the resource flows for health as a whole and specifically for the HIV response with the level of detail required by both of these methodologies. The key considerations for combining the SHA and NASA resource tracking methodologies, to differing degrees, are detailed in this document, while it also provides specific technical guidance to resource tracking practitioners who are aiming to achieve efficiencies in resource tracking implementation.

A harmonized SHA/NASA resource tracking exercise implies the merging of these two methodologies to simultaneously generate estimates of spending on both health and HIV respectively. If executed appropriately and depending on country context, an HRT exercise is expected to result in efficiencies in the optimal use of resource tracking funds, reduced duplication of surveys and data collection efforts, minimized burden on respondents and survey-fatigue, reduced risk of mismatches of data due to non-reconciled accounts, and improved institutionalization of resource tracking through streamlined processes.

While there are many benefits to be realized from HRT, it does need to be acknowledged that there are limitations to the approach and that certain compromises need to be considered. Some of the disadvantages of, or challenges faced by, harmonized SHA/NASA resource tracking include limitations on the level of detail of data, differences in the treatment of non-health/health-related HIV and capital expenditures between the two methodologies, and the extent of inclusion of non-health HIV service providers in the surveys.

This document attempts to highlight some of the aspects that should be taken into account when a country is considering a harmonized approach. Firstly, Module 1 presents some of the basic concepts behind SHA and NASA resource tracking and focuses on some of the key similarities and differences between these two methodologies – without going into depth on either method (please refer to the SHA and NASA guidelines for full details). Module 2 then explores some of the principles of harmonized resource tracking, describes the HRT approach applied in Namibia and Botswana and highlights some of the requirements and things to avoid in the implementation thereof. The Namibian and Botswana detailed methodologies may be consulted for additional insights and technical guidance in the specific approaches used in their countries¹. Finally, module 3 focuses on the practical technical aspects of harmonizing the SHA and NASA resource tracking methodologies, including the alignment of data

¹ Additional references and guidance on the Namibian and Botswana approaches are included in the following: Jones, C., Guthrie, T. 2020. *The Namibian experience of combining aspects of SHA and NASA for health and HIV resource tracking*. Windhoek, African Collaborative for Health Financing Solutions.

Jones, C., Guthrie, T. March 2020. *Guidance manual for health and HIV resource tracking using a combined SHA and NASA methodology in Namibia*. Windhoek, African Collaborative for Health Financing Solutions, Namibia Ministry of Health and Social Services. April 2020. *Namibia 2017/18 Resource Tracking: Methodological Report*. Windhoek, Namibia.

requirements and classifications, development of data collection tools, management of data and the aligned reporting of combined or separate results. While this document aims to be comprehensive in defining an approach, based on the Namibian and Botswana experiences, to harmonize SHA/NASA resource tracking and the process of its implementation, it should be noted that there are numerous options to applying this approach, which should be customized to suit the specific country context and data requirements. It is therefore not possible to provide an in-depth description of all possible HRT options here.

As a means to share further the experiences of Namibia and Botswana, and to seek the input of other SHA and NASA implementers, ACS held three HRT Think Tank webinars in February 2022, in which practitioners, policy makers, programme and financial managers, and development partners participated and gave feedback regarding the HRT approach and suggestions for taking it forward in other countries. Overwhelmingly, 78% of participants in the final webinar indicated that the HRT approach would be useful to their own countries, and 70% felt it would also be useful to other countries. Their suggestions for taking this important initiative forward are included in the conclusion of this guide.

Module I: What is resource tracking?

1.1 Resource tracking

“Resource tracking” is a broad phrase for the monitoring of resources that were utilised for a particular purpose and can include financial, human, in-kind and other resources. Within the health sector, resource tracking can either track all resources for all health interventions in the country for a specified period of time, such as the System of Health Accounts 2011 (SHA 2011), or it can focus on a particular disease or programme, for example, HIV (such as the National AIDS Spending Assessment (NASA)), nutrition, immunization, or other programmes. Most health resource tracking approaches aim to estimate the total amount of resources used, while also following their flow through the country from the source to their end-use. Resource tracking is a retrospective review of past health or program-specific spending, which is mapped and analysed for decision-makers to use as evidence to inform future planning and resource allocation.

Figure 1: Retrospective resource tracking evidence for policy decisions



Source: Adapted from Namibia resource tracking induction training, 2019, African Collaborative for Health Financing Solutions

The SHA and the NASA methodologies are probably the most common health and HIV resource tracking methodologies used internationally. The SHA methodology (developed by WHO and key international stakeholders, such as the Organization for Economic Cooperation and Development (OECD)), tracks health system resources over a specified period, following the funding flow from its origins to the end user and creates different classifications for resources. At a high level, the SHA data can indicate if the country has prioritised health care, shown by the share spent on health out of the total public budget or as a share of the country’s gross domestic product (GDP). These data are powerful for countries in mobilising additional domestic and external resources for health services. In addition, they can provide insight into the fairness or equity of the health care financing in-country (Wagstaff & van Doorslaer, 2003¹).

The NASA methodology (developed by UNAIDS and enhanced through implementation globally for over a decade and most recently updated in 2020) seeks to ascertain the funding flows used to finance national responses to HIV. NASA tracks financial transactions from their origin to the beneficiaries². NASA tracks both health-related resources for HIV and non-health resources (such as social mitigation, education, labour, justice, and other sectors involved in the multisectoral HIV response), which enables the capturing of all the non-health actors and reflects the multisectoral HIV response. The data generated by the NASA methodology can quantify the volume and adequacy of funds by comparing the

² Joint United Nations Programme on HIV/AIDS (UNAIDS) 2009, National AIDS Spending Assessment (NASA): Classification and Definitions.

expenditures with estimates of the resources needed for the HIV response, and are also useful for programmatic decision-making, prioritization, and resource allocation.

Another valuable function of resource tracking is the identification of actors (funders and implementers) and the mapping of their activities within a country or within a particular field, which thus facilitates the coordination and efficient use of scarce resources amongst all the actors. This can be particularly valuable for the multi-sectoral HIV response, and where a multiplicity of actors can easily lead to fragmentation and duplication. Therefore, resource tracking is critically important to generate the necessary data for monitoring the achievement of national priorities, such as the level of donor harmonisation and alignment in line with the Paris Declaration (OECD, 2005ⁱⁱ).

The degree to which the resource tracking efforts follow the funds to the service delivery level and to the intended beneficiaries is an important distinguishing feature of the different approaches to resource tracking and relates to their overall purpose. The information requirements of decision-makers in terms of the level of detail and disaggregation required must therefore be considered in selecting the resource tracking approach, which serve different purposes. For example, the SHA methodology provides a picture of total health care resources in the country, both nationally and sub-nationally, split by disease areas, their sources, service providers, health care functions, and beneficiaries. The SHA reports are typically aimed at national and sub-national level health policy- and budget-makers. The NASA approach undertakes detailed tracking of all HIV expenditures to the level of location (national and sub-national levels), programme delivery, providers, beneficiaries, and production factors of HIV services. In this way, NASA provides data for national and sub-national level policy- and budget-makers, as well as for programme managers (not only in the health sector) who wish to improve allocative efficiencies and impact, while also guiding resource mobilisation of public, external and private funds at the national, sub-national and international levels. *“The NASA framework clearly calls for the inclusion of activities under the education, social development, welfare sectors, as well as for other activities which are clearly beyond any conceptualization of the health care service delivery system”* (NASA 2009 guidelinesⁱⁱⁱ).

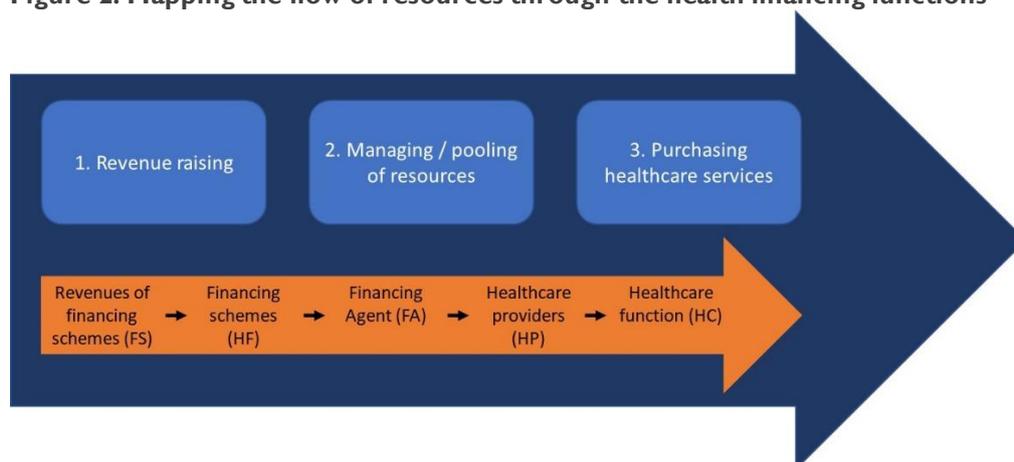
It is important to understand that the different resource tracking initiatives, methods, and tools, result in slightly different outputs. If country stakeholders have a good understanding of the different resource tracking methods and their intended purposes and typical outputs, they are better able to select the approach that would best serve their data requirements, or, if wishing to combine different approaches, to understand what compromises might have to be made and how these might affect the utility of the final outputs for the various stakeholders.

The following sections provide more insight into the framework and principles underlying both the SHA and NASA methodologies. While this document does not aim to present the SHA and NASA methodologies comprehensively, it is important to have a basic understanding of the key principles of each methodology and to understand their important differences as they are critical in informing the choice and level for harmonization. The reader is encouraged to read the SHA 2011^{iv} and NASA guidelines^v to gain an in-depth understanding of each methodology.

1.2 Purpose and principles of resource tracking

The purpose of resource tracking is to describe the health system or HIV response from an expenditure perspective by providing a systemic description of the financial flows related to the consumption of goods and services in the delivery of health services. It estimates the total amount of funding available within a health system or the HIV response, and then tracks the resources through each of the health financing functions from revenue raising through the pooling of resources to the purchasing of healthcare services. The figure below illustrates how the SHA classifications are aligned to the health financing functions as they flow through the health system.

