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GUIDELINES FOR CONDUCTING A NATIONAL HIV SPENDING ASSESSMENT (NASA)

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Contents

Chapter 1: Introduction and Purpose

Objectives of this chapter

This chapter provides foundational knowledge on the purpose of a National AIDS Spending Assessment (NASA), its objectives, principles and boundaries, setting the stage for a detailed understanding of how NASA supports evidence-based decision-making and resource optimization in the HIV response.

1.1. Overview

The National AIDS Spending Assessment (NASA) is a comprehensive, systematic approach to tracking HIV expenditures and analysing financial resources dedicated to the HIV response within a country (or within a region or specific subnational area), or as a stand-alone deeper dive into the community-led response (CLR). NASA is designed to capture the flow of funds from sources to beneficiaries by reconstructing expenditures on HIV-related programmes and services, both within the health sector and in other related sectors to reflect the multisectoral HIV response. It utilizes a standardized methodology that classifies expenditures across the three dimensions of financing, provision and consumption. This includes mapping resources from financing entities, such as governments, international donors, private entities and households, through financing schemes, purchasing agents and service providers, to the services provided and their beneficiaries. These detailed expenditure data are critical to sustainability planning by providing an updated picture of the financial landscape which helps countries identify future trends and potential funding gaps, to inform their resource mobilization options and measure their progress towards sustainability of their HIV responses.

The NASA framework has been developed by UNAIDS in collaboration with partners and country stakeholders, evolving over more than two decades to provide a globally accepted, standardized and comparable approach to tracking the resources invested in the HIV response. NASA's classification system allows for the detailed matching of the spending against the priorities outlined in countries' national HIV strategic plans (NSPs) and the Global HIV Strategy. Since the late 2000s, over 80 countries have undertaken at least one NASA, with many countries undertaking assessments routinely, mostly in the low and middle-income countries (LMICs).

The NASA framework is designed to illustrate the multisectoral nature of the HIV response, at a granular level, including but going beyond the health sector, to the education, social development, justice and welfare sectors, as well as for other activities leading to the strengthening of health and community systems. It is a unique resource tracking method in the degree of detail it provides in the type of HIV interventions, as well as in the type of beneficiaries of the HIV response. No other resource tracking approach provides these two aspects in such detail, which can answer specific policy questions (refer to chapter 9). Furthermore, the NASA framework emphasizes transparency, enabling countries to assess how well HIV resources align with strategic goals and identify gaps and inefficiencies in spending to inform evidence-based policy and funding decisions. Technical efficiency insights can be gained when the NASA expenditure per intervention is compared with the outputs / outcomes of the interventions, and these units of expenditure split by cost items (production factors) can demonstrate areas of in-/efficiencies, economies of scale, as well as equity in spending across geographic area. NASA data can also contribute to global reporting initiatives (such as the Global AIDS Monitor, GAM), inform sustainable financing strategies and enhance accountability of all partners in their HIV response efforts. Also contributing to this aspect is the ability of the NASA process to highlight facets of the financial information system which could be enhanced to better track disease-specific spending, which is critical for informed sustainability planning.

1.2. NASA objectives and policy questions it seeks to answer

The implementation of NASA in a country aims to provide a detailed and systematic analysis of HIV spending, covering all relevant sectors and stakeholders. The data should answer specific policy questions and meet stakeholders' needs for evidence-based allocative decisions. This NASA analysis will help in identifying key areas of spending, understanding the distribution of resources across different programmatic areas, and assessing the efficiency and effectiveness of resource utilization. By also including shared health system expenditures, NASA contributes to the integration of HIV services and sustainability within national health agendas. When linked to other indicators, such as disease prevalence, outputs and outcomes, the expenditure data can explore aspects of efficiency and value for money of investments.

Specifically, NASA aims to:

- *Map financial flows.* Provide a comprehensive mapping of the financial flows and architecture related to HIV, including funds from government, international donors, non-governmental organizations (NGOs), and the private sector, while also identifying expenditures that contribute to broader health system functions (such as laboratory and procurement system strengthening).
- *Inform policy and planning.* Generate data that will inform policy-makers and planners on the current financial landscape, enabling them to make evidence-based decisions regarding resource allocation for HIV specific and shared health system expenditures.
- *Identify gaps and opportunities.* Highlight gaps in funding, inefficiencies, or duplication in resource use, and opportunities for reallocating or increasing investments in critical areas of the HIV response.
- *Support sustainability*. Provide insights that will be critical for developing strategies to ensure the sustainability of the HIV response, particularly in the context of transitioning from external donor funding to domestic financing, while emphasizing synergies with broader health system funding.
- *Measure allocative and technical efficiencies, as well as adequacy and absorption of available funding.* Provide insights into the optimal use of available resources by comparison of expenditures with the intended national strategic plan's priorities and costs, with HIV budgets and allocations, and with the outputs of spending in units of expenditure.
- *Enhance accountability*. Strengthen transparency and accountability by providing stakeholders with a clear and accurate picture of how resources are being utilized. Facilitate the routine reporting of HIV expenditure, both nationally and globally.
- *Strengthen public financial information systems*. Identify areas of weakness in the public financial information system and make recommendations for enhancing labelling/tagging of expenditures, enable automated extraction of HIV expenditures and facilitate routine HIV expenditure reviews.
- *Institutionalize HIV expenditure tracking*. Make recommendations for systems to ensure the institutionalization of HIV expenditure tracking, linked to performance indicators, while integrating this tracking into the broader financial systems and monitoring and evaluation frameworks.

The findings from the NASA will be instrumental in shaping the future direction of the HIV response in any given country. They will also support the broader goals of achieving universal access to HIV prevention, treatment, care and support services, and ultimately, in ending the AIDS epidemic as a public health threat by 2030.

Despite the many advantages of undertaking a NASA, as outlined above, there are other resource tracking options available to the country, the choice of which depends on the policy questions to be answered, the financial data to be collected as well as their availability, the complexity/scale of the HIV response and range of actors, the degree of decentralization and if subnational data collection is required. Additionally, if a full NASA is done every two to three years, there is the option to conduct an 'interim' NASA-basic review that would have a narrower scope and answer fewer policy questions but would be a feasible option in the years between the complete NASAs. These guidelines refer specifically to understanding, planning and implementing a full NASA, but the UNAIDS Resource Tracking Toolkit

refers to this as the 'NASA-basic process. Refer to Appendix 4 for an overview of the different types of resource tracking supported by UNAIDS and their characteristics, as well as to the final chapter discussing harmonization of resource tracking approaches.

1.3. Time period, scope and boundaries of the NASA assessment

The frequency of conducting NASA could be annually or periodically, preferably driven by country needs. Ideally, NASA could be carried out every two or three years, collecting two or three years of data for each assessment. The frequency of the assessment varies from country to country, depending largely on the accessibility and availability of data and funding to carry out the necessary activities. Countries which continuously monitor HIV financing and expenditures can produce time series analyses, explore patterns and trends, make projections and enhance policies and strategies to improve the response.

If a full NASA is undertaken periodically (every two or three years), an 'interim' NASA-basic expenditure review with a narrower focus could be performed during the in-between years. This could provide adequate data for the country's annual Global AIDS Monitoring (GAM) report, and once the next NASA is undertaken, previous GAM reports that used the interim data can be updated with the more in-depth NASA findings. Refer to Appendix 4 to assist the country select their required type of HIV resource tracking.

The GAM collects annual HIV epidemiological, programmatic and financial indicators that are designed to assess the state of a country's HIV and AIDS response, and to measure progress towards achieving national and global HIV targets. Countries are encouraged to integrate the GAM indicators into their ongoing monitoring efforts and to report annually their comprehensive national data through the GAM process. Section 8 in GAM covers the financial aspects of the response, including: 8.1 planned domestic budgets for HIV, 8.2 ARV procurement quantities and prices (in the reporting period), and 8.3 the HIV expenditure in previous one to three years by financing source and intervention. Undertaking NASA greatly facilitates the country's ability to generate the 8.3 financial matrix required for GAM.

Scope of the assessment

Depending on the availability of resources and time for the study, and the country's information needs, the national authority governing the HIV response with the help of partners (and/or a steering committee/technical working group) will determine the scope of the NASA assessment as follows:

(a) The years (up to three or four years) to be covered by the NASA (and whether calendar or financial years are to be used).

(b) Sources of funding: domestic; international; private, including the for-profit sector; and household/out-of-pocket (OOP) payments/expenditures. If the country decides to include OOP spending, careful consideration should be given to the data collection approach (taking into account resource and time availability). To collect primary data directly from households and individuals regarding their HIV-related expenditures, ethical approvals must first be sought, a representative random sample must be statistically determined, informed consent obtained, and strict confidentiality and data security must be maintained (because of the personal nature of the data being collected). A rigorous survey-type questionnaire must be designed with skilled data collectors. These types of household surveys, patient exit interviews, etc., are usually not feasible for most NASAs. Therefore, to estimate OOP spending on HIV, most NASAs rely on secondary data sources, such as: SHA[1]; national OOP health expenditure surveys; demographic and health

[1] WHO Global Health Observatory data indicators: OOPE as a percentage of current health expenditure: https://www.who.int/data/gho/data/indicators/indicator-details/GHO/out-of-pocket-expenditure-as-percentage-of-current-health-expenditure-(che)-(-)
WHO Guidelines: A system of health accounts 2011 (concise version), page 82: https://www.who.int/publications/i/item/9789240049239

surveys; insurance company records of shortfalls; (non-reimbursed) payments by members; or any other relevant national surveys.

(c) Whether or not the study will analyse data at the national and subnational levels (province/district), or only national (with all the subnational data aggregated). Subnational expenditure data can be compared with the burden of disease and performance outputs per area as a measure of equity and efficiency.

(d) The currency to be used in the database and report (local currency, US dollars, or other) and the annual average exchange rates (provided by the country's Reserve Bank) to be applied to each of the study years. If using local currency, the country may decide to also present some key results tables in US dollars for international dissemination and comparability.

(e) Whether the scope of the NASA exercise will be expanded to include all TB expenditure, known as a NASA-plus (NASA+), rather than only TB/HIV integrated spending. If the total TB envelope is being collected, these additional costs should not be included in the GAM financial report which only collects HIV and TB/HIV expenditure.

(f) Indicate whether a more detailed analysis of the resources invested in the community-led response (CLR) will be undertaken, which may require some additional time and effort to identify and access community-led organizations (CLOs).

(g) If the available data allow, the analysis will also compare the NASA expenditure with the costing of the NSP, the performance outputs and the past budgets/commitments for the period of study, as well as future allocations. The NASA report should explore:

- The past and potential future funding gap (funding landscape table).
- The allocative efficiency of past expenditures.
- The technical efficiency of specific interventions (unit of expenditure analysis).
- Absorption rates and bottlenecks to spending efficiently.
- Subnational inequities and inefficiencies.

(h) For a full NASA, data on all relevant vectors should be collected in accordance with the guidelines, as listed below. If for some reason the country decides that any of these are not relevant or not possible to connect, this should be clearly explained in the scope:

- Financing entity (FE).
- Revenue (REV).
- Financing scheme (SCH).
- Financing agent and purchaser (FAP).
- Provider of service (PS).
- Service delivery modality (SDM).
- HIV/AIDS spending category/activity (ASC).
- Production factor/cost item (PF).
- Beneficiary population (BP).

NASA boundaries

In a NASA exercise, defining boundaries in both space and time is essential for maintaining focus, consistency and comparability in data collection and analysis (Figure 1.1). These boundaries typically refer to:

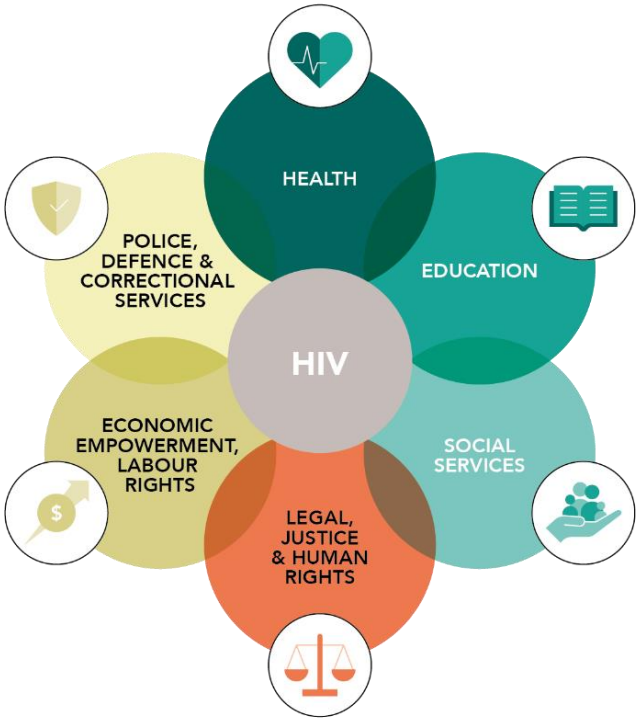
Boundaries in space

- **National level** NASA is generally conducted at the national level to assess all HIV-related spending within a country and presented as the total including all spending at subnational levels.
- **Subnational level** (optional): For countries with significant regional disparities in HIV prevalence and/or programme implementation, or with decentralized financial systems, NASA may also include subnational (provincial or district) disaggregation to reflect spending patterns in different regions. In many cases, data can be collected centrally, but may include disaggregation at the subnational level. In other cases, primary data collection at the subnational level might be required, affecting the time and resources needed to complete the data collection.
- **Sectoral scope** NASAs include spending on HIV-related activities across multiple sectors not limited to health. The sectors included are: education; social services; labour; protection; and justice, with these sectors contributing to the HIV response.
- **Cross-border** NASAs generally exclude cross-border expenditures, where HIV services are funded by the government/insurance companies *but provided abroad* (such as payment/reimbursement for antiretroviral therapy (ART) medication for citizens living abroad).
- **International spending for in-country services**. All international contributions from donors that fund in-country HIV programmes are included in a NASA.

Boundaries in time

- **Assessment period.** NASAs typically assess financial data for a specific calendar or fiscal year, usually the most recent closed financial year (T_{-1}). If NASA is not conducted annually, then multiyear assessments are usually conducted to analyse trends over time. In these cases, collecting three years of data per assessment are feasible and recommended.
- **Frequency.** Ideally, NASA exercises are conducted regularly (e.g. annually **or** every two or three years), collecting the most recent closed financial year and the previous two years (T_{-1} to T_{-3}) to allow for consistent tracking of changes in spending patterns and funding needs over time. If not conducted annually, then an 'interim' NASA-basic expenditure review with a reduced scope could be conducted in the years in between the full NASAs.
- **Data year consistency.** If possible, all financial data should correspond to the same assessment year, reflecting the consumption/utilization of resources in that period (matching/accrual accounting). Some adjustments (e.g. inflation corrections or exchange rate adjustments) may be made if data from different years are included (only in the case of missing and estimated expenditures or consumption).
- **Comparative analysis periods.** NASAs may include historical data for comparison, requiring adjustments to ensure comparability across years (e.g. adjusting previous years' expenditures for inflation by converting to real values).

Figure 1.1. NASA tracks resources for a multisectoral HIV response



By defining these boundaries, NASA exercises can accurately capture the scope and scale of HIV financing within a defined geographical and temporal context, providing meaningful insights for policy-makers and stakeholders.