Figure 2: Mapping the flow of resources through the health financing functions



Source: Adapted from Namibia Health accounts induction training, Health Financing and Governance (HFG) project, Abt Associates.

Similar to the example provided above on the typical flow of resources tracked by SHA, the NASA 2020 classifications also allow for the tracking and labelling of the funding flows from the funding entity/source (FE), funding scheme (SCH), source of revenue (REV), through the funding agent and purchaser (FAP), to service providers (PS) and the intervention (AIDS spending category (ASC)), split by the cost components/ production factors (PF) and finally to the beneficiary (BP) level. NASA 2020 also added the vector of service delivery modality (SDM) to attempt to capture the spending (and efficiencies) of differentiated models of service delivery (such as community-based/ led services).

The aim of resource tracking is to generate reliable and timely data that are comparable across countries and over time, so that the data can be used internationally to compare expenditure data of different countries and nationally to analyze healthcare spending in more detail and to understand expenditure trends.

1.3 Boundaries

It is important to set boundaries for resource tracking so that the scope of the exercise is clearly defined and that the data generated through such exercises are consistent across countries and over time. The boundaries presented below define the SHA and NASA resource tracking estimations and articulate which expenditures are included and excluded.

Functional boundary: The functional boundary of the SHA methodology focuses on “health” in that it refers to activities whose primary purpose is disease prevention, health promotion, treatment, rehabilitation, and long-term care. This boundary includes services provided directly to individual persons, and collective health care services covering traditional tasks of public health. Examples of personal health care services include facility-based care (curative, rehabilitative, and preventive treatments involving daytime or overnight visits to health care facilities); ancillary services to health care such as laboratory tests and imaging services; and medical goods dispensed to patients. Examples of collective health care services include health promotion and disease prevention campaigns, as well as government and insurance health administration that target large populations. National standards of accreditation and licensing delineate the boundary of health within SHA: providers and services that are not licensed or accredited – for example, some traditional healers – are not included; nor are services that fall outside of the functional definition of health.

SHA 2011 separately tracks healthcare-related and capital formation spending. Health care-related activities are intended to improve the health status of the population, but their primary purpose lies elsewhere. Health care-related spending is particularly important for the tracking of HIV spending since many HIV interventions do not necessarily have the primary objective of improving health. Examples of

health care-related activities are food, hygiene, and drinking water control, and the social component of long-term care for older persons. For the HIV program, these activities include income-generating activities and social support to orphans and vulnerable children.

The functional boundary of the NASA includes all HIV services, including both health and non-health HIV services since it aims to track expenditures on all HIV interventions in a national multisectoral response. This implies that HIV expenditures will go beyond the health boundary of the SHA parameters to include both HIV expenditures that have the primary purpose of “*disease prevention, health promotion, treatment, rehabilitation, and long-term care*”, and those that don’t. Some of these non-health expenditures might be accounted for separately in the SHA as healthcare-related expenditures, such as OVC care and support or human rights, instead of as health expenditures within the normal SHA boundaries. Therefore, the boundaries of NASA and SHA are different, except for the recurrent health HIV spending, where the boundaries for NASA and HA would be similar.

Time boundary: The resource tracking time boundary specifies that each analysis covers a one-year period³ and includes the value of the goods and services that were consumed during that period. The resource tracking exercise includes expenditure according to accrual accounting, by which expenditures are classified within the year they create economic value rather than when the payment was received.

Capital formation of health care providers covers investment lasting more than a year, such as infrastructure or machinery investment, as well as education and training of health personnel, and research and development in health. Capital formation contrasts with “current health expenditure” which is completely consumed within the annual period of analysis. Contrary to typical accounting practices, capital spending is not depreciated in both SHA and NASA, which instead measure the total value of the assets that providers of health have acquired during the accounting period.

Within SHA 2011, capital expenditures are accounted for separately from recurrent spending and are not mapped against the classifications included in the extended accounting framework. While the SHA approach does not map capital expenditures to the level of detail in the extended accounting framework, NASA does attribute all capital expenditures to the specific HIV intervention/s for which they were purchased. Therefore, the NASA exercise provides greater level of detail in the capital spending, which is reported as part of the total HIV spending.

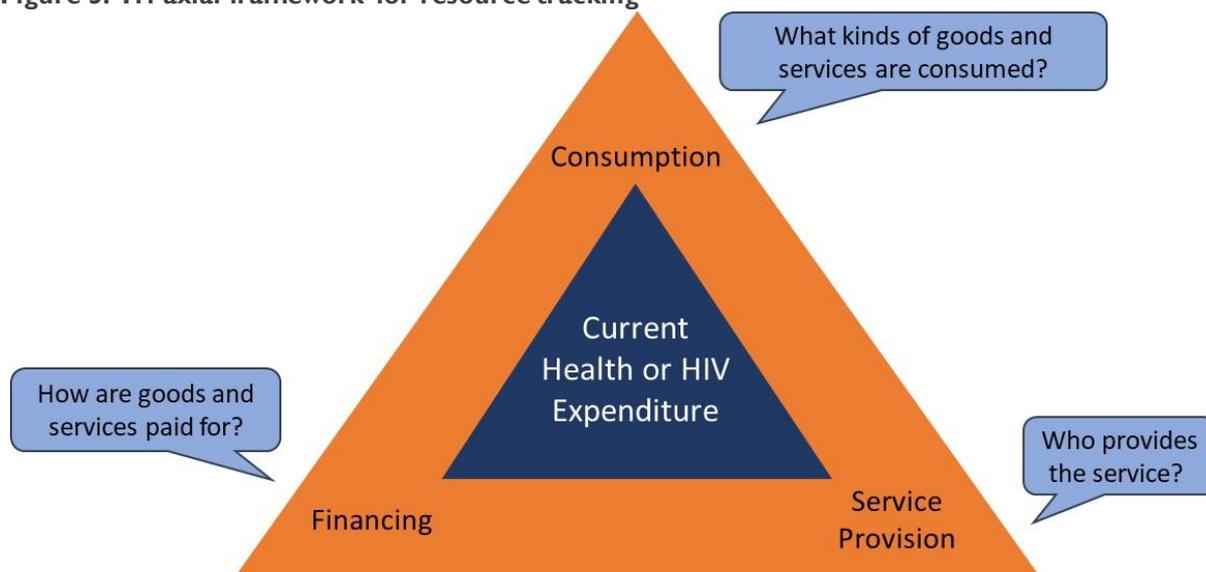
Space boundary: The SHA 2011 boundary for space “focuses on the consumption of health care goods and services of the resident population irrespective of where this takes place” (OECD et al. 2011). This means that goods and services consumed by residents (citizens and non-citizens) are included, whether in or outside the country where the exercise is being undertaken, while healthcare goods and services used by non-residents who are in the country are excluded.

1.4 Classifications

SHA 2011 and NASA are based on the **tri-axial relationship** between **consumption, provision and financing** of healthcare and HIV services, and they provide a standard for classifying expenditures according to these three axes (refer to figure 3 below).

³ Each analysis covers a period of one year, but in instances where resource tracking is not done on an annual basis, a single exercise would usually cover multiple years to ensure a continuous dataset. The datasets and analyses are nonetheless produced for the multiple one-year periods, so that expenditure data can be produced for each individual year.

Figure 3: Tri-axial framework for resource tracking



Source: Adapted from OECD, Eurostat, WHO (2011), *A System of Health Accounts*, OECD Publishing.

Fundamental to understanding the tri-axial framework is the principle that the healthcare or HIV intervention that is consumed also needs to be provided and financed. As such, the following formula is used to describe the key concept of the SHA methodology:

$$\text{Total consumed} = \text{Total provided} = \text{Total financed}$$

These three classifications are used to answer three basic questions, both by the HA and NASA:

- What kinds of goods and services are consumed?
- Which providers deliver these goods and services?
- Which financing scheme pays for these goods and services?

The accounting framework used for SHA 2011 and NASA is organized around the tri-axial framework for recording healthcare expenditures using key classifications for consumption, service provision, and financing as depicted in figure 4 below.

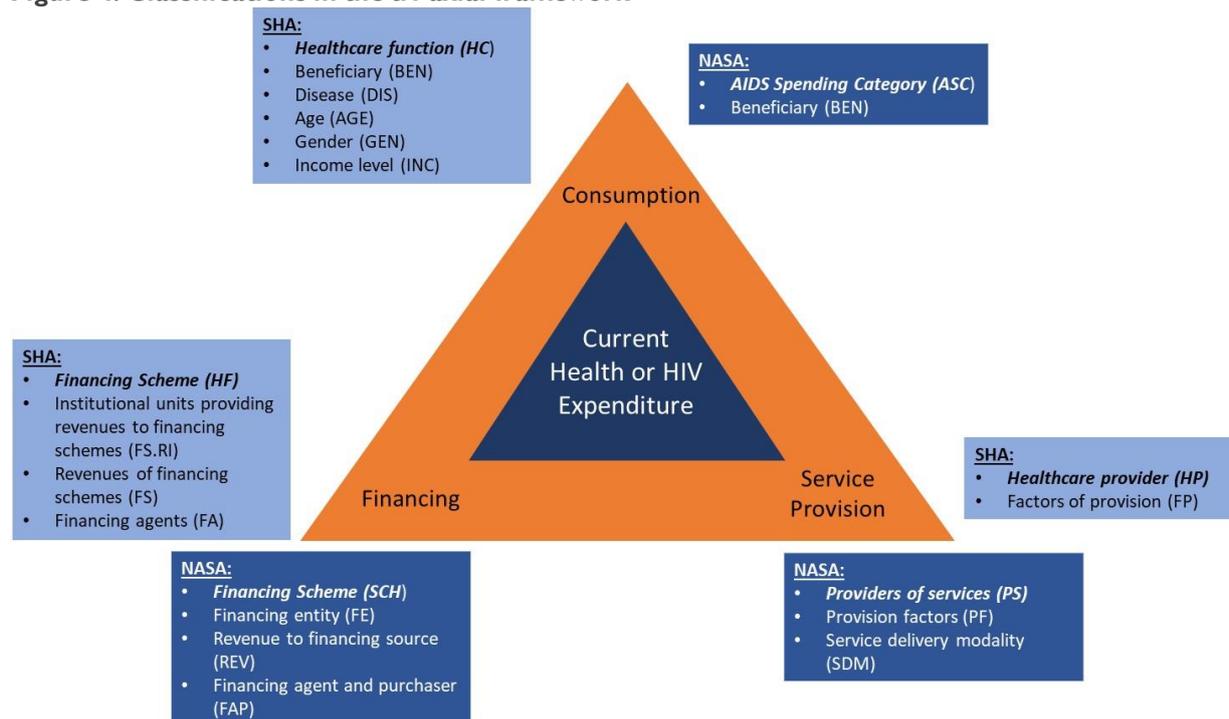
For SHA, the healthcare function classification is used to describe the overall purpose of the service that is being **consumed** (including curative care, rehabilitative care, ancillary services, medical goods, preventive care and governance and administration) with each of these broken down into more detailed types of services (e.g., inpatient curative care). Similarly, the AIDS service category in NASA is used to describe consumption of the specific intervention or HIV service, according to high-level programme areas (prevention, HIV testing, care and treatment, social protection and economic support, social enablers, programme enablers and systems strengthening, development synergies, and HIV-related research). All these programme areas are then broken down into additional levels of detail, to allow for the most disaggregated coding of the expenditure.