ONLINE RESOURCES ON NASA

UNAIDS programme areas on resources and financing:

https://www.unaids.org/en/topic/resources

UNAIDS financial dashboard on HIV:

https://hivfinancial.unaids.org/hivfinancialdashboards.html#

NASA country reports:

https://www.unaids.org/en/dataanalysis/knowyourresponse/nasacountryreports

Chapter 2: NASA Principles, Framework and Methodology

Objectives of this chapter

This chapter explains the NASA principles guiding its implementation, and the triaxial model, which categorizes HIV spending data across three dimensions. By clarifying these vectors and the triaxial structure, the chapter aims to guide NASA practitioners in effectively mapping financial flows, recreating complete transaction and providing a standardized framework for categorizing and analysing financial transactions within the HIV response.

2.1. NASA principles

A number of 'principles' guide the application of the NASA method, and these are listed below and should be adhered to in all data collection, consolidation, analysis and presentation of the NASA findings.

Balancing the triaxial framework

The NASA framework and accounting method is organized around a triaxial framework for the recording of HIV expenditure consumed over a defined period following the three dimensions of NASA: use/consumption (SCHs and BPs); provision (providers and PFs); and financing (FEs and FAPs).

Expenditures versus budgets or commitments

NASA tracks only actual expenditures, not budget allocations, commitments or pledges, since these may not have translated into services and goods (for example, in cases of underspending and poor absorption rates). Therefore, allocations should not be reported by budget code but by how funds were spent to provide services for a defined period to the target population. Expenditure reflects the monetary value of consumed goods and services, but NASA also includes non-monetary transactions, such as in-kind donations or services, for which a monetary value can be assigned. Although budget data and budget analysis can be useful indicators of intended spending, the NASA team must follow up to ascertain what was spent (budget execution / absorption rate) and the amounts spent or consumed need to be captured (Table 1.1).

It is nevertheless useful to compare budgets to actual spending since this is an indicator of efficient execution of budget and might reveal challenges related to the flow of funds between sources, agents and providers, and the latter's ability to optimally spend and implement projects (see Table 1.1). The budget absorption rate might highlight implementation challenges related to absorptive capacities or system-related bottlenecks. On the other hand, budget execution might only be a factor of the timing differences related to the study cut-off date. Data collectors should thus always collect information on the reasons for budget variances.

In *rare cases*, where spending data are not available, budgets might be reported as part of the NASA. However, this limitation must be highlighted in the NASA report, and every transaction that is budget-based should be labelled as such in the NASA Resource Tracking Tool (RTT). Examples of when this might be necessary include the public health services provided in correctional services, where the expenditures are not separated from other health expenditures and which often do not have a specific HIV label. In this case, the intended budget for these health services may have to be used, and the portion that were for HIV-related services estimated (usually ascertained through interviews with the personnel providing these services). An assumption could also be made about the absorption rate of the specific budget, if the staff indicate that not all the intended activities were performed.

Table 1.1. Budget versus budget execution (expenditure) = absorption rates

Interventions by type	YR1 budget (US$)	YR1 executed (US$)	Execution rate
I. Prevention	6 400 000	6 010 456	94%
II. Treatment and care	2 010 850	1 786 532	89%
III. Social enablers	500 000	345 287	69%
IV. Programme enablers	4 987 000	4 237 890	85%
V. Other	370 000	50 000	14%
Total	**14 267 850**	**12 430 165**	**87%**

Time period of the assessment

Expenditures from all financing sources must be aligned to a single fiscal year/reporting period of a defined period. The estimates for several fiscal years are to be reported separately for each fiscal year. Expenditures should only be counted in a single category or subcategory: they should never be double counted. For example, expenditures on activities for orphans and vulnerable children should not be listed again under social protection and social services.

Accrual / matching accounting method

The NASA approach to HIV resource tracking requires use of the accrual (or matching) method of accounting. This is because NASA captures the expenditures on services delivered to, or consumed by, the target population within the year of study. Therefore, some cash disbursements may not be immediately accounted for as expenditures unless they have been translated into services consumed by the beneficiary population. For example, resources spent on the procurement of medicines which were not used fully within the study period, some of which were kept in warehouses, are not fully captured in the year of procurement, while the remainder would be captured in the following year, if consumed. The disbursement records (of quantities and costs) of medicines disbursed to facilities can be used as a proxy for actual consumption (as facilities do not usually maintain huge stocks other than buffer stocks). However, if disbursement records are unavailable, then procurement expenditure records have to be used, with an estimate of the consumed portion calculated (based on facility registers of patients remaining on ART by year-end) (Figure 2.1).

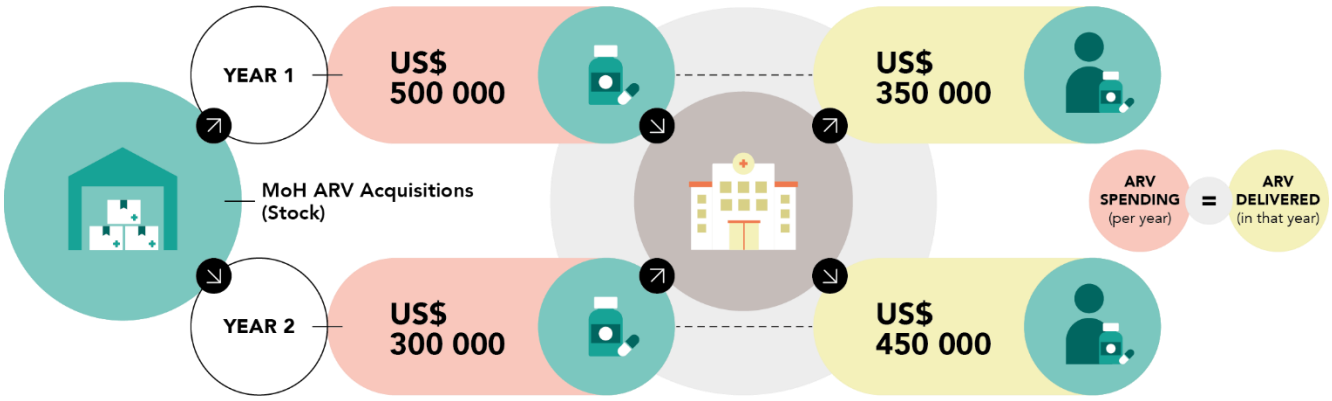
Capturing capital investments

The NASA approach defines capital investment in HIV services as gross capital formation, which is measured by the total value of the capital assets that HIV providers have acquired during the accounting period. In such assessments, capital expenditures are not annualized or discounted, as is done in costing approaches, but rather their total market price is captured in the year of acquisition. See Section 5.5 for handling capital investments in NASA.

Dealing with wastage

In cases where large quantities of commodities are not distributed or consumed and, upon examination or based on audit reports, are determined to have been damaged or wasted and no longer consumable/usable, the value of the wasted products may be captured under the activity for which they were intended and the production factor code to be applied for these should be ‘PF.01.02.07. Unusual wastage of medical products and supplies’. This will allow for the total expenditure to be recorded, but with the wasted portion clearly acknowledged in the technical efficiency analysis (in the NASA report). Potential solutions can then be devised to avoid such wastage in the future.

Figure 2.1. Example of accrual (also known as matching) accounting



NASA PRINCIPLES

Emphasize clarity by avoiding double-counting, focusing only on the resources actually used by beneficiaries, and disaggregating data for precise reporting and enhanced planning. Additionally, NASA aligns HIV expenditure data to meet international standards, ensuring transparency and consistency for global HIV resource tracking and reporting.

2.2. Application of the triaxial framework in NASA

The NASA conceptual framework is based on a triaxial model that categorizes HIV spending data across three core dimensions: financing; provisional; and consumption (utilization**)**. This triaxial framework enables a structured, comprehensive approach to capturing the flow of financial resources dedicated to the HIV response, from their origin to their end use.

By analysing spending across these three axes, NASA practitioners can:

- **Track resource flow:** Map financial resources from donors, government, or private sources through financing schemes and agents to service providers, and ultimately to end-users.
- **Assess allocation efficiency:** Determine whether funds are being directed toward high-priority interventions and reaching the populations in greatest need.
- **Identify funding gaps and needs:** Evaluate whether current funding meets the required levels for effective service delivery and sustained impact, and pinpoint areas requiring additional investment.
- **Explore technical efficiency:** Examine cost drivers of service delivery and different delivery modalities. Identify bottlenecks and poor absorption, where consumption (outputs) does not equal financing (inputs).
- **Measure equity in financing:** Consider the allocation and use of funds with regards to geographic need, key population need, and other burden of disease considerations.

This triaxial approach ensures that NASA captures the full picture of the HIV financial landscape, informing policymakers, funders and implementers on where resources are flowing, how they are used, and where additional support may be needed to optimize and sustain the national HIV response.

Each axis represents a unique aspect of the financial flows and provides a standardized classification system that enhances data consistency and comparability across various sources, activities and beneficiaries (Figure 2.2). Each axis is outlined below.

Financing axis

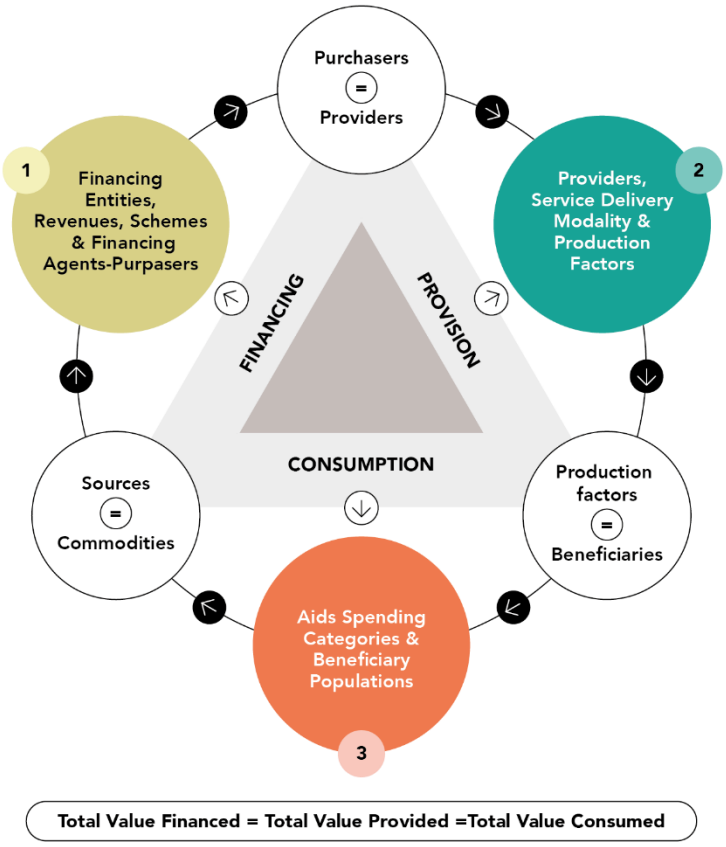
Objective: To track the sources and mechanisms of funding that contribute to HIV-related activities.

Components:

- Financing entities (FEs).
- Revenues of financing schemes (REVs).
- Financing schemes (SCHs).
- Financing agents and purchasers (FAPs).

Application: By analysing the financing axis, NASA identifies who funds HIV activities, how funds are pooled and the mechanisms by which resources are transferred to service providers. These data help to assess financial sustainability, dependency on external sources and levels of domestic funding.

Figure 2.2. The three dimensions and their vectors in the NASA triaxial model



Provision axis

Objective: To capture information on the delivery of HIV services and the organizations involved in providing them.

Components:

- Providers of services (PSs).
- Service delivery modalities (SDMs).
- Production factors (PFs).

Application: The provision axis helps to understand how HIV services are delivered, which providers are involved, and what inputs are required. These data can reveal bottlenecks in service provision, gaps in health-care infrastructure, and the relative efficiency of different providers.

Consumption / utilization axis

Objective: To assess the extent to which HIV-related services are accessed and utilized by the target populations.

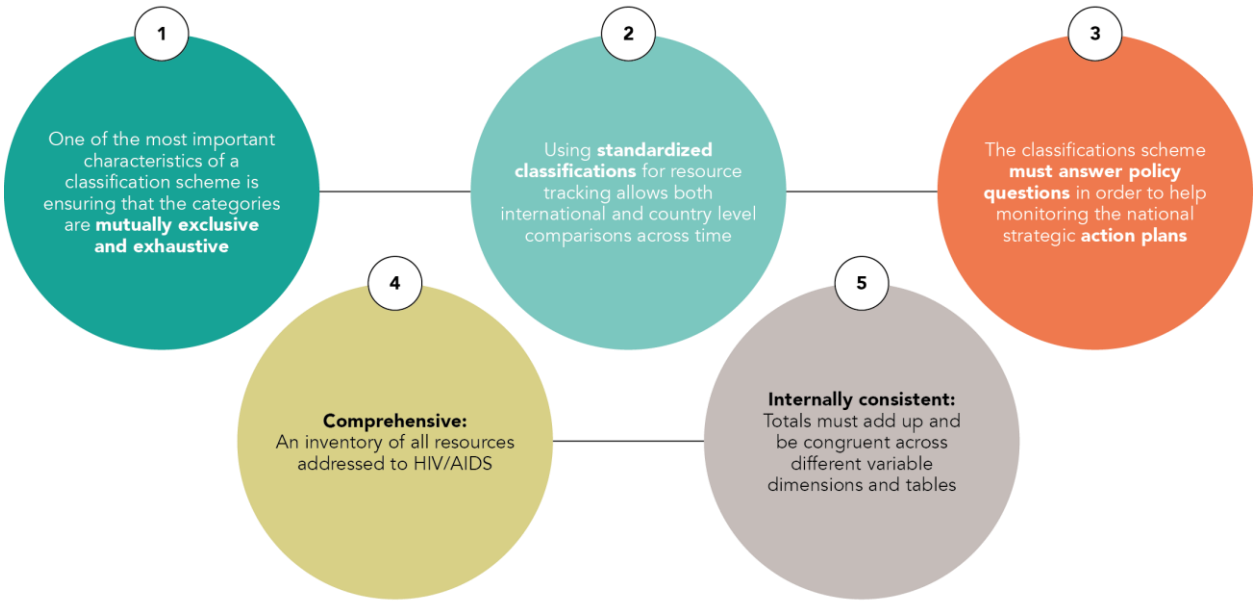
Components:

- Beneficiary populations (BPs).
- HIV/AIDS spending category (ASC**).**

Application: The utilization axis helps quantify the reach of HIV services among different population groups, enabling NASA to measure the access, equity and coverage of HIV interventions. These data support targeted interventions and help identify unmet needs in key populations.

2.3. NASA classification system

Figure 2.3. Characteristics of the NASA classification system



The NASA classification system provides a structured framework for categorizing and analysing financial transactions within the HIV response. This system enables detailed examination of how resources are mobilized, managed and spent across various dimensions, ensuring consistency and comparability of data. The classification system is organized into nine core vectors, each capturing specific elements of the financial flow, including funding sources, financing schemes, service providers, production factors and target populations. By using these standardized categories, the NASA classification system allows for a comprehensive understanding of the allocation, management, and utilization of HIV related resources (Figure 2.3). The vectors are presented below in further detail, after an explanation of the '.98' and '.99' options available in every category and subcategory.

2.4. NASA vector definitions

Vectors are essential classification elements used to systematically organize and analyse financial data associated with HIV spending. Each vector represents a unique dimension of the spending landscape, enabling a comprehensive view of how resources are mobilized, allocated and utilized within the HIV response.

Vector mapping records the individual financial transactions within the NASA system, linking all the vectors together to provide a comprehensive view of how funds flow from sources to beneficiaries. An overview of each NASA vector is presented here, with full documentation available in the appendices and the NASA Toolkit.

Financing entities (FE)

Financing entities are institutional units providing revenue or assets to intermediaries, such as financing agent-purchases or directly to providers of services or implementers of HIV programme activities. The FE vector thus identifies the origin of funds that support HIV related activities. The FE classification includes all entities that generate or provide financial resources for HIV services and programmes.

Purpose: Understanding financing sources helps to assess the sustainability of funding, dependency on external sources, and the level of domestic commitment to the HIV response (Table 2.1).

Table 2.1. A few examples of financing entity (FE) categories

Domestic public FEs	Domestic private FEs	International FEs
Government financing entities, such as national and local governments through budgets.	Private sector entities, including private insurance, households (through OOP payments) and corporations (through donations or wellness/health programmes).	Foreign donors, including bilateral aid (e.g. the U.S. President's Emergency Plan for AIDS Relief (PEPFAR), multilateral organizations (e.g. the Global Fund to Fight AIDS, Tuberculosis and Malaria (Global Fund), World Bank), and international NGOs.

Note: Only a few examples are given here. Refer to the appendices and NASA Toolkit for further classification details.

Revenue (REV)

The REV category represents the distribution of funds through specific contribution mechanisms, including in cash and in-kind. The objective of this classification is to group types of revenue of financing schemes into mutually exclusive categories. These are defined according to which institutional unit provides the funds and offers an interpretation of public and private financing. The revenues are the funds received by the financing agents, but ruled by the schemes. Revenues can also be in-kind transfers (for example, in-kind foreign assistance to government financing schemes).

Purpose of REV: The information provided by this classification allows identification of the policies established for revenue collection, their diversity and level of progressivity. For instance, governments can channel resources through various mechanisms, such as transfers to other governmental agencies, as well as to health insurance organizations, as contributions on behalf of low-income groups, subsidies to private entities and transfers to non-profit organizations. In addition, the analysis of REV guides decisions on diversifying funding sources and creating sustainable revenue streams for the HIV response, especially as donor funding may fluctuate (Table 2.2).

Table 2.2. Examples of REV categories

Domestic government transfers	Government distribution of grants from foreign sources	Social insurance contributions	Out-of-pocket payments	Donor and philanthropic transfers
Funds mobilized through national or local government budgets, often from tax revenue, specifically allocated to HIV programmes.	Transfers originating abroad (bilateral, multilateral or other types of foreign funding) that are distributed through the general government.	Contributions collected from employers, employees, or the self-employed as part of social health insurance or social security schemes.	Direct payments made by individuals or households to cover the costs of HIV related services.	Financial support from international donors, foundations, and NGOs specifically allocated for HIV interventions

Note: Only a few examples are given here. Refer to the appendices and NASA Toolkit for further classification details.

Financing schemes (SCH)

Financing schemes are structural arrangements through which HIV services and goods are paid for and obtained by the beneficiary. The SCH vector reflects the structure of financing arrangements and coverage entitlements.

Purpose: The SCH vector provides insight into the mechanisms of fund pooling, risk-sharing, and payment arrangements that enable beneficiaries to obtain HIV-related services. By examining financing schemes, NASA can assess the organization and sustainability of the HIV response, as well as the extent to which these arrangements provide equitable access to care (Table 2.3).

Table 2.3. Examples of SCH categories

Government schemes and compulsory contributory health-care schemes	Out-of-pocket payments	Not-for-profit schemes (including resident development agencies)	External schemes (non-resident)
Central/provincial government, public insurance schemes, social health insurance.	Direct payments by households for HIV-related services.	These schemes enable services to be delivered for no profit to citizens – they can either be NGO schemes or those of development agencies operating in the country (for no-profit)	Grant-based financing from international donors that are not part of the domestic financial ecosystem.

Note: Only a few examples are given here. Refer to the appendices and NASA Toolkit for further classification details.

Financing agents and purchasers (FAP)

Financing agents and purchasers are entities that mobilize (pool) financial resources from various FEs and allocate them to pay for or purchase health care or other goods and services. These entities either buy directly from providers or manage the distribution of resources, either fully or as co-guarantors of payment, to ensure the provision of goods and/or services to meet specific needs.

The FAP vector identifies the institutions or organizations responsible for managing and allocating funds for HIV programmes. Financing agents receive funds from FEs and decide on the allocation to PSs, to finance a programme or as a payment to buy goods and services, such as care and treatment, prevention, etc.

Purpose: Analysing FAPs provides insight into financial decision-making processes and identifies the key entities responsible for the allocation of funds in the HIV response (Table 2.4).

Table 2.4. Examples of FAP categories

Domestic public FAPs	Domestic private FAPs	International FAPs
Ministries of health, social services, education, justice etc., national AIDS councils, and social security agencies.	Insurance companies, NGOs, CLOs (where they raise and/or manage their own funds/ resources) and corporate foundations.	International organizations that manage and disburse HIV -related funds, such as the Global Fund principal recipients (PRs), UN agencies, international NGOs, projects in international universities, international for-profit organizations,

Note: Only a few examples are given here. Refer to the appendices and NASA Toolkit for further classification details.

HIV/AIDS spending categories (ASC)

HIV/AIDS spending categories are the programmes, services and interventions undertaken in the HIV response. The ASC classifications provide a comprehensive and detailed list of all possible HIV-related programmes, activities and services. This vector categorizes spending according to its functional purpose in the HIV response. It is a set of integrated interventions and activities to deliver a coordinated package of services pursuing a desired coverage and outcome in addressing the needs of a particular population

Purpose: The ASC vector helps monitor resource allocation across different areas of the HIV response, providing insights into whether funds are directed toward priority interventions and critical needs. The eight programme areas are shown in Figure 2.4. Each contains several subcategories of interventions to provide a comprehensive and mutually exclusive list (Table 2.5).

Figure 2.4. The eight broad programme areas for HIV/AIDS spending categories (ASC)

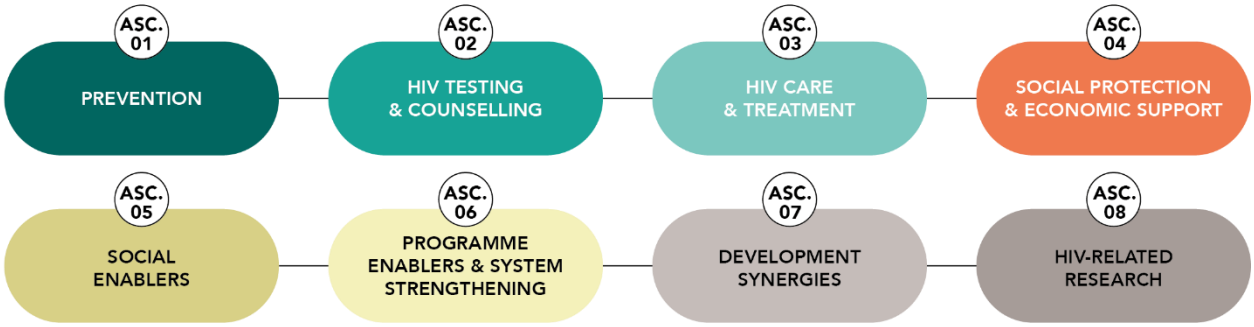


Table 2.5. Examples of ASC categories

Prevention	Care and treatment	Social enablers	Programme enablers and system strengthening
Spending on activities aimed at preventing new HIV infections, including the five pillars of prevention, and other prevention activities.	Spending on ART, clinical services, laboratory services and other care and support services for people living with HIV.	Spending on activities like advocacy, stigma reduction, human rights, etc.	Investments in health system capacity, information systems, workforce development, etc.

Note: Only a few examples are given here. Refer to the appendices and NASA Toolkit for further classification details.

Providers of services (PS)

The PS vector categorizes the types of organizations or facilities that deliver HIV related services to beneficiaries (Table 2.6). Providers receive funds from financing agents and purchasers to implement HIV programmes and provide services. The provider is responsible for the final product, but can either subcontract services or personnel for the delivery of the product, or buy the inputs necessary for producing the services themselves.

Purpose: Identifying providers allows use of NASA to analyse the distribution and accessibility of HIV services and to assess the roles of various entities in the HIV system.

Table 2.6. Examples of PS categories

Public providers	Private for-profit providers	Non-profit providers	International providers
Government hospitals, primary health-care centres, and public health facilities.	Private clinics, hospitals and laboratories.	NGOs, CSOs including community-based organizations (CBOs), and faith based organizations. Community-led organizations are specifically labelled.	International NGOs and organizations involved in service delivery.

Note: Only a few examples are given here. Refer to the appendices and NASA Toolkit for further classification details.

Production factors (PF)

The PF vector captures the inputs (cost items) or resources used by providers to deliver HIV related services. It represents the types of expenses incurred, such as personnel, medical supplies and infrastructure. A NASA can be used to analyse the resources consumed/inputs (PFs) that are transformed into outputs: goods and services.

Purpose: The PF vector facilitates the analysis of resource utilization within service delivery and helps identify cost drivers and areas for potential efficiency improvements. The classification includes two high level categories: current and capital, each of which are further disaggregated (Table 2.7).

Table 2.7. Examples of PF categories

Current expenditure	Capital expenditure
Personnel costs, medical supplies and pharmaceuticals, operational and administrative costs.	Building and renovations, health and non-health equipment, etc.

Note: Only a few examples are given here. Refer to the appendices and NASA Toolkit for further classification details.

Service delivery modality (SDM)

The SDM refers to the different settings and methods used to deliver HIV services to beneficiaries. It describes the structure and approach taken by providers to reach target populations, encompassing both the physical location and the delivery process.

Purpose: This vector helps understand the accessibility of HIV services and assesses which delivery models are most effective for reaching target populations, particularly those with limited access to facility-based care (Table 2.8).

Table 2.8. Examples of SDM categories

Facility-based services	Home and community-based services	Self-service by client	Community-led activities (non-direct service delivery)	Non-applicable
Inpatient and outpatient services provided in health-care facilities	Outreach programmes, mobile clinics and home-based care	Distribution or purchasing of self-testing kits for private, individual HIV testing	Applied exclusively for CLOs (excluding SDM 02). To be used for activities ASC 06.06	ASCs which do not have a specific SDM

Note: Only a few examples are given here. Refer to the appendices and NASA Toolkit for further classification details.

Beneficiary population (BP)

The BP vector identifies the target groups or populations receiving HIV related services. It categorizes spending by the characteristics of the persons receiving the services.

Table 2.9. Examples of BP categories

People living with HIV	Key populations	General population	Vulnerable or accessible populations
Adults and children who are HIV positive	Groups with higher HIV vulnerability, such as gay men and other men who have sex with men, sex workers, transgender people, and inmates of correctional services.	Broader population groups, including men, women, and youth at general risk	Adolescent girls and young women, indigenous groups, truck drivers, refugees, orphans and vulnerable children, and health-care workers. 'Accessible' refers to groups of people who can be accessed in one place, such as schools, the army, employees (receiving wellness services at work).

Note: Only a few examples are given here. Refer to the appendices and NASA Toolkit for further classification details.

Purpose: Analysing the BP vector helps to assess whether resources are equitably distributed among priority populations and to track the reach of HIV services to those most in need (Table 2.9).

Inclusion of the codes '.98' and '.99' in the NASA classification

The NASA classification system ensures that spending data are structured in a manner that is consistent, transparent and comprehensive. Within this system, **categories '.98' and '.99'** are used as special classifications to account for situations where expenditures cannot be neatly placed into the predefined subcategories. The following paragraphs explain what these categories represent and their purpose.

Category '.98: Not disaggregated'

- **Purpose:** This category is used when it is not possible to break down or disaggregate a specific expenditure into its appropriate subcategories.
- **Context:** For instance, certain expenditures may involve a combined or broad funding stream that cannot easily be split into more specific categories. This could occur due to the way funds are allocated, or because the expenditure covers multiple areas but the expenditure records do not split transactions in sufficient detail. This code maintains the **mutual exclusiveness** of other categories, i.e. if an expenditure cannot be classified in an existing subcategory, it is reported as **'Not Disaggregated'** under Category '.98'. This helps avoid confusion and ensures that no expenditure is left out or improperly categorized.

Category '.99: Not elsewhere classified'

- **Purpose:** This category serves as a catch-all to ensure that all expenditures are accounted for, even when they do not fit into the defined subcategories.
- **Context:** There are situations where certain expenditures may not clearly fit into any of the pre-established subcategories. Category '.99' ensures that those expenditures are still included in NASA, providing a more comprehensive picture of spending. The code '.99' is used when the expenditure does not clearly align with any of the other subcategories. The goal is to ensure that the classification system remains as comprehensive as possible, ensuring that no expenditure is unclassified. This is important for accurate tracking and reporting.

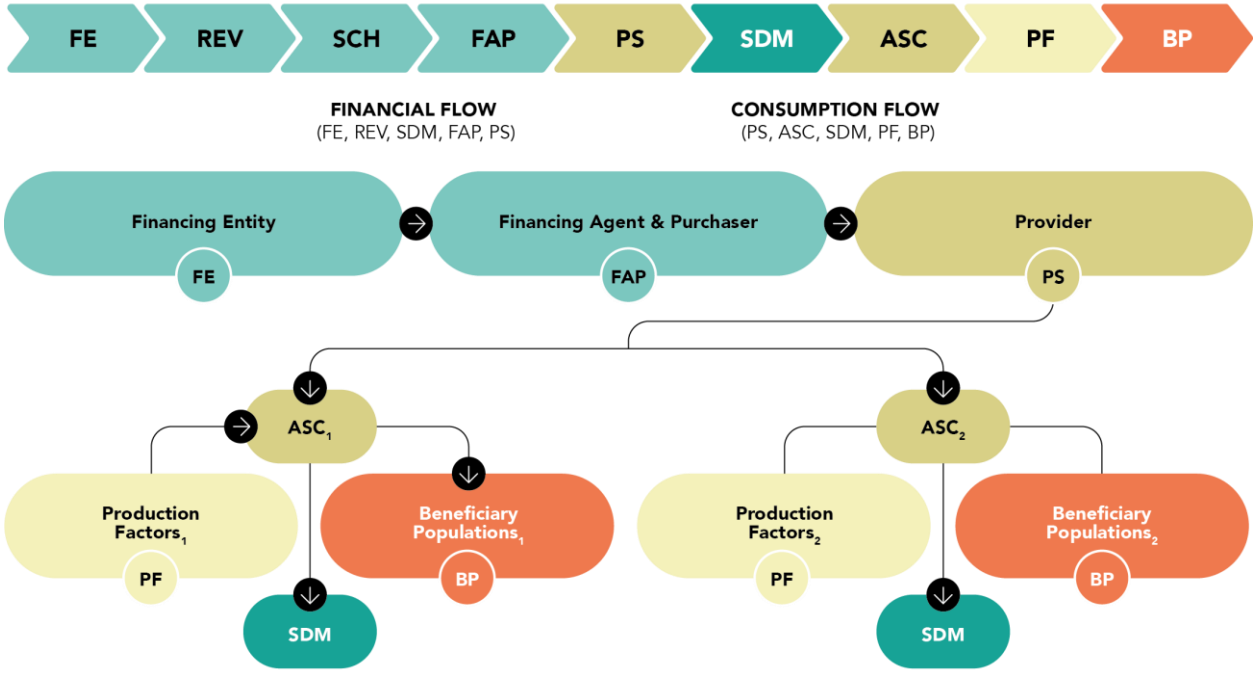
2.5. Transactions and their recreation in NASA

The NASA methodology aims to reconstruct all the financial transactions related to the national response to the HIV epidemic. A transaction is a transfer of resources between different economic agents, following the money through the financing flows, buyers and providers and the description of its factors of the production function, to generate the intended intervention to benefit specific beneficiary populations. It provides a comprehensive and transparent view of HIV financing flows (Figure 2.5). The FEs are linked with the SCHs and PSs. The provider can produce several ASCs. Each ASC is produced by a specific combination of resources consumed: PFs. Also, each of the ASCs are produced to reach one or more specific, intended beneficiary populations. Additionally, the SDMs identify the different ways the HIV services have been delivered.