Healthcare providers and **providers of services** encompass organizations and actors that deliver healthcare and HIV goods and services as their primary activity, as well as those for which healthcare provision is only one among several activities, categorized according to common internationally applicable characteristics (e.g., hospitals, retailers of medical goods, providers of preventive care, orphanages etc).

The **financing schemes** classifications represent the specific financing arrangements that are present in the country's health financing system to pay for healthcare or HIV goods and services, and include schemes such as social health insurance, voluntary health insurance, household out-of-pocket payments, etc.

Each of these axes can be described in more detail by adding a number of complementary classifications to these three axes. For example, the consumption axis can also be used to describe the consumer of the health services or HIV by adding specific characteristics of the beneficiary, such as the disease, age, HIV status, gender, income level, or priority population grouping. The provider axis can be expanded by looking at the type of inputs used to provide the healthcare or HIV goods and services. The financing axis can be used to also describe the institutional units providing revenues to the financing schemes (e.g., government, corporations, donors, households), the financing schemes and the financing agents, which are the entities responsible for the administration of the financing schemes including the revenue collection and/or purchasing functions.

Figure 4: Classifications in the tri-axial framework



Source: Adapted from OECD, Eurostat, WHO (2011), *A System of Health Accounts*, OECD Publishing.

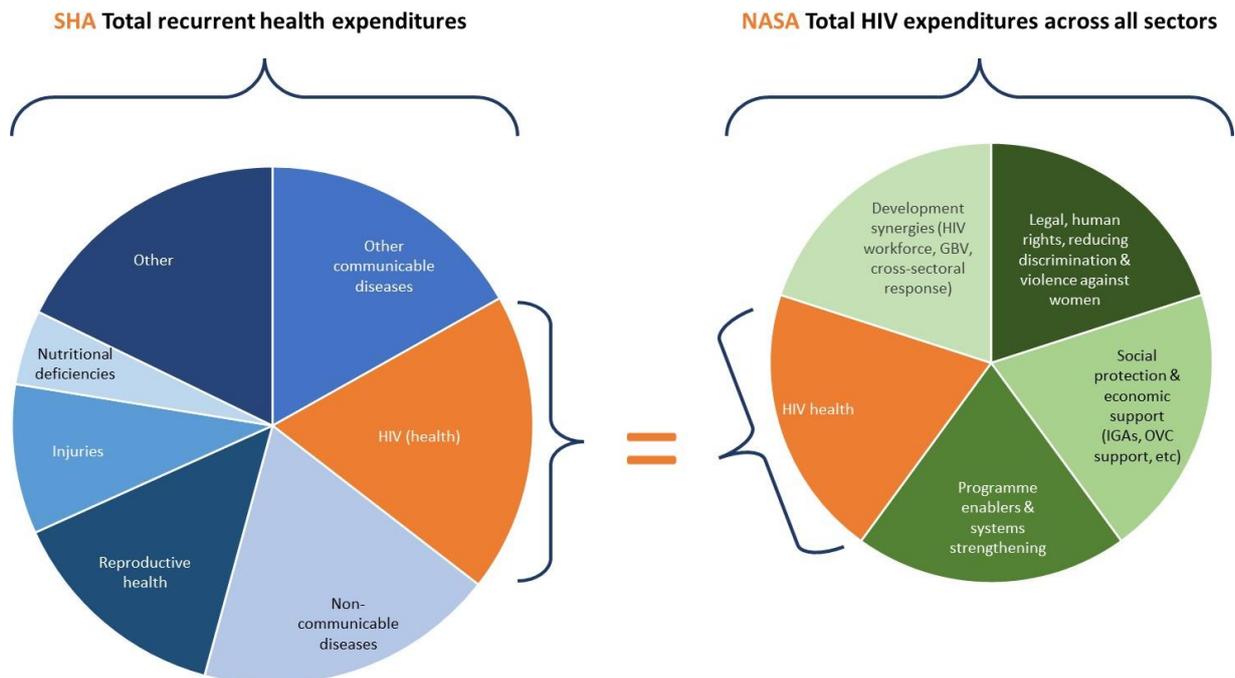
1.5 Differences between SHA and NASA

While both the SHA and NASA methodologies estimate total health and HIV expenditures (respectively) and track these expenditures from financing source to consumption level, they do differ in certain aspects. It is important to understand their similarities and differences to make an informed decision about which methodology to apply or to determine which aspects of the methodologies can be harmonized into a combined resource tracking exercise.

SHA and NASA have different scopes in that the SHA focuses on all spending on health, while the NASA is disease-specific and focuses on HIV spending only, which includes health and non-health spending and may also include spending on integrated efforts for co-morbidities (such as TB prevention for HIV-positive persons) (Figure 5). While the SHA also estimates HIV spending specifically, as it is one of the key diseases that can be tracked separately within the SHA framework, the approach and level of detail of tracking HIV expenditures is slightly different to the NASA's. The key difference is that within the estimate of recurrent expenditures, SHA only includes HIV expenditures with the primary objective being the disease prevention, health promotion, treatment, rehabilitation, and long-term care. Expenditures that form part of the HIV response but do not have health as the primary objective (e.g., OVC care and support, or others) could also be tracked within the SHA framework (if they are comprehensively collected in the SHA data collection process) and are captured as healthcare-related

(HCR) expenditures, which are reported separately from the recurrent health expenditures and usually not mapped against all classifications included in the extended framework. This means that these expenditures are not included in the typical indicators for recurrent HIV spending generated by the SHA and the totals need to be added manually to provide comprehensive estimate of HIV spending. Similarly, the SHA framework reports on capital investments separately under the HK vector and cannot be attributed to specific interventions but can be attributed to the specific disease. The separate treatment of HCR and HK expenditures in the SHA framework combined with the fact that these types of expenses are not mapped against all of the SHA classifications prohibit the generation of data and bi-variate matrices with the level of detail required for typical NASA HIV reporting.

Figure 5: SHA versus NASA boundaries



Source: Joint resource tracking efforts for health and HIV: SHA-NASA – Initial planning considerations and previous country experiences

There is a certain level of alignment between key SHA and NASA classifications of expenditures, with international efforts in recent years having focused on improving this alignment. The recently updated NASA 2020 framework added the vectors of Revenues (REV) and Financing Schemes (SCH), which are very similar to the SHA’s classifications of Revenues of Health Care Financing Schemes (FS) and Health Care Financing Schemes (HF) respectively. The NASA funding entities (FE) and the funding agent and purchaser (FAP) classifications are similar to the SHA institutional units providing revenues to financing schemes (FS.RI) and financing agent (FA) categories. The NASA classifications do however have a greater level of disaggregation in the FE and FAP, with a comprehensive list of countries (bilateral financing entities) and international foundations. Additional categories can be manually added to the SHA list to ensure alignment and comprehensiveness, but this extensive level of detail is typically not applied in SHA.

Table 1: Comparison of SHA and NASA classifications

SHA 2011	NASA 2020
HF – financing schemes	SCH – financing schemes
FS – revenues of financing schemes	REV – revenues of financing schemes
FS.RI – institutional units providing revenues to financing schemes	FE – financing entity
FA – financing agent	FAP – funding agent and purchaser
BEN – beneficiary groups	BP – beneficiary populations
HP – healthcare providers	PS – providers of services
FP – factors of provision	PF – production factors
HC – healthcare function HCR – healthcare-related function	ASC – AIDS spending category
AGE – age category of beneficiaries	Age groups are embedded in NASA's BP classifications
	SDM service delivery model

Legend: Dark green = relatively well-matched classifications; light green = some matching with some adjustments required to ensure full alignment; yellow = not well matched; orange = classification specific to only one methodology

The level and type of detail required by the two methodologies differs more specifically with regard to the labelling of the interventions and the types of service providers. The SHA aims to provide a holistic overview of the health response and its expenditures and therefore has a stronger focus on the medical interventions. While it does allow resource tracking teams to drill down into more detail for certain diseases, such as HIV, there are additional details that are necessitated by the NASA methodology, so as to adequately represent the national HIV response. This is particularly relevant to the non-health HIV interventions, which are not covered as comprehensively in the SHA methodology. Some of the non-health HIV activities can be lumped together under healthcare-related functions (HCR) (refer to Table 2), however, grouping expenditures under the HCR categories is not helpful to understand the full multi-sectoral HIV response and does not allow for the data to be structured in the way that is required for HIV reporting. The HCR data are reported separately in the SHA and not mapped against all of the classifications, which implies that numerous of the bi-variate matrices required for NASA reporting on the full HIV response cannot be generated using the SHA methodology.