In NASA, a complete transaction includes all nine vectors and the geographical location, capturing the full scope of financial flows, from funding sources to the final utilization of resources. Each vector provides essential information about the transaction, ensuring comprehensive and detailed tracking of HIV-related spending. NASA practitioners are required to ensure that every transaction captured in the NASA database has every vector correctly classified.

The early identification of transactions starts at the planning stage when mapping the different actors in the HIV response. The financing entity–agent–provider relationship is identified in this phase, as well as the funding transfer mechanisms and activities. During data collection, the transaction is complemented, with further detail on the types of interventions and the amount of resources spent on each. The correct amount to be captured as having been spent will be determined once the data received from all the institutions involved in each transaction are matched (triangulated) using the top-down and bottom-up approaches.

Figure 2.5. The complete transaction with every vector triangulated



The characteristics of a transaction include the following:

- **Nature of a transaction.** A transaction in NASA can involve various forms of financial exchanges, including grants, payments, reimbursements, in-kind contributions, or transfers of goods and services.
- **Components of a transaction:**
  - **Source**: The origin of the funds (FE and REV), and the transfer mechanisms and modalities (SCH).
  - **Recipient**: The entity receiving the funds, often a financing agent (FAP e.g. national AIDS council, ministry of health, NGO), responsible for managing and allocating resources, and the service provider (PS e.g. public or private health-care provider, NGO, research agency etc.).
  - **Purpose**: The specific objective or activity that the transaction supports (which is categorized in NASA as an ASC) such as prevention, care and treatment, social or programme enablers, research, etc. and detailing the sub-intervention under the programme area. Additionally, the service delivery modality (SDM) and the beneficiary population should be indicated in the transaction, details which may not be captured in expenditure reports and will require further investigation with the service providers.
  - **Cost components:** the details of production factors per transaction are essential and usually indicated as the cost items in the expenditure records.

- **Amount**: The monetary value or equivalent of the resources transferred in the transaction. The currency should be noted.
- **Date**: The timing of the transaction, which allows NASA to be used to map spending over a defined period, e.g. the NASA study year.

Types of transactions

- **Direct transactions**: Funds transferred directly from the financing source to an implementing agency or service provider (e.g. a donor's grant to an NGO providing HIV testing services).
- **Transactions with many intermediaries**: Transactions involving multiple steps, where funds move through various financing agents before reaching service providers (e.g. funds from a government agency distributed to regional health facilities through a central ministry). It can also apply to in-kind donations.
- **In-kind transactions**: Non-monetary transactions, such as donations of equipment, medications, or technical assistance, that are valued in monetary terms for tracking purposes.
- **Non-financial transactions/economic transactions**: While a traditional NASA places most emphasis on financing and expenditures, focusing on monetary transactions for goods and services provided and consumed, non-financial transaction can also be considered when the country decides to include a more detailed analysis of the resources going to, and being used by, CLOs. The CLO resource tracking goes beyond financial transactions to integrate some aspects of economic transactions (refer to the materials on CLO resource tracking).

By documenting each transaction, NASA provides a transparent record of HIV spending, ensuring that resources are used as intended and are reaching the intended beneficiaries. Transactions, when categorized and aggregated, enable analysis of spending by source, recipient, purpose and geography, offering insights into funding gaps, programme priorities and resource efficiency.

Recreating transactions in NASA

In NASA, recreating transactions is a systematic process used to trace, document and categorize financial flows within the HIV response. The key steps are outlined below.

Key steps in the process of recreating transactions in NASA

(1) *Identify and map FEs:*

Action: Identify and gather data from relevant entities, such as government ministries, international organizations (e.g. PEPFAR and the Global Fund), NGOs, and other stakeholders. This includes reviewing budgets, financial reports, and donor grants to trace the initial funding source.

(2) *Track fund transfers through FAPs:*

Action: Identify the institutions acting as intermediaries (e.g. health ministries, NACs, NGOs, or insurance schemes) and track how they allocate funds. This step may involve analysing contractual agreements, subgrants and budget allocations to understand how resources are directed toward HIV-related activities. Disbursement records should also be checked to confirm that funds have been transferred to the service providers.

(3) *Follow the flow of funds to PSs:*

Action: The PSs (implementing partners, subrecipients) should be contacted and their detailed expenditure reports reviewed. This may include understanding the timing and amount of payments and ensuring that expenditures align with budgeted programme activities.

(4) *Document expenditures on specific HIV activities:*

Action: Break down each transaction according to NASA's ASCs, such as prevention, care and treatment, social and programme enablers, and system strengthening and their sub-interventions – as disaggregated as possible. This step requires detailed documentation of how funds were used; often, the expenditure records include information on activities (data should be collected at the lowest level of details to ensure granularity of the analysis). The general ledger reports from accounting packages usually provide the detail required if labels have been adequately applied to each transaction, and if not, interviews with service providers will be necessary.

(5) *Allocate PFs (cost inputs)*:

Action: Review expenditures by the providers, categorizing each input / cost item (PFs) to reflect its contribution to HIV service delivery. Data are required to be disaggregated by cost inputs to the lowest level of detail, which the General Ledger report usually provides.

(6) *Identify and document the remaining vectors: SDM, BPs, REV and SCH:*

Action: Through discussions with service providers, correctly code the SDM, BP, REV and SCH for each transaction.

(7) *Cross-verify and validate data:*

Goal: Ensure accuracy and completeness by cross-referencing data sources, reconciling discrepancies and verifying transactions.

Action: Use multiple sources of data, such as audited financial statements, donor reports and internal accounting records, to validate each transaction. Reconciliation is essential for confirming that funds flow as documented and that there are no missing or misclassified expenditures.

Identifying the roles of entities in each transaction

Institutions / organizations / entities can play more than one role in the transaction. It is important to recognize all the roles each entity plays in each transaction. Figure 2.6 provides various examples.

Figure 2.6. Potential roles of the different institutional units in different scenarios

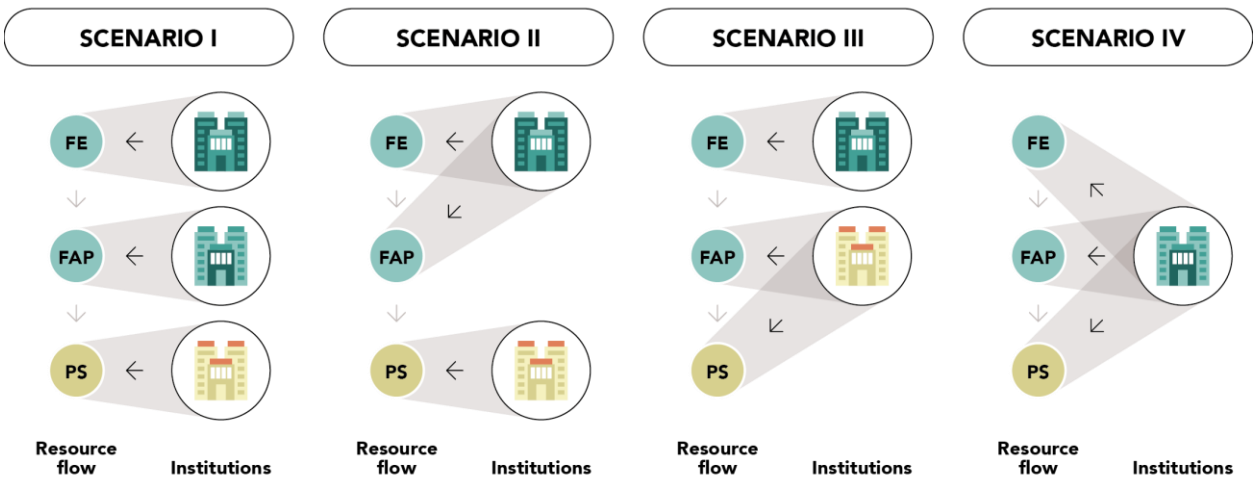


Figure 2.6 illustrates different scenarios of resource channels and the roles that various institutions play within each scenario, with particular focus on the flow of resources across different entities—FEs, FAPs and PSs. These scenarios are described below:

Scenario I

This model is a multilevel funding process covering three different institutions, with each institution having a distinct role in the transaction. The FE gives money to the FAP (a different entity to the FE), which then distributes these resources to the PS (a third entity), which is responsible for delivering services. E.g. A development partner gives money to the NAC which gives the funds to NGOs to deliver services on its behalf.

Scenario II

Unlike Scenario I, the FE also plays the FAP role and has a more direct role in influencing or overseeing the funds, which might suggest a closer monitoring or direct partnership as follows:

- The FE also acts as an FAP and channels the resources to the PS (a different entity).
- Institutions still maintain separate roles, but there is an implication of enhanced oversight or accountability by the FE.
- E.g. A development partner gives funds to its in-country agency to manage the funds on its behalf, and which selects an NGO to deliver the services.

Scenario III

The FE works with a FAP (different organization), which also provides the HIV services:

- The FE allocates resources directly to an FAP, which acts as both the financing agent and the provider of services.
- This situation relies on the FAP to handle both financing and service provision roles.
- E.g. A development partner gives money to the NAC which then uses the funds themselves to deliver services such as co-ordination, SBCC, policy reform etc.

Scenario IV

An even more simplified structure is when one institutional unit (one entity) acts as FE, FAP and PS responsible for providing services directly without any intermediary. E.g. UNAIDS global centre provides funds to the UNAIDS country office which then spends money themselves in the provision of educational materials, advocacy, co-ordination and human rights protection.

In each of these scenarios, the identification of institutional units and their specific roles is essential and should be a key outcome of the initial actor mapping stage in implementing a NASA. Actor mapping allows for a comprehensive understanding of the various stakeholders involved, their capacities and the functions they are expected to perform within the resource flow system.

Challenges and considerations in recreating transactions

Commons challenges that may be faced when recreating transactions include:

- *Data availability*: Access to financial data, especially detailed transaction-level data, can be challenging due to confidentiality or limited record-keeping practices.
- *Complexity of tracking*: In countries with diverse funding streams or multiple implementing agencies, tracking funds across different entities and activities requires substantial coordination and perseverance.
- *Accuracy in cost / expenditure allocation:* Allocating shared expenditures / costs (e.g. health system resources used for both HIV and non-HIV purposes) requires careful estimation and

sometimes a proportional allocation methodology (see section on applying costing techniques for these situations).

Recreating transactions

Recreating transactions in NASA is an essential process that follows funds from their origin through various agents and providers to their final use in HIV services. By capturing every stage of the financial flow, NASA offers a clear and detailed picture of national HIV financing, helping stakeholders optimize resources and achieve programme goals.

The classifications outlined here have evolved over time, adjusting to new priorities in the HIV response, allowing for the addition of new categories, as needed, to remain relevant to the current HIV response and policy priorities.

For a more detailed understanding of the classification system, practitioners can refer to the updated comprehensive NASA Classification and Definitions in the excel file, which provides in-depth guidance on the categories and their applications. Additionally, the NASA data consolidation tool (DCT) includes a specific sheet listing the various classification vectors, along with a drop-down menu on the data entry sheet that simplifies the selection of appropriate categories. This set-up ensures that users can accurately and consistently categorize expenditures while using the tool and the NASA software Resource Tracking Tool (RTT).

Chapter 3: The NASA Process: Key Implementation Steps

Objectives of the chapter

Provide an overview of the process to undertake a National HIV/AIDS Spending Assessment. It should help countries conceptualize the NASA process from start to completion and therefore aid in the process of planning and executing a successful NASA.
Describe the key activities that initiate the collaborative process of contributing data for the spending assessment.
Identify the considerations in deciding to undertake a NASA assessment.

Before starting out on the NASA steps, the country stakeholders should consider the different resource tracking approaches available to them. The choice of the most suitable and feasible approach requires clarity on the policy questions to be answered, the financial data to be collected, as well as their availability, the complexity/scale of the HIV response and range of actors, the degree of decentralization and if collection of subnational data is required.

Ideally, NASA should be conducted on a regular basis and implemented by the national AIDS authority (or HIV programme within the Ministry of Health) as part of its routine national monitoring and evaluation (M&E) framework, making use of public financial information systems. In this scenario, annual implementation of NASA might be possible. However, in many countries, this is not yet feasible and hence undertaking NASA every two or three years would be manageable since two or three years of data can be collected at once. The most important aspect is to undertake the assessments routinely to generate data for the most recent closed financial year as well as providing consistent time trend data over the past years.

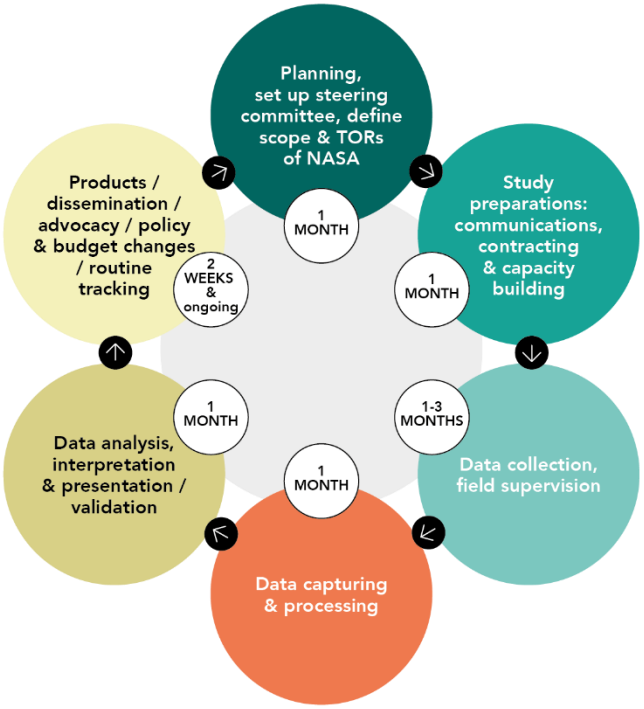
In this scenario, it may be useful to undertake a mid-term, or interim, NASA-basic review in the years between the full NASAs. This NASA-basic would have a narrower scope, less disaggregation, and only involve centralized data collection, which, although quicker, would answer fewer policy questions. Nevertheless, this option might be adequate until the full NASA is undertaken, providing detailed data to correct data sets from previous years if anything was missed in the interim review. Refer to Appendix 4 to assist the country to select their required type of HIV resource tracking. The following phases and steps refer to implementing a full NASA.

3.1. Overview of the NASA process

Once a country decides to undertake NASA, there are six broad steps which encompass all of the processes and procedures detailed in the different chapters of this report. These steps are not mutually exclusive, but quite often overlap.

At the outset, it should be clear to policy-makers and communities affected by HIV/AIDS how NASA can help improve national policies, resource mobilization and strategic planning for HIV. For NASA to be sustainable, there must be strong country engagement with, and ownership and leadership of the process, from the initial planning stages to the final dissemination, interpretation and full utilization of the results by the key stakeholders. The steps are outlined in Figure 3.1.

Figure 3.1. Key steps in the implementation of a NASA



Having decided to conduct a NASA, a country follows six main steps:

(1) **Planning the assessment and set-up.** Representatives of the potential interested stakeholders, including civil society and communities who will use the NASA data and support the NASA process can be requested to become members of a technical working group (TWG) or Steering Committee (SC) to guide and support the implementation process. Also, discussions with UNAIDS are needed to obtain support to conceptualize the NASA, as well as to receive updates in the latest framework and plan for capacity building and quality control support.

The scope of the NASA must be determined through discussions within the TWG or SC, based on the country data needs, the questions to be answered, as well as the available resources, capacity and time. Once the scope of the study has been agreed, the detailed terms of reference (TOR) can be developed and these describe the scope, approach, the timeline and budget for the NASA. Funding for the assessment would need to be secured before moving to the next step. Refer to the NASA Toolkit which provides generic NASA TOR, workplan and budget template).

Outputs for this phase: *Steering Committee (or technical working group), NASA TORs, workplan, budget.*

(2) **NASA preparations.** This phase includes informing the relevant stakeholders / respondents about the study, requesting the sharing of their expenditure data, as well as obtaining any necessary permissions (such as Ministry of Health's approval to access their data and health facilities). The selection and contracting of the resource tracking team (data collectors and NASA experts, if required) should commence as soon as the TOR and budget have been finalized, and they should develop (with inputs from the SC / TWG) a more detailed Inception Report outlining the NASA plan and approach. Thereafter the training of the resource tracking team should be undertaken. UNAIDS recommends experienced NASA experts to train the national NASA team, thus ensuring updated knowledge and skills are transferred according to the latest NASA framework and tools. These experts should also oversee the entire data collection process, conduct rigorous quality control, assist with coding and cleaning of data, as well as with their analysis and presentation. UNAIDS also provides technical support and quality review throughout the process (refer to later section on this).

An important activity that should start early is the mapping (identification) of all the stakeholders involved in the HIV response (funders, agents and providers) to guide the data collection process. The NAC/HIV lead agency should take responsibility to establish this database, with the contacts of relevant persons to be approached for data, which are critical to inform the data collection plan. Contacting these persons and setting up appointments, if needed, can commence early.

During this phase, the data collection tools can be finalized. UNAIDS provides generic tools that can be adjusted to the country's situation, and that ensure the correct data are collected according to NASA requirements.

Outputs for this phase: *database of all relevant actors / sources of data, introduction & permission letters, resource tracking team selected / contracted, consultants' Inception Report, NASA training, data collection tools, schedule of appointments.*

(3) **Data collection.** The data collection process is launched, and field work begins. The NASA co-ordinator keeps the schedule of all sources of data, appointments with respondents and data status. The usual steps for regular in-field supervision and quality control, including checking every completed data collection form and data consolidation tools (DCTs), should be followed to ensure the correct application of the latest NASA classifications.

Outputs for this phase: *completed data collection tools and DCTs, record of status of appointments and data.*

(4) **Data processing.** At this stage, the data collected are checked for completeness and accuracy, and triangulated to recreate the transactions, as described above, captured in the DCTs. Once all the data have been cleaned and captured in the DCTs, they are imported into the NASA resource tracking tool (RTT) software to consolidate the data. UNAIDS will then conduct a peer review of DCTs and RTT outputs, to identify any coding errors or omissions, which should be corrected before the analysis is undertaken.

Outputs for this phase: *corrected and final DCTs and RTT.*

(5) **Data analysis and interpretation.** This step involves analysis, estimations (if needed), and creation of graphics and bivariate matrices. These are interpreted and conclusions drafted. It is important to share preliminary findings, preferably in slide deck format, with key stakeholders to review and validate them, identifying any gaps or errors that need to be corrected *before drafting the reports/products*. Additionally, UNAIDS will review the data analysis as well as the preliminary and final products, to ensure that international standards are met.

Outputs for this phase: *final slide deck of NASA findings (adjusted after validation process).*

(6) **Preparation of products and optimizing use and impact of the NASA information.** This final step includes preparation of the report and/or other relevant products, as well as dissemination and sharing with stakeholders and policy-makers in a range of formats and platforms to ensure the utilization and impact of the findings. Here the SC must take the lead in ensuring the interrogation of the findings by different audiences / sectors, their 'internalization' and thus their influence in key decision-making processes. Refer to later section of optimizing the dissemination and impact of the NASA findings.

Outputs for this phase: *final products (NASA report, briefs, slide deck, budget submissions, online dataset), data optimization/ advocacy plan.*

The toolkit contains details of the activities in each step, and the section outlining quality control measures. Before starting the implementation planning and steps, it is essential to obtain political support for, and governance of, the planned NASA to ensure its success. The next section outlines various aspects to consider.

3.2. Political will and governance

To convince decision-makers of the importance of conducting a new NASA study, it is essential to demonstrate how NASA can enhance national HIV policies and strategic planning and ultimately improve HIV services for people and communities affected by HIV/AIDS. By showing how study results can help address current challenges in the HIV response, the process and outcomes are more likely to gain support and ownership from all stakeholders.

In some countries, building the necessary political support and establishing a governance framework for the NASA process may require one-on-one discussions with key decision-makers. Alternatively, organizing a workshop to present the benefits of NASA to stakeholders could encourage agencies to appoint representatives to a TWG or steering committee. This committee would oversee, coordinate and communicate about the NASA process, providing governance and guidance as needed. This TWG or SC should have representation of all key players, including civil society and communities affected by HIV/AIDS, and would ideally transition into a permanent board, to facilitate routinization of the NASA process. The TWG will develop the terms of reference to guide the NASA, which should include the purpose, scope and the specific ways that different organizations will be contributing to each step of the process. It will also designate the agencies that will implement the new NASA.

To accomplish this, technical officers at the NAC within the Ministry of Health (MoH), country coordinating mechanisms, the national M&E system organizations, and similar bodies must follow a series of steps (Table 3.1). The decision to conduct a new NASA is based on a balance between the need, the convenience and the capacity to carry out the study, including the resources available for the assessment. In essence, a strong case must be presented for conducting a new NASA, along with gaining support, ensuring willingness to participate, and securing the necessary resources to complete the assessment. Alternative resource tracking options can also be considered, based on available data, team capacity and other existing resources such as health accounts.

In addition, it is important to collect information on the current and expected challenges facing HIV financing and present these results in slides for presentations to authorities and cooperating agencies. There is a wide range of possible challenges, including price shocks, policy changes (such as deciding to move to test and treat), protocol changes (such as introducing pre-exposure prophylaxis (PrEP) for certain populations), or new cycles for grant applications with major donors. In all cases, having an updated profile of resource mobilization and utilization for HIV, principal and secondary channels of implementation and service delivery, costs of provision and geographical distribution of the response, are essential to make decisions, measure consequences, create projections and estimate future costs.

Once national authorities (usually the NAC or MoH leading the process) have decided to implement NASA, discussions are undertaken between the national authorities and UNAIDS prior to the planning stage to identify the best ways to support the country. The implementation of NASA can either take place on a shortened and intensified timeline, or as a longer process with data collection spread over up to six months or more, depending on the complexity of the HIV response, the numbers of actors, and if data collection in subnational areas is required.

3.3. Steering committee or technical working team

National AIDS coordinating authorities or MoH should select members of the NASA steering committee. The role of this committee is to: provide political support to the resource tracking team; identify the key strategic questions; list the specific analysis that will be made; underline those specific to the country's needs; and undertake the initial data validation before presentation to all the stakeholders. The steering committee must confirm and demonstrate that NASA is needed to answer the strategic question. It is generally composed of members from the national AIDS authority, members of key public institutions and representatives from civil society (including community-led organizations) as well as the main financial and technical partners. The steering committee should also: (i) define the format, timing and use of the data for advocacy purposes (e.g. when a policy brief will be needed to influence decisions in the national budget planning process); (ii) oversee publication and dissemination of products, and (iii) agree to the report and the data being published on the UNAIDS website and financial dashboard.

Table 3.1. Establishing governance for the planning and preparation phases of the NASA process

Step	Activity	Output	Outcome
1.1. Documenting the need for a new NASA study	1.1.1. Prepare a country context analysis	Country context analysis	The country coordinating agencies (NAC or others) formally express the purpose, scope, commitments and attributions of relevant agencies to implement a NASA study.
	1.1.2. Identify current or expected challenges for HIV financing		
1.2. Concept note based on the needs of the country	1.2.1. Write a brief on HIV financing and country needs	Concept note for a new NASA	
	1.2.2. Select and describe the best arguments to update the NASA, including HIV financing challenges		
	1.2.3. General description of the scope, duration, resources and contributing agencies carrying out the NASA study		
1.3. Advocacy session(s), awareness raising and formal launch of the study	1.3.1. Prepare pamphlets for decision-makers	Minutes and materials of the session.	
	1.3.2. Prepare presentation with elements of the country context analysis and concept note		
	1.3.3. Organize meeting(s) with decision-makers who can give the go-ahead for the study		
	1.3.4. Launch the study with key stakeholders and explain NASA's purpose, approach and data requirements	Greater awareness and support of the NASA	Improved response rate of stakeholders and quality of data provided
1.4. Mobilization of funds for the project	Done by the lead agency (e.g. NAC) and UNAIDS	Funds mobilized for the study	
1.5. Establishment of the NASA TWG	1.4.1. Require the main agencies & communities to designate a delegate to the TWG	An informed and representative TWG whose members are able to ratify decisions and access relevant resources and data for the NASA study	National response engaged and informed about the progress in NASA implementation and actively participating in data collection, integration, validation and communication
	1.4.2. Have one or more sessions for capacity building of the TWG		
	1.4.3. Train the representatives on the HIV response mapping tool		

Step	Activity	Output	Outcome
1.6. Develop tailored NASA terms of reference (ToRs)	1.4.1. Draft the NASA ToRs for the country 1.4.2 Draft ToRs required for each type of consultant contracted to support the assessment (if needed) 1.4.3. Advertise/request/contract a senior NASA technical expert to lead the NASA team, and research assistants for data collection (if needed, the number required will depend on the scale and complexity of the HIV response)	Finalized the validated ToRs for the country If needed, skilled NASA technical support consultants and research assistants (data collectors) recruited and contracted	Have clear, structured framework that guides the assessment process from start to finish
1.7. Develop an inception report	Consultants, with guidance from NAC, to develop the inception report[a] that summarizes the overall approach and methodology.	A validated inception report	A clear outline and guide for the implementation of NASA provides a detailed roadmap and milestones
1.8. Develop training materials and tools	Provide thorough training of the NASA research team (request UNAIDS assistance with facilitators and training materials)	A core NASA team of skilled researchers established (within MOH, NAC, supporting academic unit or consultants)	Sound management of the NASA process, quality control and valid and credible outputs

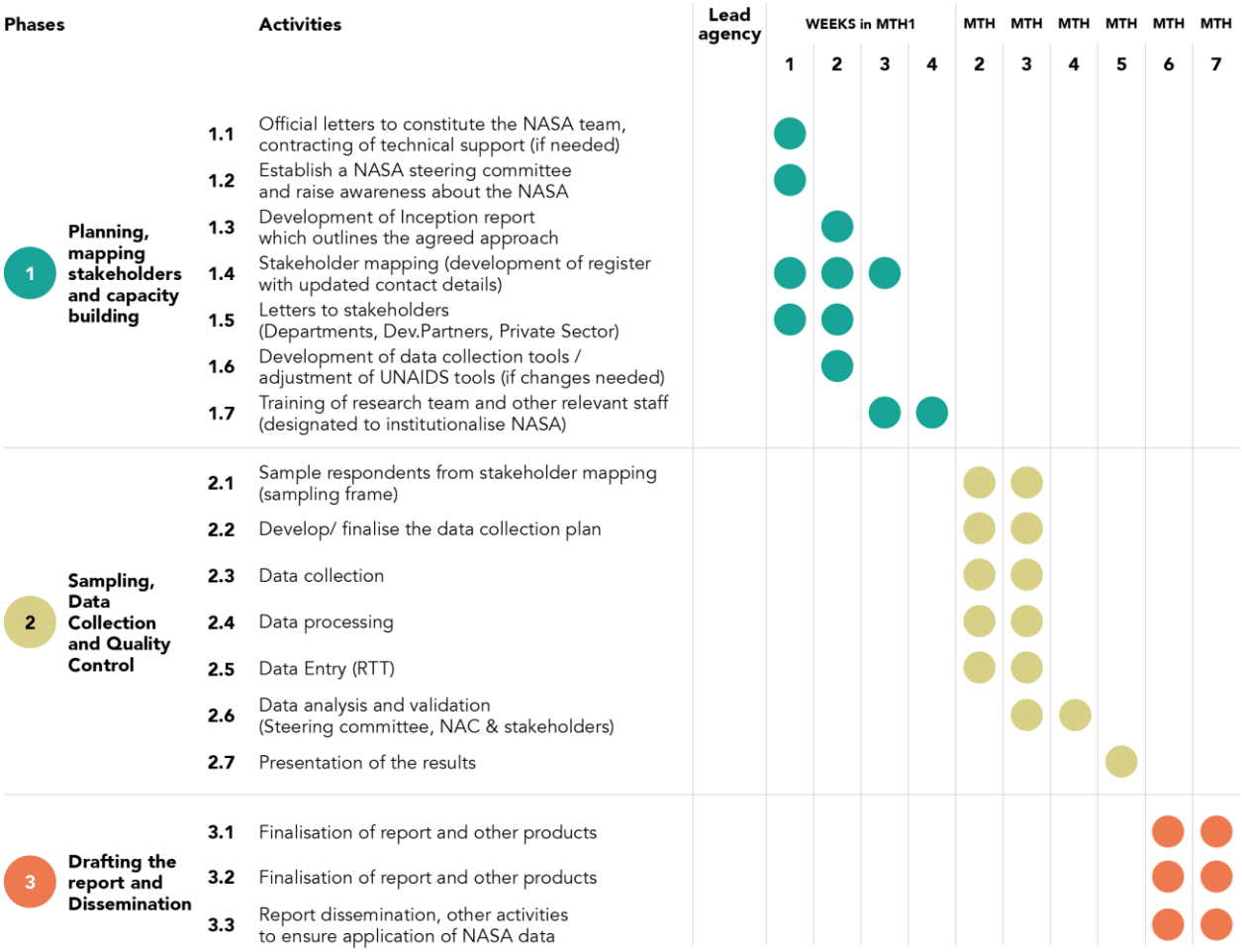
[a] See the UNAIDS guidance on the content of an inception report (NASA ToolKit).

3.4. NASA timelines

The NAC, working with the NASA steering committee, should develop a realistic timeline for the key activities of the study. A sample work plan presented in Figure 3.2 provides a generic outline of the phases and activities, and the approximate time required for each. This will vary in each country. All the key activities should be listed and adjusted to estimate the weeks and months in which each activity will be carried out. It is necessary to include adequate time required for data collection, at national and the subnational (if required) levels, taking into consideration the personnel needed for the exercise, as well as adequate time for stakeholders review and peer review for quality assurance.

It is important to note that the time required to undertake a NASA depends on many factors, such as the number of actors in the HIV field, the quality of the public financial records, the cooperation of development partners to provide their data in a summarized and complete manner, the capacity of the resource tracking team (number of data collectors), the number of provinces/districts to be included, the time of year (if affected by seasonal shutdown periods such as in December), and so on. In some Latin American countries, the data are centralized and publicly available and hence take a relatively short time (five–six weeks), while in many African countries, the data are not easily available and need to be collected through primary collection measures (e.g. face to face interviews) and can take 3 to 7 or 8 months. The reviewing of the draft findings, policy briefs and report, including UNAIDS peer review for quality assurance, as well as the validation process, can also take significant time and effort.

Figure 3.2. Example of a possible NASA work plan – which can vary from 3 to 7 months



The appendices provide details of the activities involved in each step of the NASA process, and use of the NASA Toolkit for a generic workplan.

3.5. Budgeting for NASA

The study's scope and plan define the amount of personnel needed (paid or unpaid) and the time needed for their involvement in the various stages of the study as well as other expenditures that might be required during the study, assuming that primary data collection will be required in subnational areas (i.e. provinces/districts). For example, the work plan and scope also define events and stakeholder consultation meetings, their duration and number of participants, among others. The definition of the number of institutions to be visited, their location and types of forms guides the estimated resources needed for NASA. The budget summary must present a clear synthesis of the total funds required by the project, as well as detailing the resources required for each activity and budget item. It is useful to detail the percentage of the total budget required by each line-item (cost category) in addition to the monetary amounts. The NASA Toolkit provides a generic budget template.