The SHA health care function (HC) categories (first-digit level) are as shown in Table 2 below. In contrast to these classifications, the NASA classifications of the AIDS spending categories (ASC) have more extensive categories for the non-healthcare interventions, and different categories for the health interventions. Furthermore, when comparing the more detailed codes of the HC and HCR against the ASC classifications using the greatest level of disaggregation, it becomes clear that the ASC classifications can be broken down to a much greater level of detail. For example, community engagements/mobilisation/strengthening activities to reduce gender-based violence, a range of interventions for key populations and adolescent girls and young women, human rights promotion and protection, income-generating activities, other mitigation efforts and so on, usually fall outside the scope of the SHA HC and HCR classifications. The NASA ASC categories better reflect the national HIV strategic plan (NSP).

Table 2: SHA healthcare function classifications

SHA Healthcare function classifications (1st digit level)	
HC.1	Curative care
HC.2	Rehabilitative care
HC.3	Long-term care (health)
HC.4	Ancillary services
HC.5	Medical goods
HC.6	Preventive care
HC.7	Governance, and health system and financing administration
HC.9	Other health services not elsewhere classified
Memorandum items: reporting items	
HCR.1	Long-term care (social)
HCR.2	Health promotion with multi-sectoral approach
HCR.3	Stigma reduction programme
HCR.4	Non-medically recommended patient transportation

Source: SHA 2011

Similarly, the SHA classification of the healthcare providers (HP) is mostly limited to providers of health services, namely hospitals, long-term care providers, ambulatory service providers, ancillary providers, retailers of medical goods and providers of preventative health care services. Therefore, for the HIV response beyond the health sector, the NASA providers of services (PS) categories are more comprehensive to capture the full range of actors in the HIV field.

NASA could be undertaken on an annual basis, or every couple of years where 2 or 3 years of data are collected at once. The length of time required for implementation is heavily dependent upon the complexity of the HIV response in the country in terms of actors and activities, as well as on the quality of the existing financial information systems and available expenditure reports. It can therefore either be a short process of less than six months, or up to 12 months, especially if separate sub-regional data collection and analyses are required. With repetition, respondents become more familiar with the NASA data requirements and the utility of its outputs and become more willing and able to provide data promptly. However, data analysis, validation, report preparation and its approval can be slowed where capacity (both time and skills) within the public department driving the NASA are limited. On average, the time lag for NASA data to be released is 6 months to 1 year (T-1 after the close of the financial year being assessed). In comparison, the SHA usually takes a longer amount of time due to the huge amount of data to be collected, and the final approvals of the SHA report require many levels of authorization within the MOH. Therefore, the SHA time lag is usually more than one year (sometimes two) after the end of the assessment year (T-2). The country resource tracking team should bear this in mind when deciding whether the analysis and report preparation are done jointly or separately for the HA and NASA data.

Table 3: Summary of SHA/NASA similarities and differences

Differences	Similarities
HA primarily tracks all health spending, while NASA tracks HIV spending only (both health and non-health)	Both exercises track HIV (health) expenditures (though with different levels of detail)
The functional/programmatic classifications of expenditures differ (HC/HCR versus ASC) – greater level of detail, and different categories, for HIV expenditures are included in the NASA classifications	Certain HIV health interventions’ classifications can be easily aligned. Other vectors (as shown in table I) can be more closely aligned
In SHA, HCR and HK expenditures are tracked separately from recurrent expenditures and not mapped to all classifications, while the NASA tracks all expenditures (including capital) to all different classifications	If HCR and HK expenditures are added manually to the recurrent HIV spending of SHA estimates, the total should be equal to the total HIV spending estimate as per the NASA, but only if the SHA data collection process comprehensively targeted all non-health actors and activities
NASA often requires less time to implement and can be completed in a shorter timeframe due to its smaller scope	Both exercises would ideally be performed annually to ensure up-to-date data are consistently available
Although both methodologies aim to finalize the data within 1 year after the end of the year, from a practical perspective, there is often a time lag of two years (T-2) due to the volumes of data while NASA are usually T-1	The SHA and NASA reports usually present the data according to annual time periods. If the assessments are not done annually, then they collect more than one year of data, presented per annum to allow for time trend series and comparisons

Module 2: Harmonization of SHA-NASA resource tracking

2.1 What is harmonization in resource tracking?

Harmonization of resource tracking refers to efforts to synchronize or merge aspects of different resource tracking approaches, by bringing them together into one joint process, instead of conducting separate and likely duplicative processes. A successful harmonized resource tracking process should be able to provide accurate and detailed data required by all stakeholders, disaggregated by the relevant categories (classifications) to allow for detailed planning and decision-making. In terms of HIV, this requires detailed categories that enable the monitoring of spending according to multisectoral national HIV strategic plans (NSPs).

For the harmonization of SHA and NASA, this implies the merging of these two methodologies to simultaneously generate estimates of spending on both health and HIV respectively, which could allow resource tracking teams to realize the following advantages:

- More efficient use of available funding for resource tracking efforts
- Reduced duplication of surveys and data collection efforts
- Minimized burden on respondents and survey-fatigue by avoiding duplicative surveys
- Reduced risk of mismatches of data due to non-reconciled accounts
- Enhanced institutionalization of resource tracking within relevant public entities with streamlined processes.

The extent to which the two resource tracking methodologies are harmonized can vary from country to country and from exercise to exercise. However, for a successful joint HA-NASA exercise, the following should be in place:

1. Explicit agreements on the set of rules, principles, categories and estimation procedures in accounting for the resources being tracked;
2. One coordinated implementation plan to be carried out simultaneously to ensure that preliminary results are reconciled at appropriate levels and categories;
3. A clear data collection strategy for the health (SHA) respondents and the HIV (NASA) respondents that avoids double requests to actors involved in both health and HIV;
4. Ongoing and fully inclusive analysis and interpretation efforts between SHA and NASA analysts to ensure both data requirements are met with consistency between the results (for the health-related recurrent HIV spending);
5. The resource tracking team should have both SHA- and NASA-experienced persons since both methods are complicated in themselves and combining them adds further complexity that needs to be skilfully managed. The full team should be available right from the initial planning phases and throughout the exercise, otherwise one aspect might be left behind (which is particularly important because of the longer length of time the SHA normally takes).

2.2 The process of harmonization

2.2.1 Defining objectives

It is important to understand that harmonization does not necessarily require every aspect, or phase, of resource tracking to be combined, which means that the country resource tracking team needs to define the scope of their joint process, informed by the specific objectives of the resource tracking exercise. Various aspects need to be considered carefully to decide which components should be harmonized, and how. The first step in the planning stage of the harmonized resource tracking exercise is to consult relevant stakeholders to fully understand their data needs, including the level of detail and disaggregation required to allow for effective evidence-based decision-making. These objectives of the harmonized resource tracking exercise will further inform the design and scope of the harmonized approach, and the policy questions to be answered by the results of the exercise. These need to be realistic and guided

by the information generated through the resource tracking exercise, acknowledging that the resource tracking data may be combined with other data outside of the scope of the exercise for additional analyses, such as for some simple efficiency analyses. The specific policy questions should be clearly defined and included in the resource tracking proposal for each year that health and HIV resources are to be tracked. The joint SHA-NASA process should be expected to answer these questions – if not, an alternative approach might be required.

In determining the policy questions, the following should be considered:

- Policy questions identified in previous years of expenditure tracking
- Current or upcoming policy decisions that need to be informed by financial expenditure data
- Where progress towards policy targets and priorities needs to be monitored or reviewed, such as mid-term reviews of national strategic HIV plans.

Therefore, key factors to consider in making decisions on the extent and approach of harmonization include the following:

- Data needs/requirements and their availability
- Availability of funding to support both components
- Urgency of need for data/timeframe for exercise
- Availability of both SHA and NASA technical skills
- Human resources capacity - including data collectors and committed management/supervision personnel time.

2.2.2 Determining the appropriate harmonization approach

The degree of integration of the two resource tracking methodologies should be informed by the data needs and challenges that are unique to the country, and therefore need to be country-specific. The table below lists the country’s needs that may influence the approach taken.

Table 4: Objectives of harmonized resource tracking and options to achieve these

Objective of HRT	Approach options and considerations
Reduce the cost of data collection	Combine the data collection efforts by using consolidated questionnaires to collect health and HIV expenditure data simultaneously (note additional effort will be needed for the NASA HIV non-health actors)
Reduce survey fatigue amongst respondents	Combine the data collection efforts by using consolidated questionnaires to collect health and HIV expenditure data simultaneously
Maximize existing capacity to conduct multiple resource tracking exercises	All steps of resource tracking to be combined; from planning, data collection, mapping, capturing and cleaning to analysis; so as to limit duplication of efforts and maximize human resource utilization – noting that this requires adequately skilled personnel in both SHA and NASA methods
Generate detailed HIV expenditure data to reflect the multisectoral national response	Data collection efforts and tools can be combined with focused efforts on ensuring that the data collection and analysis tools are adapted to allow for HIV data to be disaggregated to the necessary level of detail. Alternatively, the NASA data collection tools can be used for the HIV data which ensures the HIV detail required, and data collectors would concurrently administer the SHA tools for the health-specific data – requiring capability and confidence to administer both tools.

Objective of HRT	Approach options and considerations
Generate timely expenditure data	The larger HA datasets can take longer to clean, analyze, and validate while the NASA analysis, presentation and validation may be quicker (all other factors being equal). The joint data collection and cleaning process could take less time than would separate SHA and NASA, but data analysis may need to be done separately so that finalizing the HA findings does not delay the dissemination of the NASA findings – if they are to be separate reports. Caution should be exercised as separate analyses may lead to discrepancies between HA and NASA HIV totals if changes are made to datasets after the finalization of NASA data. Efforts are therefore needed to finalize the data collection, capturing, cleaning, and application of assumptions jointly to reach agreement on the total health-related HIV expenditure to be maintained in both datasets. The separate analyses and report writing can then be confidently undertaken.
Minimize variations between the estimates of health-related HIV expenditures between the SHA and NASA assessments	All steps of resource tracking need to be combined from planning, data collection, cleaning, mapping, capturing and analysis to ensure consistency in the health-related HIV spending estimates. Production of one report for both the HA and NASA data would ensure one set of figures (no variation between estimates). Given the bulk of the HA data and the deeper dives needed into the disaggregated NASA data, a combined report might become too lengthy resulting in minimal utilization by the intended audiences. Alternatively, the HIV aspects might be limited to one chapter which would not do justice to the detail collected nor address the HIV stakeholder needs for detailed HIV analyses.

Each country will need to identify the extent to which the SHA and NASA methodologies can be combined to ensure that the approach is realistic and practical while meeting the needs of all relevant stakeholders. This is particularly relevant where countries have different organizational arrangements and structures for the management and coordination of the HIV response: where it is subsumed under the MoH or undertaken by a separate structure/entity established for the HIV response. Some initial practical questions for the country resource tracking team to discuss and reach agreement on include:

- **Who leads** the resource tracking exercise and how are efforts coordinated between health and HIV stakeholders?
- **Who is responsible** for each of the various stages of the resource tracking exercise including data collection, capturing, cleaning, and analysis and reporting process (including specifically the detailed HIV data necessary to meeting the detailed data needs of the HIV stakeholders)?
- **Who is funding** the harmonized resource tracking exercise? If partners contribute towards specific components of the exercise, are all areas adequately funded?
- **Where will the health and HIV data be housed?** Which database (Health Accounts Production Tool (HAPT) or NASA Resource Tracking Tool (RTT)) will be used for analysis and who maintains the database/s?
- **Which data collection tools** are to be used for the different datasets of the exercise (health and non-health and for each of the different respondent types)? Are separate SHA and NASA tools used or a combination tool that allows for comprehensive data to be collected (but noting this might be a more complex questionnaire to administer)?
- **How will the data be collected?** Self-administered questionnaires (which suffers from poor response rate) or face-to-face interviews (more time consuming but with improved and more accurate responses)? Or electronic expenditure reports provided by respondents (which

would need to be reconfigured for both HAPT and RTT importation)? Usually, a combination of these is optimal depending on data.

- **How will the data and preliminary findings be validated?** Will these be done separately for SHA and NASA aspects, or jointly? The latter may require the HIV-specific validation to be delayed.
- **Reporting:** Will there be a single report covering both health and HIV details, or two separate reports to allow for reporting of broader health in line with SHA requirements and the NASA details reported as per the HIV NSPs? Again, a joint report may delay the release of the HIV-specific data.
- **Will results be packaged and disseminated** separately for each component, or jointly?
- **Utility:** Will results be useful to inform/influence health financing policy decisions at country level?

2.2.3 Defining the scope

The policy questions, objectives and specific data needs should be used to inform the scope of the exercise and guide the resource tracking process. It is important that the data collection tools, and analyses of data generate the necessary information required to respond to the policy questions and data needs. For example, if one of the health policy questions revolves around spending trends on the various types of non-communicable diseases, it needs to be ensured that all relevant sub-categories of non-communicable diseases are included in all questionnaires and that data analyses are conducted at a level of detail that portrays this information. Another example may be to gain better understanding of health spending by public facility type including a breakdown by the levels of facilities, then these additional levels need to be added into the HA classifications (refer to customisation of the HAPT below), while the questionnaires will also need to be customised accordingly.

When undertaking a harmonized SHA-NASA approach for the detailed HIV spending, it is important to review the SHA-NASA crosswalk of categories, which defines how each of the SHA 2011 classifications and codes correlate to the NASA 2020 classifications and codes, and vice versa, and determine if additions or changes are required. These then feed into the data collection tools (see next section). For example, the SHA beneficiary list should be expanded to incorporate the NASA's detailed beneficiary categories, so as to apply these to the HIV spending.

2.2.4 Managing stakeholder expectations

The data requirements of, and implementation processes for, HA and NASA exercises are quite different, which implies that the expectations of the various health and HIV stakeholders are understandably also very different. Therefore, it is important to effectively manage the expectations of these stakeholders when conducting a harmonized resource tracking exercise.

It is important to clearly communicate what type of information the harmonized resource tracking exercise will generate, the level of detail that will be provided, as well as the timeframes and processes to be followed. During the planning phase of the exercise, the data expectations and requirements need to be clearly understood so that the resource tracking exercise can be designed in way that it responds to these needs. Once the approach and the scope have been decided upon, the stakeholders will need to be updated on the plan for the exercise, including the scope and the data that it will generate.

With most technical experts generally only having an in-depth understanding of either the SHA or the NASA resource tracking methodology, it will be critical to secure their buy-in of the harmonized approach to alleviate any concerns about the quality and reliability of the results. The resource tracking team will need to invest sufficient time to effectively communicate with relevant technical experts to ensure their buy-in to the process and endorsement of the technical soundness of the results.

2.3 Harmonization: Do's and Don'ts

Below are recommendations based on past experiences in conducting harmonized HA-NASA exercises that will contribute to reconciled health and HIV estimates⁴:

- ✓ Carefully conceptualize the harmonized resource tracking process in detail prior to implementation to ensure that it will meet the requirements of the two methodologies and all stakeholders, with a particular focus on the value-addition of conducting a joint process.
- ✓ Agree on the principles, boundaries including reporting period/s and time-lag, cross-walking between the classifications of both frameworks, and key implementation steps, in particular, how to manage discrepancies in the totals of recurrent health-HIV spending, prior to implementing the exercise.
- ✓ Ensure that the resource tracking team has the required technical expertise and capacity including both SHA and NASA experts who understand the detailed requirements of the individual methodologies and are willing to accommodate the requirements of each methodology and make the necessary adjustments to the approaches and tools, as required.
- ✓ Comprehensively crosswalk all classifications to ensure that the 'merged' lists of classifications can accommodate all the required detail. This means the SHA2011 classifications will need to be amended and/or expanded to better accommodate the NASA2020 categories, especially for the additional detail of the service providers (HP and PS), the health care functions/ activities (HC / ASC) and for the beneficiaries (BEN / BP).
- ✓ Make concerted efforts to identify the non-health HIV actors in the country and to collect their expenditure data to ensure that data on HIV spending is comprehensively collected from all relevant actors.
- ✓ For combined data collection, agree on data collection tools to be used for the harmonized resource tracking exercise and ensure that necessary changes are made to accommodate the data requirements of both the HA and NASA. Because NASA requires more disaggregation and different categories, it is easier to first collect the data according to the NASA categories and then crosswalk these back to the SHA categories, rather than collecting data according to SHA coding and then cross-walking these back to the NASA, which will not provide the details required for NASA.
- ✓ For joint data analysis, ensure there is one single fully mapped dataset (mapped to the lowest level of disaggregation in line with detailed data requirements for both methods) that can be imported into both the HAPT and RTT (refer to the tools used in Namibia and Botswana for examples of this). Adapt the HAPT to add variables that can accommodate the NASA ASC codes and add sub-categories within the HAPT 'code-tree' in the FS, FA, and HP variables, to accommodate the additional detail of the NASA FE, FAP and PS. Perform the HIV analyses using the NASA RTT for the HIV analysis, while the HA analysis will be undertaken concurrently in HAPT.
- ✓ The SHA's estimation of the MOH's shared costs for integrated HIV services and out-of-pocket HIV payments should be used for both assessments, and the SHA distribution keys should be based on updated utilisation data and agreed upon by all stakeholders. Any changes made subsequently to the SHA estimations of these expenditures must also be made to the NASA HIV database to ensure reconciliation between the HIV health recurrent spending (which should remain equal).

Many countries have tried and failed to successfully implement a harmonized resource tracking exercise. Some of the key aspects to avoid in a harmonized SHA-NASA process include, but are not limited to, the following⁵:

⁴ 2021. Draft: Joint resource tracking efforts for health and HIV: [SHA-NASA – Initial planning considerations and previous country experiences, UNAIDS. Pending finalization.](#)

⁵ 2021. Draft: Joint resource tracking efforts for health and HIV: [SHA-NASA – Initial planning considerations and previous country experiences, UNAIDS. Pending finalization.](#)

- X Do not simply undertake a SHA with disease splits (previously referred to as sub-accounts) and *assume* that the HIV health and health-related spending classifications can be cross-walked back to the different and more disaggregated NASA categories **after data collection**.
- X Do not assume that SHA experts can understand the NASA principles and classifications and apply them correctly without NASA experts on the team (and *vice versa*).
- X Do not use two different sets of data collection tools/questionnaires/surveys for SHA and NASA, as this generally leads to unreconciled (differing) amounts for the recurrent health-related HIV spending, whether undertaken concurrently or not.
- X Do not rely on the 'usual' SHA list of actors/respondents for adequate representation of HIV expenditures as many non-health HIV expenditures are likely to be omitted.
- X Do not rely exclusively on emailed self-administered questionnaires, which generally tend to have a poor response rate.
- X Do not use the SHA spending categories without making the necessary adjustments or expanding the classifications to incorporate the detail required by NASA. The crosswalk of classifications and the alignment of codes requires very careful consultation prior to commencing a joint SHA-NASA exercise.
- X Do not have two different teams undertake data collection and processing, without joint training, discussion and agreement on the data cleaning, processing, triangulation, transaction recreation and verification.
- X Do not use the HAPT exclusively for all HIV analysis without making any special provision for the treatment of healthcare-related expenditures. The HAPT only maps the healthcare-related expenditures to the classifications of the core accounting framework of SHA (not all the other classifications of the extended accounting framework), which means that it does not allow for all the combinations of bi-variate analyses required for NASA reporting. The healthcare-related coded expenditures will need to be added and analysed 'manually' which is tedious and leads to errors.
- X Do not make changes to the dataset used for either SHA or NASA analyses without making the same changes to the other dataset. Without joint analysis and handling of discrepancies in a similar manner for both SHA and NASA datasets, will result in discrepancies in the two estimations for the recurrent HIV health spending.

Overall, close collaboration between the SHA and NASA teams in a combined resource tracking team that has **strong skills in both SHA and NASA methods** is essential throughout the process, from conceptualisation to presentation and interpretation of the SHA-NASA findings.

Case study on the harmonization approach in Namibia

The Namibian Ministry of Health and Social Services (MOHSS) found that by combining aspects of the SHA and NASA frameworks, it was possible to implement resource tracking in an inclusive, efficient, and routine manner and ensure that the exercise fulfilled the requirements for both general health and HIV expenditure data.