3.6. Resource tracking team (NASA team)

The resource tracking team is led by the financial director or M&E officer of the national HIV management/authority/council (NAC), with support, if needed, from a national and/or international

consultant, ideally with extensive knowledge of, and previous experience with, the methodology. The resource tracking team should be complemented with representatives from the Ministry of Health but can also include representatives from other key institutions or civil society, as well as national consultants. The NASA resource tracking team is responsible for the collection, processing and analysis of the data and production of the final report. The size of the team is dependent on the extent of the country's HIV response and the scope of the NASA. UNAIDS provides guidance on the skills and experience required for resource tracking technical support persons / consultants to be able to successfully implement a NASA.

When the country decides to recruit research assistants for data collection, the ideal candidates should be those with an understanding of basic economic and accounting terms and practices. They could be Master's students or have completed undergraduate studies in economics, accounting, social sciences, or health economics. In addition, they need to know the key HIV interventions and the acronyms used. Once the team members are trained in the basics of the methodology, they will be ready to effectively launch the NASA exercise. This will involve applying their new skills to track and analyse resources efficiently.

Launching a NASA requires political will, financial support and strong consensus that an update is needed for the HIV spending data. It also demands a precise description of the financing schemes providing resources for the HIV response, FAPs managing those schemes, and PSs linked to each financing scheme.

Chapter 4: Data Collection and Management

Objectives of this chapter
Plan and organize data collection. Identify primary and secondary data sources. Manage access to, and collection of, the data. Understand the principles of the data to be used for NASA.

4.1. Planning and organizing the data collection process

As indicated in Chapter 2, data collection is generally launched at the meeting with all, or most, of the relevant organizations of the HIV response (e.g. the UN family, bilateral and multilateral donors, public ministries, and departments/units, as well as national and international NGOs, faith based organizations (FBOs) and community based and community-led organizations (CBOs and CLOs), as well as the business and health insurance sectors), all of which comprise the sources of NASA data. At this meeting the methodology is presented, the data collection tools/forms and the timeline for data collection are explained.

Organizing the process of data collection requires the nomination of persons/data collectors to cover the various aspects of the study's required data. Given that each aspect requires specific research tools, it is reasonable that the training of the data collectors place special emphasis on the content of questionnaires and the data that each should collect. In addition to the training, letters of introduction from the steering committee introducing NASA and team will be required for them to obtain access to the respondents and their expenditure data. In particular, accessing health administrations at subnational levels will require central MoH permissions, as well as access to MoH expenditure records. All of these permissions should be obtained by the steering committee prior to commencing data collection.

4.2. Fieldwork supervision

It is important to provide supervision and quality control that cross-check all aspects of the data collection. Besides ensuring that the collection of data is achieving the NASA objectives and keeping to the scheduled deadlines, consistent contact with field personnel, with daily review of all their data entries, should serve to verify that the information is accurate, the sources and amounts are verified, and the correct coding has been applied. Additionally, the supervisor must ensure that the team are assuring respondents of the confidential management of their data and that they are indeed taking the correct measures to ensure their correct handling and storage. While the completed data collection tools and the DCTs will indicate the names of the organizations, these must all be removed when reporting and presenting the NASA findings. This does not apply to financing entities nor government agencies / departments, as their names appear in the NASA coding, for transparency and accountability.

Supervision serves several purposes:

- An ongoing monitoring process to identify and correct any possible mistakes before they are generalized to all collected data sets.

- Supervision helps to identify information gaps that are showing up frequently. This might require an alternative plan to deal with the missing information, including costing or other additional calculations (an example of this is information about the distribution of human resources expenses by type of service, since many organizations may not record the type of activity in detail, but they may report the costs of personnel time by the production factor or line item).
- Supervision can address questions that may require decisions 'on-the-go'. This will avoid inconsistencies being multiplied by field workers.
- Finally, the supervisors must check the quality of the data capturing and coding, to ensure they are done correctly and completely. Any errors must be identified and rectified as soon as possible in the field, as this will save time in the data cleaning and validation step.

4.3. An overview of data sources for NASA

While performance records and other annual reports provide some of the information required, they do not provide information about the financial transactions of the PSs, households, non-profit organizations, private medical insurance, off-budget programmes, and external financing agencies. For this type of information, the resource tracking team must collect the detailed expenditure records of all the actors and be prepared to manage some uncertainty with estimations where needed. The teams should be well trained to combine 'hard' financial figures with 'soft' estimates and extrapolations of those hard to measure items.

National/central/federal level sources of data

The central ministries and headquarters of the donors, procurement agencies and implementing partners will be located at the national level and will provide the bulk of the data required for NASA. However, they should be asked to provide their detailed expenditure reports, disaggregated by subnational region, with information on sources, providers, interventions and cost items, where possible. Where the national level entity cannot provide this disaggregation, the research team will need to go to the subnational levels to collect each region's spending by their PS, ASC, SDM and PFs.

Subnational level sources of data

If the national entities cannot provide the actual expenditure by subnational region and with the ASC, SDM and PF details, then the subnational (provincial) ministries/departments and implementing partners' offices will need to be visited. In addition, if the government of the country is decentralized or devolved with autonomous subregions, then their expenditure reports may not be centralized at the national level and would need to be collected at the subnational level.

Data from the providers of services

The preferred source for disaggregated spending on detailed HIV interventions and services, their delivery modalities (SDMs) and within those, the split between production factors, is the PSs themselves. Ideally, interviews with the financial and programme managers of the HIV PSs and access to their accounting, financial records and inventories will provide the necessary details to rebuild the NASA transactions. The NASA team should have a solid understanding of financial accounting records to be able to read general ledgers, request the relevant cost centres (tag' expenditures in accounting packages), and to ask the right questions of the financial and/or programme managers.

Existing digital health information systems

There may be several digital health information systems in-country that should be used to access different pieces of the NASA puzzle. In particular, procurement management information systems can provide a wealth of data regarding the prices, volumes and expenditures on HIV-related commodities, and which often constitute a large portion of total HIV spending. Several initiatives have taken place over the last decade to improve centralized tracking of procurement and distribution of HIV commodities at national and subnational levels. These initiatives have resulted in improved and accessible procurement and logistics management information systems (LMISs). Several indicators may be

available from these which could be instrumental in tracking expenditure on HIV commodities by the FEs (public and donors):

- ARV regimen pricing and quantities procured and distributed.
- Site level stock situation of commodities and the quantities dispensed to beneficiaries. Test kit pricing and the quantities procured and distributed.
- Condom pricing and the quantities procured and distributed.
- Pricing of all commodities, which indicates the agreed procurement purchase price, the procurement agency fees and all costs incurred to import and store them.
- Programmes on essential ART service indicators, such as patient numbers, regimen distributions and adherence.

Countries' procurement information systems vary—some countries have information systems that track commodities at facility level while others have systems that can track commodities at central warehouses. These are known as the SCMS (supply chain management systems) or PMS (procurement management system). If the NAC can access these data sets, a large portion of their HIV expenditure could be quickly collected. However, the procured quantities (and cost) of any commodity do not necessarily mean they were consumed/utilized in the year of procurement. The NAC and NASA team should attempt to also access the quantities of those distributed to facilities (as the closest proxy to actual consumption) and their costs be assumed to be the consumed value in the year of analysis.

Out-of-pocket expenditures/payments

For out-of-pocket (OOP) expenditures or payments by the population for HIV goods and services, one source of information may be the national health account estimate of household health spending. The health accounts may provide this OOP estimation split by disease, but if not, some portion of the health OOP expenditure should be estimated to be HIV related, based on a realistic assumption. Other possible sources of data on OOP payments are the population surveys on household spending, such as the 'household income and expenditure survey', the 'demographic health survey', the 'household budget survey', the 'health status and health service consumption survey', etc. The drawback of those surveys is that they report the total OOP expenses of the households on all their health care, without separating HIV-related spending. In such cases, an assumption-based proportion would need to be calculated that could be attributed to HIV (this would need consultations with relevant persons in-country). Also, the unit of observation in these surveys is usually the 'household' and not 'individual', while HIV service use refers to individuals, not households.

If there are no household health spending surveys, nor recent national health accounts with OOP payments available in the country, OOP expenditures on HIV services could be collected if they can comprise a significant contribution (some countries reported that as much as 70% of the total HIV expenditure were OOP expenditures). In such a case, it might be useful to conduct a survey to collect primary data on individuals' OOP spending on HIV. However, such a survey would require full ethical approval (for which adequate time must be planned) and must be correctly designed with an adequate random sample size to ensure extrapolation to the whole population. These types of surveys will require extra time, larger teams of skilled data collectors, and thus much larger budgets. The NASA steering committee should first attempt to identify available secondary data from which reasonable estimates can be applied as the most feasible option.

4.4. Data collection approach

Data are mainly collected using forms/data collection templates/tools which are tailored by the resource tracking team to meet the country's needs. The data collection tool could be distributed as soft copies (e.g. MS Excel or Word files) or hard copies, either as self-administered or as interview schedules. The tools tend to be self-explanatory; nevertheless, it is highly recommended that, at least during the first implementation of NASA in the country, the NASA team plays an active role in assisting institutions

such as FEs, FAPs and PSs to complete the forms through face-to-face interviews. Self-administered forms often suffer from poor response rates, incompleteness and errors that cannot be checked and corrected immediately.

After distributing the data collection tools/forms, the resource tracking team should follow up with the institutions to verify that data were reported correctly and assist in the completion of the forms where necessary. It is recommended that the team visits (or meets virtually) with all the implementing organizations.

In addition, the data collectors should request the expenditure records to verify the information provided. It is sometimes necessary for the data collector to convert the respondent's financial report into the required NASA structure to recreate the transactions. The respondent, or the data collector, must remember that every transaction must have every vector identified: FE, REV, SCH, FAP, PS, ASC, SDM, PF and BPs, as well as the geographical location.

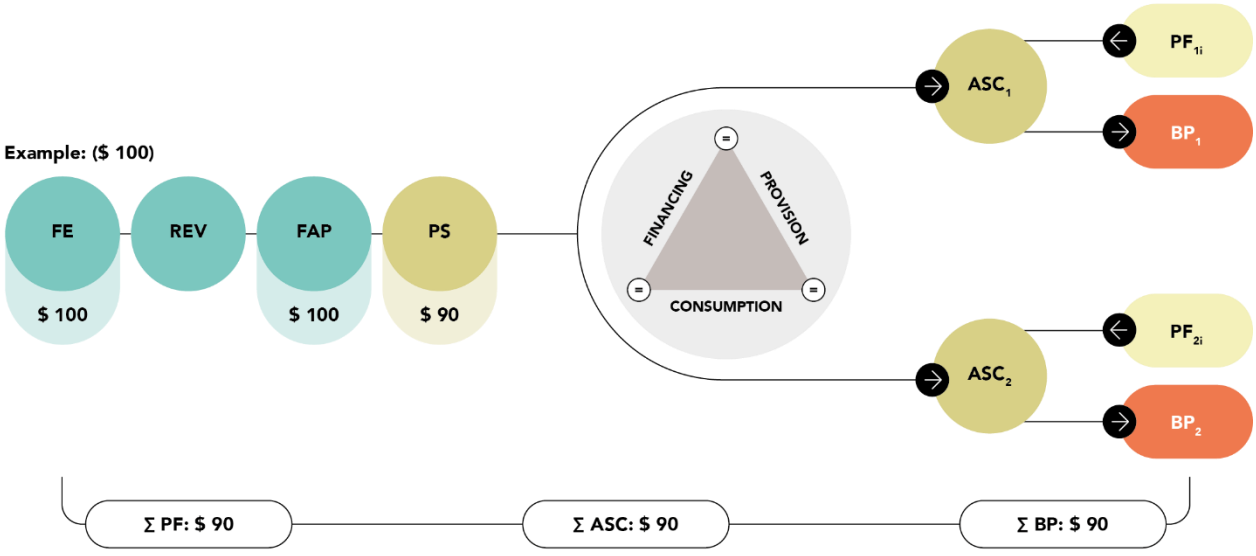
4.5. Data collection rules and methods

Top-down, bottom-up and mixed approaches

The bottom-up approach allows the resource tracking team to collect the actual spending from the PSs (bottom-up), and the funds disbursed from the donors (top-down) to recreate the complete transactions by reconciling the two sources of data. All data collected and accounted for in the transactions must be adjusted to reflect actual spending (goods and services delivered). Hence the data provided by the service provider are prioritized over the source/donor's data if a discrepancy exists between the two sources.

Figure 4.1 illustrates how the reconstruction of the transaction should be achieved. The resource tracking team will process data received from different organizations (i.e. FE, FAP, and the PS), noting that their expenditure figures may not match exactly since not all the funds received were transformed into goods and services at the provider's level.

Figure 4.1. Triangulating actual spending bottom-up and top-down – practical example



To account for actual spending as considered in NASA, data from PSs must be matched with data from the FEs (sources of funds). Figure 4.1 shows that **$100** entered the system from the FE and was fully and correctly split between providers and their activities and beneficiaries and PFs, indicating that all the funds received were transformed into goods and services. If there is any discrepancy, say with a lower amount of **$90** being reported as spent, then the remaining $10 could be used in the following

year; in which case it is captured in the following financial year's NASA database. The resource tracking team should also ascertain if the $10 was used for the organization's overheads or management fees, which should be considered as having been translated into a service and is therefore captured in a separate transaction as 'ASC.06.02. Programme administration and management costs' (above-service delivery level) and 'PF.01.02.04. Administrative and programme management costs (excluding PSM)'.

Avoiding double counting and underestimation

It is very important during any resource tracking assessment to avoid double counting. This is especially true for the HIV response, where there are several layers of intermediary institutions before the resources reach the PSs, and hence the complexity of the funding flows increases the risk of double counting. Carefully recreating the transactions minimizes the risk of double counting by ensuring that all data collected are correctly linked to a specific source, by reconstructing the flow of funding, no matter how many intermediary institutions were involved.

For example, the Global Fund provides funds to a PR (NGO X), which transfers them to a subrecipient (NGO Y), which in turn sends them to a 'sub-subrecipient' (CBO Z). When the data collector visits CBO Z, it may say that the funds came from NGO Y or even NGO X without indicating that the primary funding source was the Global Fund. The data collector may capture this as one transaction, and additionally capture NGO X expenditure data for their Global Fund grant in a separate transaction, not realizing that the funds for CBO Z have thus been entered twice, or double counted. Therefore, when interviewing each institution, it is important to understand all the levels of intermediaries, and to recreate the entire transaction from the very original source of funding, in this example the Global Fund.

This is particularly important for all funds coming from PEPFAR. The PEPFAR Expenditure Report (ER) data are now available online and include the expenditures of all their agencies, implementing partners and subrecipients. Therefore, when data are received from providers indicating that one of the PEPFAR agencies (such as the United States Agency for International Development (USAID) or the United States Centers for Disease Control and Prevention (CDC)) were the source of their funds, these transactions should be omitted from the NASA database, since they will have already been captured from the ER report. The ER data are disaggregated with sufficient detail of the interventions (for ASC coding), targeted beneficiaries (for BP coding) and cost categories (for PF coding) but may not provide the names of the implementing partners (for FAP coding) and sub-recipients (for PS coding). This can make it challenging to identify transactions for specific FAPs and PSs. The team should discuss the handling of the data with the PEPFAR agencies and implementers to decide the best way to handle the data without double counting transactions.