The Namibian resource tracking team realized this harmonized approach by implementing the following steps:

- Performed a comprehensive crosswalk of all SHA 2011 and NASA 2020 classifications and codes to ensure alignment between the two coding approaches for HIV expenditures that all codes under each classification have a corresponding code under the other methodology.
- Using this crosswalk, incorporated all codes and classifications that are specific to the NASA exercise in the Health Accounts Production Tool (HAPT) to ensure that all HIV expenditures can be mapped against these codes.
- Developed one comprehensive customized questionnaire for each data source that comprehensively maps each transaction to each classification and allows for the collection of data in accordance with the requirements set out by both methodologies.
- Incorporated mapping sheets into the questionnaires that automatically map transactions against the SHA 2011 and NASA 2020 classifications and allow for automatic importing into the data analysis tools used by the two methodologies (Health Accounts Production Tool (HAPT) and the NASA-Resource Tracking Tool (RTT)).
- Secured political buy-in into the combined methodology through regular consultations with representatives from the Namibian WHO and UNAIDS offices, providing assurance and seeking confirmation that the data requirements are being met with the combined approach.
- Facilitated a comprehensive training for the Namibian resource tracking TWG that covered both the SHA 2011 and NASA 2020 methodologies, the harmonized data collection tools, and both data analyses tools. Continuous mentoring and capacity building were provided throughout the resource tracking exercise to further institutionalize resource tracking with strengthened leadership by the MoHSS.
- Examined and corrected any variances between the SHA HIV recurrent spending and the NASA HIV health-related recurrent spending – which were minimal due to the careful cross-walking and the use of the exact same data in both analyses.
- Generated a consolidated results report containing the results and estimates of spending on health and the HIV response, with the SHA and NASA specific tables and matrices.

For more information refer to “The Namibian experience of combining aspects of SHA and NASA for health and HIV resource tracking” available at <https://acs.r4d.org/wp-content/uploads/2021/01/Guidance-on-Namibias-approach-to-a-combined-SHA-NASA-RT-FINAL.pdf>

Module 3: Implementation of a harmonized resource tracking exercise

3.1 Alignment of data requirements and classifications

The alignment of data requirements of both the HA and NASA stakeholders and the crosswalk of the SHA and NASA classifications of expenditures form the essential foundation for any harmonized resource tracking exercise. The crosswalk of the classifications to the appropriate level of detail as required by the relevant stakeholders is likely the most important factor to successfully implementing a harmonized resource tracking exercise as this forms the basis of how the SHA and NASA methodologies are ultimately merged in the exercise. Therefore, sufficient time and effort will need to be invested in ensuring proper alignment as it will have major implications on the reliability and accuracy of the harmonized resource tracking results.

The crosswalk of classifications defines how each of the SHA 2011 classifications and codes correlate to the NASA 2020 classifications and codes, and vice versa (refer to Annex 1 for crosswalk used by Namibia and Annex 2 for the crosswalk of Botswana). To develop the crosswalk suitable to the country context and the data requirements of the relevant stakeholders, the resource tracking team should start by reviewing the full lists of classifications and codes available within both the SHA 2011 and the NASA 2020 frameworks separately to agree on which classifications and codes need to be mapped in order to meet the data requirements of the stakeholders and the objectives of the exercise. Once the necessary level of disaggregation has been agreed for both the SHA and NASA classifications and codes, the process of aligning the classifications of the two methodologies can begin. As mentioned in Module 1, some of the classifications can be easily cross-walked as there is a pre-existing alignment between the two methodologies. However, some of the classifications do not align as easily, which means that the team will need to determine what additions and changes are required. The two resource tracking methodologies require different levels of detail in different areas of emphasis. Where one methodology requires more detail than the other methodology, those additional levels of detail need to be inserted in both the mapping of classifications and codes as well as in the questionnaires to ensure that the highest necessary degree of detail is captured for each methodology. Furthermore, complementary classifications need to be added to the SHA classifications, including the NASA AIDS spending categories (ASC) and beneficiary categories to ensure that the NASA classifications are fully catered for. It is important to ensure that the lowest level of disaggregation, as agreed upon, is included in the crosswalk to ensure that the results can be reported with the necessary detail.

Since the SHA framework collects data on all health spending as opposed to only HIV spending, it tends to be broader and have a wider range of expenditures, while the NASA requires the HIV spending to be broken down into more detail than is usual within the SHA framework. Therefore, *for the non-HIV categories*, it often makes sense to start with the SHA framework in the crosswalk as it will have classifications and codes that do not relate to HIV spending. For example, some of the healthcare function classifications will not be applicable to HIV expenditures, but they will still need to be included in the classifications used in the harmonized approach. *For the HIV categories*, it makes sense to start with the more detailed NASA categories for intervention, provider, and beneficiary (ASC, PS and BP), as the standard SHA classifications tend to be more aggregated and generic while they also do not cover non-health HIV expenditures as comprehensively. The SHA classifications that would apply to HIV spending will then need to be expanded to accommodate the level of detail required by NASA.

3.2 Development of data collection tools

The design and development of the data collection tools is critical to ensure that the data collected can be reported against both the SHA and NASA classifications and provide the necessary level of detail to allow for the expenditures of each transaction to be mapped against the classifications from source to its end-use. The level of harmonization of the SHA/NASA resource tracking exercise needs to be reflected in the data collection tools. If it was agreed that data should be collected separately, the team

can revert to using the individual SHA and NASA tools that were originally designed for these exercises. However, if it was agreed that the data should be collected using one combined set of data collection tools and one research team, it will be important to develop such tools to ensure that one comprehensive set of data providing all of the required details can be generated. It should not be assumed that data collected according to the SHA classifications can be adequately cross-walked back to the NASA classifications – experience has shown that this does not produce the HIV data as required by HIV stakeholders^{vi}.

Since the data needs and level of detail required are likely to differ from country to country, these tools will need to be customized according to the specific country context and objectives. Since the SHA exercise has a wider scope covering all health services, it may make sense to use the SHA data collection tools as starting point for the development of the customized tools by adding the additional detail required for the NASA exercise specifically for HIV expenditures. The SHA tools could be used more or less in their original format for non-HIV expenditures, but for HIV expenditures the questionnaires will need to be expanded to ensure that the HIV expenditures broken down in more detail as per NASA classifications.

The questionnaires can be customized further as the information requirements change or as additional information needs arise as a result of specific policy questions. In line with the standard SHA practice, it is advised that the resource tracking team develops separate questionnaires for each type of respondent (including government institutions, donors, NGOs, medical insurance funds, employers, and universities) as the data requirements from each respondent tend to be quite different.

In developing the customized data collection tools, attention needs to be paid towards ensuring consistency in data collected, completeness and accurate mapping of data to ensure that the correct classification codes are applied to each expenditure line in accordance with the crosswalk of classifications. It may be useful to customize the data collection tools to such an extent that the options that the respondents can select for each question are exhaustive and can be cross-walked to both the SHA and NASA classifications (see the Namibian and Botswana tools as examples). Additional “hidden” sheets can then be created in Excel where each transaction captured in the questionnaire is then automatically and concurrently mapped to the SHA and NASA codes in two sheets, with one sheet converting each transaction to the applicable SHA codes and other sheet translating each transaction to the NASA codes. These sheets can be created in such a way that they can be easily imported into the Health Accounts Production Tool (HAPT) and the Resource Tracing Tool (RTT) for NASA for analysis purposes.

Namibia & Botswana SHA/NASA data collection tools

The questionnaires used in Namibia and Botswana included “transaction” sheets that automatically mapped each transaction to the SHA classifications on one sheet and to the NASA classifications on another. Both transaction sheets were linked to the “mapping codes” sheet that included the crosswalk of the SHA and NASA codes. The mapping codes sheet also formed the basis for the drop-down lists for the response options the questionnaire. This approach ensured consistency in the mapping of responses to the SHA and NASA classifications, and consistency in the amounts captured in each dataset. Any corrections to the data were made in the entry sheets, so that the corrections would reflect automatically in both the SHA and NASA transaction sheets. Changes to the mapping codes or classifications were incorporated in the mapping codes sheet to ensure operability of the automatic mapping function to the transaction sheets. These transaction sheets were used to upload the data into the HAPT and RTT for mapping and analysis purposes.

3.3 Data management

As it is the case with any resource tracking exercise, the volumes of data that need to be handled in a harmonized resource tracking exercise are enormous, which means that effective data management is critical in ensuring the reliability, accuracy and completeness of the data generated. This becomes even

more important where the data need to be used to conduct the analysis against both the SHA and NASA parameters while ensuring consistency between the two datasets to generate consistent results.

3.3.1 Data cleaning and consolidation

Data quality reviews should be performed on all questionnaires and secondary datasets once they have been collected and completed. The resource tracking team must ensure that the provided data are complete and accurate, and that all the categories of classifications have been applied to each expenditure/transaction. The accuracy checks often require logic reviews to confirm that the data provided make sense, and that combinations of classifications are likely (e.g. does the beneficiary logically match the intervention). Any missing or incorrect data will need to be followed up with the respondents/organizations to provide or correct the data. Finally, the team will need to confirm that the data are accurately and consistently converted into the applicable SHA and NASA codes, in accordance with the crosswalk of classifications.