Regional/ provincial (subnational) disaggregation

Most countries are interested in understanding their HIV spending according to their subnational (or regional) geographical areas. This assists their targeting of high-burden areas for greater impact and also for the analysis of equity in spending across geographical areas with different needs. For NASA to produce the subnational reports, the expenditure data need to be disaggregated by region. Importantly, more and more donors are moving towards district targeting and hence their implementing partners are reporting their spending by district. Thus, every transaction in NASA should be labelled with the district in which the consumption occurred.

If the expenditure data are not disaggregated by subnational regions, then some logical allocation factor can be applied (such as the percentage of total numbers of persons reached in each area by the specific intervention). For example, the PEPFAR ER data no longer have their subnational identifier and hence can only be manually split per area based on their performance indicators for specific interventions. Any limitations in the regional disaggregation must be explained in the report.

Twelve-month expenditure reporting period

Annual expenditure data are collected and reported in NASA. Additionally, if NASA collects data for three years, the expenditures should be split correctly between these years based on when the services were actually provided/consumed, as opposed to all the years being lumped together and/or dividing by three.

Alignment of fiscal/financial years

A fiscal (or financial) year (FY) is a 12-month period that is used for taxation and accounting purposes and may not align with the calendar year (1 January to 31 December). For consistency in NASA, expenditures captured from all financing sources must align with one reporting 12-month period to ensure clarity in data consolidation and analysis. This is usually the calendar year, unless the government has a different fiscal year for its budgeting and expenditure reporting, in which case, it would make sense to align with the public fiscal year in the NASA report (to better serve the government's planning purposes). Some donors may have differing reporting years, and these should be adjusted as far as possible (if quarterly reports are available) to the agreed NASA reporting period. Alternatively, assumptions have to be made about equal expenditure per quarter, and the annual amounts divided by four, and the assumed quarterly expenditures matched to the reporting period (see the NASA Toolkit training materials for more guidance). All the assumptions and adjustments must be documented and summarized in the methodology section or annex of the NASA report.

However, the only notable exception to this rule is the PEPFAR ER data set, which is according to the United States Government's fiscal year (1 October to 30 September). These data are not available according to quarterly periods, and any attempt to divide by four and realign with a different fiscal period would result in thousands of rows of transactions having to be divided correctly and moved into different NASA years. This would make the data unrecognizable to the PEPFAR agencies and their implementing partners (IPs), thereby making their review and validation impossible. Rather the closest 'match' (with the most overlapping months) between the US Government's fiscal year and the NASA reporting period should be documented.

For example, if NASA's reporting period is 1 January 2024 to 31 December 2024, then the closest match (with the most overlapping months) would be the PEPFAR ER24 report for the period 1 October 2023 to 30 September 2024. The most important action is to decide, document and apply consistently the matching over years and between NASAs.

Currency conversion

All expenditure data can be presented in local currency and/or converted into US dollars. The steering committee should decide on the reporting currency, and all expenditure data should be converted accordingly for capturing in the RTT (only one currency can be captured in the RTT country project file). However, the RTT can then convert the local currency to US dollars for reporting in both currencies, but not for several currencies. If the local currency faced significant fluctuations and depreciation, it is helpful to show both local currency changes over time and their US dollar equivalent, for international comparability.

An indication of the official annual average exchange rate per US$1 is a requirement for each NASA reporting year, and is set in the RTT parameters. This information should be obtained from the central/reserve bank.

Monetary units

All expenditure data need to be clearly presented in units of measurement (single units, thousands, or millions). Consistency in applying the same monetary unit across all data entries, and across all the reporting years is essential. In setting up the RTT parameters, the unit of measurement must be set and thereafter all imported data must adhere to the same unit. For example, if the unit of measurement is selected as millions in the RTT project set-up, all expenditure data captured in the DCTs must be divided by 1 000 000 before being imported into the RTT.

Handling capital expenditures

Capital assets usually include upgrading, construction and renovation of infrastructure and buildings, as well as expenses for the procurement of equipment, furniture and vehicles. NASA seeks to capture any HIV capital investments, which include high fixed start-up costs and once-off infrastructure investments such as the purchase of new equipment, upgrading of facilities and the strengthening of laboratory facilities to support HIV-related activities. This also includes the implementation and upgrade of information systems, software and hardware for information networks to manage HIV-related information. Thus, any investment in infrastructure, facilities, or equipment whose benefits last a long period of time and involve the commitment of large sums of money, should be handled as capital in

NASA. For example, the US Government defines capital expenditures or investments as those which cost more than $5000 and which are used for more than one year. Other countries may define a minimum cost of capital expenditure as $1000. Often, these capital investments may be shared across diseases and services, and in these cases, only a portion of the expenditures must be attributed to HIV, applying a logical assumption based on utilization or other allocative factor (refer to the section on using costing techniques for shared expenses).

NASA captures the total expenditure invested in capital assets required for the HIV response, within the NASA reporting period. It is managed as a financial transaction *(not depreciated or annuitized)*, not as the usual accounting and economic costing practice, which also sometimes includes an opportunity cost. It captures the 'explicit costs' which have been paid directly in monetary/cash form to receive the associated benefit.

In SHA2011[2], capital spending and current spending are separated, and the capital investment is not linked to a specific intervention. To avoid double counting, the SHA and NASA approach is to account for physical investment and not capital consumption (that is, the expenditure is not annualized over the lifespan of the capital asset). The resource tracking team should document, to the extent possible, only the disbursements in capital during the year of the assessment. These expenditures on capital formation should be recorded for all institutions and activities within the expenditure boundary of NASA.

Confidentiality of data

The resource tracking team needs to appreciate the sensitive nature of expenditure data and thus assure respondents of the confidential management of their data, while taking all measures to protect their data. Although the completed data collection tools and the DCTs will indicate the names of the organizations, these must all be removed when reporting and presenting the NASA findings. The providers of services will be labeled with the PS code and aggregated with other similar organizations. However, this does not apply to financing entities nor government ministries / departments, as their names appear in the NASA coding, for transparency and accountability.

4.6. Standard data formats

As outlined above, the data collected for NASA comes from a range of sources (each of which may use different formats for their expenditure reports) according to their own reporting requirements which may not align with the NASA's needs to identify all nine vectors needed to reconstruct a complete financial transaction. This presents a challenge for achieving the standardized, detailed financial tracking that NASA requires.

When an expenditure report is missing one or more of the nine NASA vectors, data collectors will work closely with respondents to help complete the format, ensuring that all necessary information is accurately included. This collaborative effort may involve adding missing vectors, such as those detailing service delivery modalities, beneficiaries, or disaggregated interventions. Data collectors play a crucial role in guiding respondents through this process, assisting them in providing a full account that meets NASA's vector requirements.

Once all vectors or variables have been populated, the data collectors convert the information received into the NASA format. This is accomplished using either a data collection template or a data consolidation tool (DCT) specifically designed for NASA (available in the NASA Toolkit). These tools streamline the process of adapting diverse financial data into NASA's standardized format, ensuring consistency across all data entries and making it easier to aggregate and analyse data from multiple sources.

Most accounting packages have a more or less standard way of reporting every transaction, often called general ledger reports, and once these are set up with the required 'cost centres' and exported to Excel, they can easily be restructured to a uniform approach to recording financial transactions across different

[2] WHO, 2017. A system of health accounts 2011. https://www.who.int/publications/i/item/9789240042551

entities. Standardization ensures that all entities follow the same guidelines for capturing transaction details, which enhances the accuracy and comparability of the data. These formats also allow NASA data collectors to seamlessly integrate financial data from diverse sources into a cohesive, comprehensive assessment of HIV-related spending across the country.

4.7. Data collection tools

The NASA data collection templates/tools are designed to capture a wide range of financial transactions related to HIV spending from FEs, FAPs and PSs. They enable countries to document and categorize expenditures according to the nine NASA vectors. Flexibility in the tool's format allows countries to choose between electronic or printable versions based on their data collection approach and logistical constraints. This adaptability ensures that the tools can be effectively used in various contexts, whether the data are collected from centralized institutions with digital capabilities or decentralized regions where paper-based methods may be preferred, all while ensuring that all nine vectors are collected as well as the geographic location.

UNAIDS offers data collection templates to facilitate comprehensive and flexible data collection across various reporting environments (refer to the NASA Toolkit). Countries can choose or adapt these templates based on the volume of data, technical capabilities and preferences of data sources. One data collection template is specifically designed for institutions that handle extensive data sets, such as national public finance reports, Global Fund PRs' general ledger format, PEPFAR ER data set, health insurance company data, or other large organizations with high transaction volumes. The data set format template is structured to accommodate a large number of transactions efficiently, with fields for each of the nine NASA vectors.

This format enables users to import and work with large electronic data sets easily, allowing for streamlined data entry and processing. The format is particularly suitable for digital data collection and can be integrated into the NASA DCT, which allows for automated import into the software RTT. This approach minimizes manual input, which can help reduce errors and speed up the data entry process (see the section below relating to the management of large data sets).

For smaller organizations, or settings where the digital infrastructure may be limited, a simpler, table-based template is available, which allows respondents to manually record each of their expenditures, ensuring that all nine NASA vectors are captured for each entry. This template is particularly useful in cases where there are fewer transactions to record, or when a paper-based method is preferred. It can also serve as a printable version, enabling easy distribution of hard copies to multiple data sources and facilitating on-site data collection where digital access is unavailable.

If self-administered forms are used, full precautions should be taken to reduce the risks of poor response rates, incompleteness and errors that are not detected by the data entering parameters of the tool. After distributing the data collection tools/forms, the NASA resource tracking team should contact the institutions to verify that data were reported correctly, and assist in the completion of the forms, where necessary. In addition, the data collectors should request the expenditure records to verify the information provided, and sometimes it is necessary for the data collector to convert the respondent's financial report into the required NASA structure to recreate the transactions. The respondent, or the data collector, should remember that every transaction must have every vector identified: FEs, REVs, SCHs, FAPs, PSs, ASCs, SDMs, PFs and BPs, as well as geographical area.

4.8. Managing large data sets and their 'cross-walk' to NASA classifications

There are some institutions or organizations that may provide large data sets or detailed expenditure records, such as general ledger outputs from accounting packages. Instead of attempting to recreate individual transactions in the DCT Data_Entry sheet with these data, the DCT now includes an 'Alternative_Import' sheet which allows for the easier import of these data, if first mapped to the NASA classification codes, and then restructured into the columns required for successful import. Examples

of such data sets include the expenditure reports of PEPFAR's implementing partners, which PEPFAR now makes publicly available, the Global Fund's PRs' detailed expenditure reports, the government's accounting software outputs and the detailed records of payments made by health insurances (private and/or social insurance schemes). Each of these is discussed in more detail below.

PEPFAR's Expenditure Reports

The PEPFAR Expenditure Report (ER) provides details of the costs incurred by their Implementing Partners (IPs) in supporting the provision of HIV services in a country. Each IP is required to report its annual expenditure within a fixed format and using standardized coding of programmes, subprogrammes, beneficiaries and cost items. IPs are also required to collect and report their subrecipients' (SRs') expenditures. These are then compared with stated strategic objectives, as described in annual country or regional operational plans (COP/ROP) and annual work plans and are also used for future budgeting purposes. All countries' ER data are publicly available on PEPFAR's Panorama Spotlight website. However, these datasets do not have the IP and SR details, making it difficult to code the FAP and PS correctly in the NASA transactions. In such cases, only *FAP.03.01 Country offices of bilateral agencies managing external resources and fulfilling financing agent roles* can be applied for all of the transactions. For the PS, the NASA team should select a code that will only be used for the 'de-identified' PEPFAR PSs, such as *PS.03.98 International providers in-country offices not disaggregated*, for all transactions. This is not the ideal situation, and every effort should be made to obtain the more detailed ER data set from the in-country agencies (USAID, CDC) which still have their IP and SR names, or which have been replaced with their type (e.g. public providers, non-profit organizations and international NGOs). UNAIDS can assist the in-country agencies to relabel their IPs and SRs for this purpose.

Additionally, UNAIDS, with the assistance of PEPFAR agencies, has developed a mapping of the PEPFAR ER categories to the NASA categories. From a combination of the ER programme area, subprogramme area, beneficiary and sub-beneficiary, the NASA ASC, SDM and BP can be deduced in many cases, and the ER cost category indicates the NASA PF, to some degree (see text box below on limitations). This enables the rapid conversion/'cross-walking' of the ER data sets to the NASA vectors, which can then be restructured and copied into the DCT Alternative_Import sheet. However, some of the ER subprogramme areas are aggregated and require further discussion in-country to obtain details from the IPs. This is especially true for the PEPFAR category 'Care and Treatment: HIV clinical services', which can (but does not necessarily) include ART, adherence support, prevention of vertical transmission of HIV (PMTCT), TB/HIV treatment and even cervical cancer screening. If details cannot be obtained, all the spending labelled as 'HIV clinical services' must be captured in the NASA, by default, as *ASC.03.98 Care and treatment services not disaggregated* (since it cannot be assumed that it is for ART specifically). The subprogramme 'HIV drugs' can be labelled as ART, *and* where its cost component is also 'pharmaceuticals', the PF can be labelled as ARVs. The UNAIDS ER-NASA crosswalk and the accompanying instructions in the NASA Toolkit set out its correct application.

Once the ER data have been prepared and captured in the DCT Alternative_Import sheet, they can be imported to the RTT (after the necessary steps to list all the organizations and their types have been done in the RTT (see the RTT manual).

Box 4.1:
Limitations in the PEPFAR Expenditure Reporting dataset

There are some limitations in PEPFAR ER data that NASA practitioners need to consider when preparing them for RTT importation:

- PEPFAR uses a fiscal year running from 1 October to 30 September of the next year as opposed to a calendar year (or the government's financial year). The ER annual data should ***not*** be adjusted (by applying assumptions of quarterly expenditures) to make them fit better with the calendar year or the government's fiscal year, as this will make the data unrecognizable to the in-country agencies, and therefore unverifiable. The NASA report should indicate the NASA assessment year in which each ER report was placed.
- Where the publicly available ER data indicate the implementing partners' and subrecipient names (for the identification of the PS), the PEPFAR country team could select the best NASA FAP and PS codes to replace IP/PS names with these codes.
- Some ER spending categories (subprogramme areas) in ERs are limited (not adequately disaggregated) as compared with their equivalent in NASAs and require further discussion with the in-country agencies and their IPs.
- Some cost components are not as disaggregated as the NASA PFs (e.g. there is no cost category for ARVs or HIV test kits).
- Unfortunately, the PEPFAR ER data no longer have geographical location identifiers (subnational units, SNUs). For an estimated split by geography, the NASA Steering Committee can request PEPFAR's Bureau of Global Health Security and Diplomacy (GHSD) to split specific direct service delivery spending according to its Data Import and Systems Administration (DATIM) performance indicators.
- PEPFAR-funded regional programmes (under Regional Operational Plans (ROPs)) may have difficulties in reporting the share for specific countries. The resource tracking team needs to discuss this with their country's PEPFAR agencies and IPs, to devise a way to identify and collect the country specific data – the ER data submitted by the IPs should have the country (operating unit) label, if the team can access these.
- **Since the interruption of PEPFAR funding in 2025, it is uncertain what type and format of expenditure data will be made available.**

Global Fund Principal Recipients' Expenditure Reports

The NASA team may request the detailed general ledger outputs from all of the Global Fund PRs' accounting systems (rather than their usual Performance Update and Disbursement Reports (PUDRs), which do not provide the details required of cost item ***per*** intervention). The general ledger reports, converted to Excel, should provide every payment/transaction, per year, with all the variables/cost centres required for the NASA transactions. These include the Global Fund module, intervention, activity description, cost item, geographical location (if possible), and expenditure amount. These reports should be separated per subrecipient and the PR's expenditure. An example is shown in Table 4.1. The NASA Steering Committee can request the assistance of the Global Fund Country Portfolio Manager if PRs are hesitant to share their data.