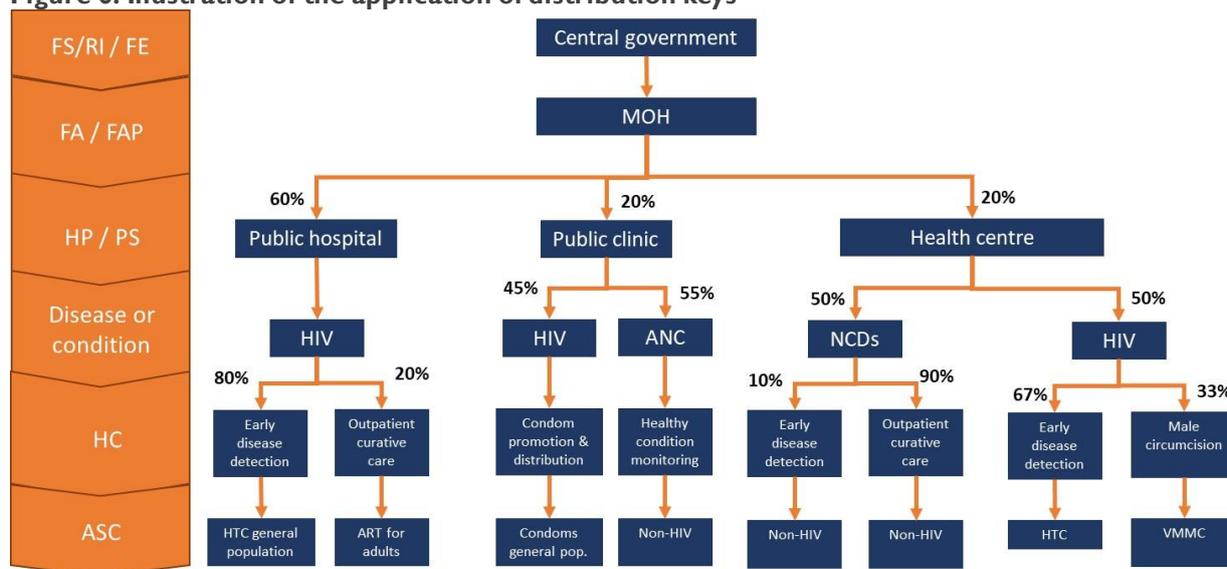
3.3.2 Non-standardized datasets

In moving towards the institutionalization of resource tracking, it is important to ensure that, to the greatest extent possible, existing data sets are optimally 'mined' to minimize the collection efforts of the resource tracking exercise by reviewing the information needs that can be covered through existing reports or other data collected through routine reporting mechanisms. Reviews of existing data sources should be done on a regular basis while proactive efforts to implement routine data reporting should also be pursued for the institutionalization of resource tracking.

However, secondary data sources will generally not be structured in the same way as would be data in the primary data collection tools and therefore there is need to convert these data into suitable formats for importation into the analysis tools. Working with non-standardized datasets requires the resource tracking team to familiarize themselves with the data, the business of the respondents and how they reported their transactions to allow the team to make informed decisions about how to map the transactions provided in the dataset. Assumptions may have to be made to ensure that each transaction can be appropriately recreated and that the data reflect the financial flows that took place.

It is important to ensure that non-standardized data are also mapped in the form of individual transactions against all the SHA and NASA classifications. In some instances, distribution keys will need to be applied to the data to ensure that expenditures are broken down to appropriately represent the flow of the transactions. This requires assumptions to be made on how expenditures should be split, which should be informed by discussions and consultations with representatives of the respondent organizations. These distribution keys are usually applied in the HAPT, using a stepwise approach to work through the transaction. The example below illustrates how assumptions are applied at multiple levels, and these are set up in the HAPT to allow for the automated split of large datasets, such as the expenditure of the Ministry of Health.

Figure 6: Illustration of the application of distribution keys



The resource tracking team must check that the HAPT distribution keys have been applied in a logical manner, especially for the HIV spending – since NASA does not usually apply such assumptions but rather uses exact and actual expenditures reported on specific HIV interventions. For example, all (100%) of the spending on antiretroviral drugs (ARVs) provided by the central medical stores must be labelled as HIV in the disease vector, then 100% as antiretroviral therapy (ART) in the ASC, 100% as clinics in the service provider vector, and 100% ARVs in the production factor (PF). ARV spending should **not** be subject to any HAPT default distribution keys that usually split all medicines between hospitals, health centers, clinics (SHA HP codes), then between in-patient or out-patient curative care (SHA HC codes), and then between diseases (SHA DIS codes). Similarly, this applies for other direct HIV spending such as HIV test kits, VMMC, and so on.

3.3.3 Importing, mapping and analysis

Since the mapping of data for the combined SHA and NASA methodologies requires detailed analyses to be conducted on both the overall health and the specific HIV data, the analysis tools of both methodologies (HAPT and RTT) should be used to assist with the analyses. Prior to data importation to the HAPT & RTT, it is important to ensure a single complete data set to enable consistency in the HIV Health in the NASA and SHA results. Where the resource tracking team uses one set of data collection tools for both the SHA and NASA data, it is **strongly advised** that any revisions to the data are made prior to the data being uploaded into the HAPT and RTT. This is especially important for data where distribution keys need to be applied to determine the split of expenditures across different SHA classifications – so as to ensure their correct and final application in both the SHA and NASA databases (the latter only where distribution keys had to be applied to HIV spending, which should be minimized for NASA purposes).

Any obvious errors or omissions should be addressed first in the questionnaires, and then the final correct versions to be uploaded into both the HAPT and RTT. This is to ensure the same data are in both databases. If any additional corrections are made in either database to the HIV data, the resource tracking team must ensure the same changes are made in the other database – to eliminate any variances/discrepancies between the SHA HIV and NASA HIV (health) outputs.

The concurrent use of two analysis tools requires close coordination of the data management process to ensure consistency between the two data sets. Therefore, it is vital that any changes to the primary data are fully reflected in the questionnaires, which are then imported into the HAPT and RTT and that no further changes to the data are made in the tools themselves, unless they are then also incorporated similarly in both tools. Furthermore, importing of secondary data (for SHA purposes), such as for the

application of distribution keys, needs to be managed sequentially to ensure that the final data set captured in one tool is the same as is used in the other. Since the HAPT is used for the overall health expenditures, which includes estimations of the share of the ministry of health's operational costs attributable to HIV, the data should be captured in the HAPT first to estimate this portion of HIV spending, plus all the direct HIV expenditures (ARVs, VMMC, HIV test kits and reagents, etc) to provide the Ministry of Health's total HIV expenditure and then this sub-set is imported into the RTT (with all the necessary disaggregated NASA vectors and classifications and not in the aggregated SHA classifications). However, for NASA, direct HIV spending should be collected through primary data collection, as far as possible, and these data be first captured in the NASA transaction sheet (or NASA DCT tool) and imported to RTT, and then cross-walked to the more aggregated SHA codes for the HAPT import. Any further changes to the RTT data should also be reflected in the HAPT. The usual tables, figures and matrices used in both SHA and NASA should also be generated in the HRT process, and interpretation of these analytics be presented in the narrative of the report/s. The HAPT and RTT automatically generate flow charts, matrices and tables depicting the flow of resources through the health and HIV sectors, all of which can be exported in various formats. These tools should be used to generate the relevant statistical tables and matrices to present the data in a way that is useful and responsive to the stakeholders' data needs as identified at the onset of the exercise, and additional analysis is undertaken in Excel.

3.4 Reporting, packaging and dissemination of results

Depending on the stakeholders' decision during the planning phase of the exercise, the resource tracking team can either generate one combined report presenting the results of the HRT exercise or produce two separate reports meeting the traditional SHA and NASA reporting requirements. Additional analyses may need to be performed and policy briefs drafted in order to present the data and information required by stakeholders for decision-making purposes in a comprehensive, understandable and helpful manner.

Every effort should be made by the resource tracking team to ensure the HIV health spending reported in the NASA report is the same as the HIV spending reported in the SHA analysis/report (since the latter only presents the health HIV spending). The SHA report might also include other 'healthcare related' HIV expenditures – but this may not be necessary since the NASA will report all the non-health HIV expenditure in detail. The total HIV spending reported in the NASA should, therefore, be greater than that in the SHA, since it contains non-health and capital HIV spending, as well as HIV health recurrent spending. These differences should be clearly reconciled and explained to ensure that there is no confusion on the accuracy and validity of the data presented in both the SHA and NASA reports.

If separate reports were generated for SHA and NASA, the resource tracking team can decide whether a joint dissemination process is required or separate for each report. Additional briefs and outputs should package the data according to the needs of the usual SHA and NASA audiences.

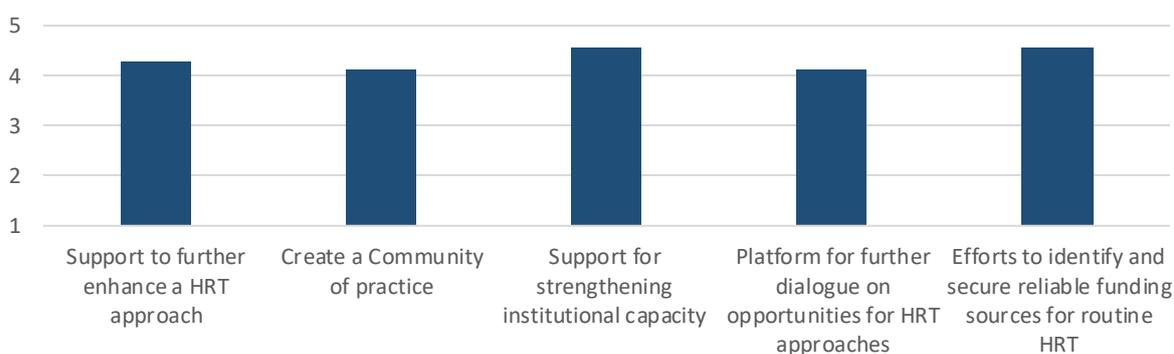
Conclusion and Next Steps

The experiences of Namibia and Botswana demonstrate that it is possible to successfully harmonize the SHA 2011 and NASA 2021 methodologies and achieve efficiencies that can lead to more routine resource tracking exercises. Global efforts to refine the tools and approach through continued cooperation between the WHO and UNAIDS should be further pursued to ensure that this approach of harmonizing resource tracking methodologies can be further improved and adopted internationally, particularly in resource-constrained settings. This harmonized resource tracking approach is believed to be a critical step towards the institutionalization of global resource tracking efforts and will result in improved routine data for the benefit of health and HIV stakeholders, planners, and implementers.

As an effort to lay a solid foundation for the HRT approach's further use elsewhere, ACS convened experts in the SHA and NASA methodologies through hosting three "Think Tank" webinars in January and February 2022, where the Namibian and Botswana experiences were shared, and the feedback of SHA and NASA practitioners sought regarding the application, enhancement and adoption of the ACS HRT approach in other countries. Overwhelmingly, 78% of participants in the final webinar indicated that the HRT approach would be useful to their own countries, and 70% felt it would also be useful to other countries.

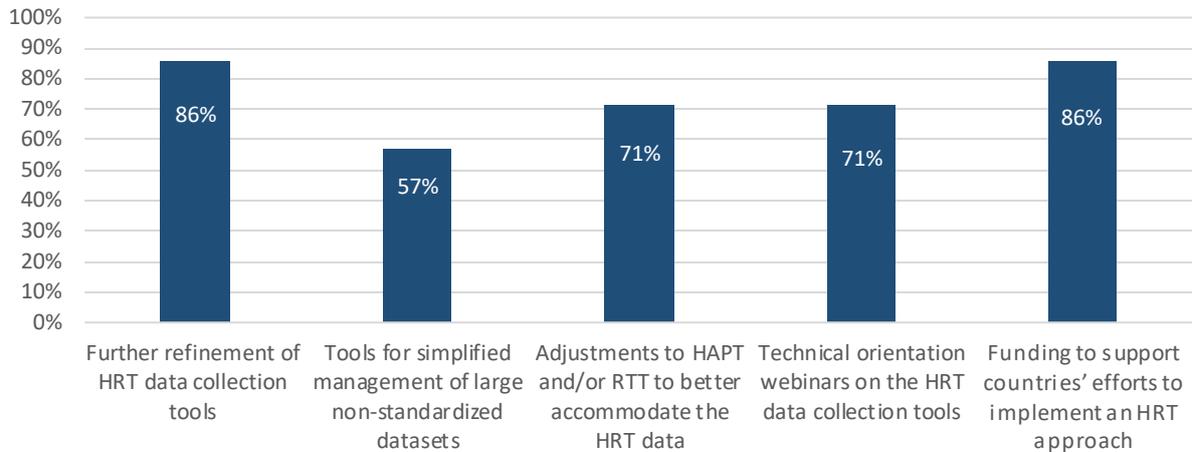
In terms of the way forward, participants were requested in a post-webinar survey to indicate what kind of support would assist them in advancing the HRT approach. Support for strengthening their institutional capacities for undertaking HRT approaches, including obtaining political buy-in, and support to efforts to identify and secure reliable funding sources for routine HRT were rated as the interventions that would be most helpful. Support to further enhance the HRT approach through further refinement of tools was also rated as very helpful, followed closely by the creation of a community of practice/regional network of coaches to enhance the capacity across the region and the establishment of a platform for further dialogue on opportunities for HRT approaches.

How helpful would these interventions be to advance HRT?
(On a scale of 1 to 5 with 1 = not helpful and 5 = critically helpful)



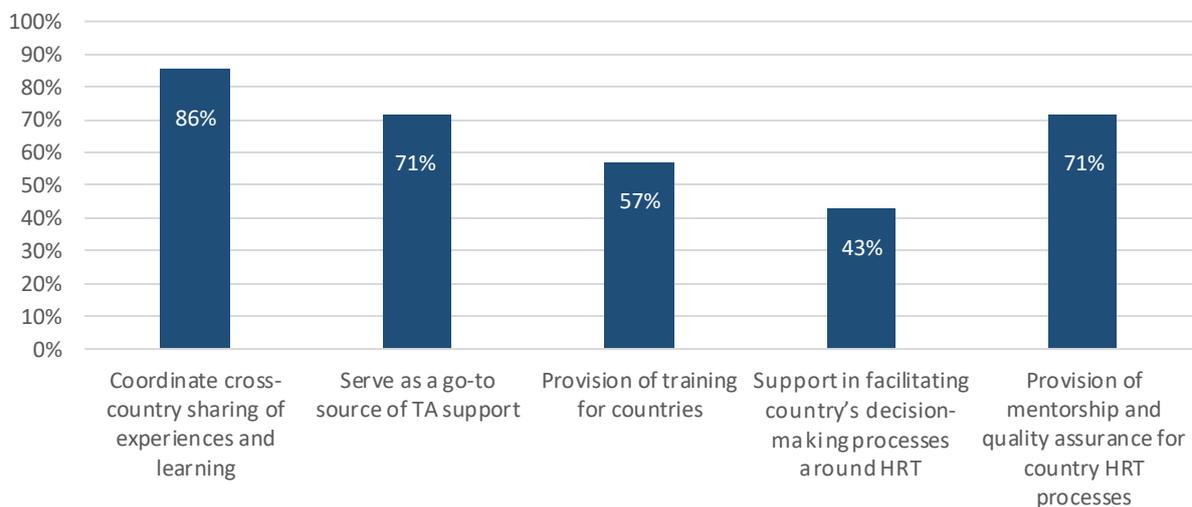
Responses to more in-depth questions on the type of support required specifically for the further enhancement of the HRT approach indicated that the further refinement of the HRT data collection tools and funding to support the countries' efforts to implement an HRT approach would be critical with 86% of respondents indicating that this support would be required. Further, 71% of respondents indicated that they would benefit from adjustments being made to the HAPT and/or RTT to better accommodate the HRT data and technical orientation webinars on the HRT data collection tools and their application. Finally, 57% of respondents indicated that additional tools should be developed to allow for simplified management of large non-standardized datasets and their conversion to SHA/NASA classifications.

What specific support would be required to further enhance the HRT approach to make it useful for other countries?



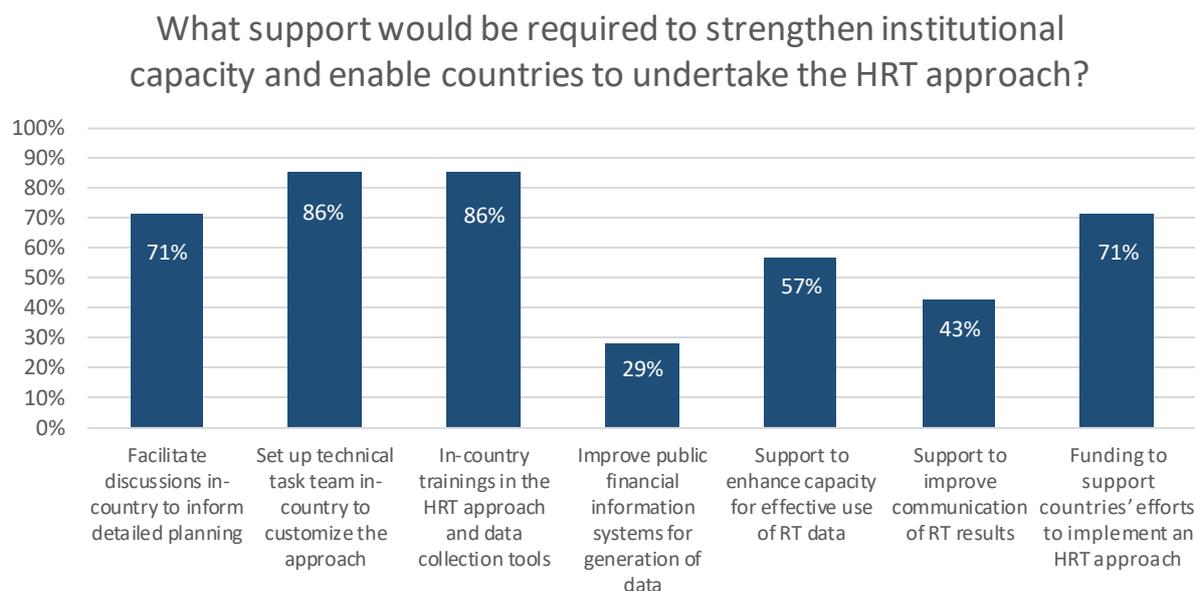
In terms of establishing a community of practice or a regional network of coaches to enhance capacity across the region, 85% of the respondents of the post-webinar survey indicated that the role of this body should be to specifically focus on coordinating cross-country sharing of experiences and learnings. The community of practice or regional network should also serve as a go-to source for technical assistance support and provide mentorship and quality assurance for country HRT processes, as prioritised by 71% of respondents. The body should also provide training for countries (as indicated by 57% of respondents) and support in facilitating country decision-making processes around HRT (43% of respondents).

What role would a community of practice / regional network of coaches ideally play?



Support for institutional capacity strengthening was rated highly in terms of being helpful to countries' efforts to advance HRT. The specific support prioritized by 86% of respondents includes setting up a technical task team of SHA and NASA experts in-country to enhance and customize the technical aspects of the approach, and facilitating in-country trainings on the HRT approach and the data collection tools. Support to facilitate discussions with relevant in-country stakeholders on contextualized needs and HRT options to inform detailed planning and securing funding to support countries' efforts to implement an HRT approach were also identified as important interventions in this area of support by 71% of the respondents. Only 57% of respondents indicated that support would be required on

enhancing countries' capacities for effective use of resource tracking data, while only 43% indicated that support to improve the communication of resource tracking results would be required.



Based on the feedback from the webinar series, the following could be considered as the possible next steps for the ACS HRT approach in chronological order based on the priorities of the respondents.

1. Provide support to further enhance the HRT approach, including:
 - Further refine data collection tools for to allow for more general applicability and use in other countries
 - Adjust the HAPT and/or RTT (SHA and NASA software respectively) to better accommodate the HRT data
 - Facilitate deeper technical orientation webinars on the HRT data collection tools and their application
 - Develop additional tools to allow for simplified management of large non-standardized datasets and their conversion to SHA/NASA classifications
2. Establish a platform for further dialogue on HRT opportunities
3. Identify and secure reliable funding for routine HRT implementation
4. Create a regional HRT network to:
 - Coordinate and facilitate cross-country sharing of experiences and lessons
 - Serve as regional pool of technical experts for technical assistance
 - Provide mentorship and quality assurance for country HRT processes
5. Support institutional capacity strengthening:
 - Provide support to establish in-country technical task teams of SHA and NASA experts to enhance and customize the technical aspects of the approach
 - Facilitate in-country trainings on the HRT approach and data collection tools
 - Facilitate in-country discussions regarding contextualized needs and HRT options to inform detailed planning

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