UNAIDS, with the assistance of the Global Fund, has created a 'cross-walk' to enable the mapping of the Global Fund module and intervention (per grant cycle) to NASA's ASC, SDM and BP codes, and their cost items to the NASA PF codes (see the NASA Toolkit). This crosswalk can be applied automatically to the PR expenditure data, and the data (according to the NASA vectors) can then be restructured and copied into the DCT Alternative Import sheet and imported into the RTT (see the RTT manual).

Table 4.1. Example of the type of general ledger report required from Global Fund PRs: **General ledger outputs for EACH PR, with various cost centres as shown below**

Budget Line No.	Module	Intervention	Activity Description	Cost Input	SR Implementer name	Location of service delivery / operation	YR1 spent (USD)	YR2 spent (USD)
11	Treatment, care and support	Differentiated ART service delivery and HIV care	Training of health professionals on Paediatrics: General, HIV and replacement of ARVs	2.1 Training related per diems/transport/other costs	dddddd	District 1	103,175	1,365,504
63	Reducing human rights-related barriers to HIV/TB services	Human rights and medical ethics related to HIV and HIV/TB for health care providers	Training workshop for health professionals on stigma and discrimination.	2.1 Training related per diems/transport/other costs	eeeeeee	District 2	98,916	126,678
76	Reducing human rights-related barriers to HIV/TB services	Sensitization of law-makers and law-enforcement agents	Supervise and monitor the activities and action plans of the provincial trainers and the provincial commands in the integration of responses to key populations, GBV and human rights.	2.3 Supervision/surveys/data collection related per diems/transport/other costs	ffffff	District 3	19,532	17,529
113	Prevention	Condom and lubricant programing	PSM costs for Men who have sex with men	7.2 Freight and insurance costs (Health products)	gggggg	District 4	142,256	227,312
116	Prevention	Condom and lubricant programing	Procurement of condoms & lubricants for Sex workers and their clients	5.3 Condoms - Female	etc etc.		1,126,000	-
144	Differentiated HIV Testing Services	Facility-based testing	Procurement of RDTs to diagnose HIV, co-infections, and co-morbidities for Other vulnerable populations	5.4 Rapid Diagnostic Test			5,667,492	5,664,530
145	Differentiated HIV Testing Services	Facility-based testing	PSM costs for Other vulnerable populations	7.1 Procurement agent and handling fees			79,813	169,936

Other large data sets: Public expenditure reports and health insurance companies reports

Usually, the government and health insurance companies have detailed expenditure reports that list all their payments/transactions in the structure required for NASA. However, the most important step to be taken by the NASA team is to map all its intervention and cost item labels (charter of accounts) to the

relevant NASA ASC, SDM, BP and PF codes. Since these are not standard across countries, an automated cross-walk could not be developed by UNAIDS, but only by the in-country teams. However, once set up, they can be applied across large data sets and across time. Thus, the resource tracking team must share these as a deliverable of the NASA project, so that future NASA processes can simply apply the same cross-walking again, with minimal annual updates (mapping of new interventions/labels). The mapping must be verified in the country with the relevant agencies. As an example, the South African resource tracking team in collaboration with the South African National AIDS Council, the National Department of Health and the National Treasury, developed a comprehensive mapping of all public expenditure items in their charter of accounts to NASA's categories, as well to as their NSP labels (this was facilitated by the conditionalizing of the national grant to provinces for their HIV response which required specific reporting and thus labelling of expenditures). A tool was developed (first in Excel and then in R®) to extract all HIV and TB expenditures from the public basic accounting system (BAS) and then relabeled them according to the NASA vectors. These could then be easily reconstructed in the DCT Alternative_Import sheet for RTT importation. The initial set up of this tool (named BASLY) took some time with extensive discussions with the national and provincial departments of health, to correctly code transactions, but thereafter, the mapping only requires minor annual updates for any new categories in the public charter of accounts. This approach can be replicated in other countries, if their public charter of accounts has some indication (in their budget's sub-programme classification) of the disease area and intervention.

Private sector – businesses and out of pocket (OOP) expenditures

Collecting the private (business) sector's HIV financing and OOP spending on HIV usually involves interviews with businesses and household surveys, respectively. These can be expensive and time-consuming exercises, and will require more time for implementation, and could perhaps be undertaken bi-annually. During the intermediate years, it is possible to apply, and adjust where necessary, the proportions found in the latest study to these two sectors.

4.9. Community-led organization resource tracking

The tracking of resources for the CLR requires particular attention to CLOs, which often operate under the radar due to stigma and criminalization. Their contribution to the HIV response is critical. Thus, a CLO resource tracking framework has been developed which complements the broader NASA by capturing detailed financial and non-financial transactions to and from CLOs. The NASA framework provides adequately disaggregated, and new, classifications to better capture data from CLOs as well as from other civil society organizations (CSOs), ensuring comprehensive mapping of financial flows across the entire spectrum of CSOs (see the NASA Toolkit for CLO resource tracking materials). Whether community-led or not, CSOs contribute significantly to service delivery, advocacy and outreach, and their inclusion in NASA ensures a complete representation of community and civil society efforts, including efforts to identify and value their non-financial transactions.

While NASA focuses primarily on financial transactions related to HIV services, the CLO resource tracking approach also considers some aspects of economic contributions made by CLOs, such as volunteer time, pro bono services and donated space or goods. **Collecting these non-financial transactions can be part of a full NASA or conducted separately, as a stand-alone study to track CLO resources**.

Although CLO resource tracking focuses primarily on CLOs, NASA also recognizes and documents expenditures related to all non-CLO CSOs actively contributing to the HIV response, many of which occur at the community (geographical) level and are labelled as such with the SDM classifications. These include NGOs, FBOs and other non-community entities (with specific PS labels in NASA) whose expenditures and contributions are integral to understanding the broader civil society efforts.

Thus the important contribution of CLOs can now be easily incorporated into NASA and undertaken at the same time. The NASA steering committee will identify all the CLOs to be included in the assessment, and explain to them the purpose and use of their data, which shall be treated confidentially. Obviously, the number of CLOs will vary per country, but every effort should be made to include all those identified and agreeable to being interviewed. The resource tracking team should then interview them using the tools described below to collect both their financial and non-financial information, which will take slightly

longer than interviewing other service providers. Based on the experience of countries that have already added the CLO aspects to their NASA, the CLO data collection *takes around 4 to 5 hours, per CLO.* The analysis and presentation of their data can be done separately (in a separate chapter in the NASA report, or a separate brief), so as to specifically highlight and disseminate their financing situation results to relevant stakeholders. Extra care to protect their data and identities is essential to not cause any harm or risk to them due to a punitive legal environment. The steps are outlined in more detail below, and additional materials are available in the NASA Toolkit.

Data collection tools for the CLO response

UNAIDS has developed two data collection tools with distinct objectives for CLO resource tracking. The first is the user-friendly Tool A designed to collect non-financial transactions, such as volunteer time, pro bono services, and donations (including rent-free use of space and in-kind services). This tool is tailored for CLOs and includes various tables covering key aspects such as the organization's profile, beneficiaries, interventions and revenue sources (like grants, fundraising, or household contributions).

The second tool is a customized NASA Tool B designed to collect financial transactions, allowing the mapping of all NASA vectors based on the DCT format. The DCT will be used to consolidate and recreate financial transactions for import into RTT.

Steps for CLO data collection

Although the usual NASA data collection forms will collect financial transactions from CLOs, some extra effort is needed to collect their non-financial transactions, which may require face-to-face interviews with programme managers. An initial effort to identify and contact CLOs will also be required, as described below:

- *Context analysis and CLO identification.* Identify and select CLOs actively involved in the HIV response using a systematic process.
- *Preliminary filtering and formal contact.* Short-list organizations that meet CLO criteria (see the UNAIDS CLO self-selection tool in the NASA Toolkit) and formally engage them, explaining the study and use of the data, while being sensitive to their potential caution and hesitancy to share data. Assure them of data confidentiality measures.
- *Final CLO selection.* Refine the list based on eligibility criteria, finalizing the organizations for data collection.
- *Data collection:*

  Step 1: Customize the CLO data collection tools with the NASA team and provide training to the data collectors, including interviewing skills and costing techniques (used for the volunteer time, services and donated goods).

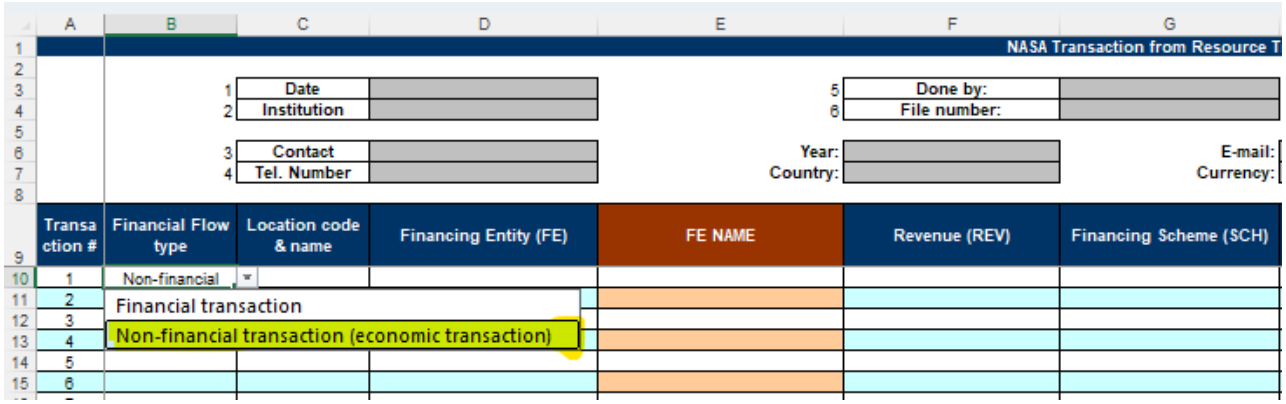
  Step 2: Arrange suitable interview times with each selected CLO and send them the tool beforehand to allow them time to prepare for the interviews.

  Step 3: Conduct in-person or virtual interviews.

  Step 4: Data collectors assist CLOs in completing the tool, requesting relevant records and expenditure reports, if available, and identifying all the received non-cash donations, in volume and in monetary valuation, including the time of volunteers (see the UNAIDS CLO resource tracking materials for guidance on applying monetary values).

- *Data capture.* The CLO's financial transactions, collected in Tool B, can be captured in the DCT and imported as usual into the RTT. The CLO's non-financial transactions, collected in Tool A, can either be analysed separately in Excel, or they can be captured in the DCT and RTT, but they must be labelled as a **non-financial transaction** in the financial flow variable, as shown in Figure 4.2.

Figure 4.2. An example of labelling a non-financial transaction



This process ensures a comprehensive and accurate assessment of CLO contributions to the HIV response, that can be fully integrated into any NASA. Further details on CLO resource tracking are available in the NASA Toolkit CLO Guide.

4.10. Converting all data to NASA format

Once data collection is complete, the data in all the available templates can be consolidated and converted into a standardized NASA DCT. This ensures that all transactions, regardless of format, are integrated into a cohesive data set that adheres to NASA's reporting standards and have the correct NASA classifications (see next section), and *all transactions are in one currency*. The DCT can then be seamlessly imported into the NASA RTT, which will identify any initial errors in coding or unlikely combinations of vectors (see the RTT Manual in the NASA Teams Community and ToolKit).

PRACTICAL CONSIDERATIONS

When using the NASA data collection tools and DCT, countries should consider:

Providing training for respondents and data collectors. Ensuring that all involved understand the tools, vectors/variables, and purpose can improve the quality of the data collected.

Ongoing support. The NASA lead and data collectors should be available to assist respondents, especially when additional guidance is needed to complete the nine vectors (if self-administered tools are used which are prone to poor or incomplete response rates).

Special support. The UNAIDS Global Centre also offers support to countries and provides peer review of their completed DCTs and RTT outputs to ensure the correct application of the NASA framework and classifications.

4.11. Using the DCT for data entry and processing

The DCT is a pivotal resource in organizing and structuring data for NASA. It is designed to translate raw, often inconsistent, expenditure data into the standardized framework required for NASA financial and non-financial transactions. A brief explanation of how to effectively use the DCT follows, as well as its features to achieve this goal (see the NASA Toolkit and training materials for further details):

(1) Data entry: Manual input of transactions

For smaller data sets or cases where data must be individually verified, the DCT allows for manual entry: Populate fields for each NASA vector to reconstruct complete transactions. To ensure completeness, each row should represent a complete NASA transaction with all relevant vectors filled. Incomplete rows may result in errors during consolidation. To verify the entries, built-in validation features (control) should be used which check for missing or incorrect entries.

(2) Importing large data sets: The Alternative_Import Sheet

For organizations dealing with large data sets, the Alternative_Import Sheet enables efficient data processing by copying data in bulk. To prepare data in the DCT format, the organization's data set should be aligned to match the DCT template format. The prepared data should then be pasted into the relevant columns, ensuring proper alignment. This includes: columns for each NASA vector and properly formatted values. Once validated, the data will integrate with the DCT's processing mechanism to create complete NASA transactions.

(3) Applying NASA classifications: NASA category sheet

The NASA category sheet provides a comprehensive reference for all NASA classifications, ensuring consistency and accuracy. This sheet contains predefined classifications for all NASA vectors (e.g. FEs, RSs and PSs). They act as the dropdown options in the data entry sheet to ensure data capturers cannot make errors in typing codes (however, care is still needed to select the correct code as many may look similar).

By following these steps, users can utilize the DCT effectively to organize raw expenditure data into NASA-compliant financial transactions, ensuring accuracy, consistency and usability. The DCT and user instruction are provided in the NASA ToolKit.

Once data have been correctly captured in the DCT, they can be imported into the RTT software which may also flag other data issues and inconsistencies; these should be addressed before importing (see the NASA Toolkit and the RTT manual in the RTT, as well as detailed instructions available in the NASA Teams® Community).

Checklist for successful data collection

Before data collection starts, a meeting should be held to tailor the data collection tools to country needs.

Ensure data collectors are well trained in the latest NASA framework, classifications and tools (according to UNAIDS global standards).

Identify the providers of information / respondents / actors in the HIV field including all CLOs, and prepare the introduction letters for the team, as well as special permissions.

Field personnel should supervise the entire data collection process.

Reconcile the data collected in the top-down and bottom-up approach.

Verify that actual spending has been collected rather than budgets / commitments.

Ensure that the team is aware of, and applies, the accounting principles, particularly the 'matching' principle.

Make sure that a rigorous data review and cleaning process is adhered to throughout the NASA process, including requesting UNAIDS review of data (in DCTs) and undertaking the required corrections.

Chapter 5: Quality Control and Validation

Objectives of this chapter

Ensuring good data quality is a cornerstone of the NASA process as it underpins the reliability and credibility of the findings.

This chapter aims to provide the quality control steps and actions required at each stage: capturing clean data, supervising data entry and analysis, peer review of outputs and in-country validation, as well as global peer review options.

Quality control mechanisms are implemented at different levels to guarantee consistency, accuracy and adherence to international standards. As described above, at the country level the data collectors and capturers ensure complete and clean data, while the supervisors and technical support persons / consultants provide rigorous oversight, conducting regular reviews of fieldwork and data submissions to identify and address any inconsistencies or gaps. Simultaneously, at the international level, the UNAIDS Global Centre provides capacity building, expert technical support and peer review to critically assess the data and analysis, ensuring compliance with international benchmarks and methodological standards. Finally, all preliminary data analyses, interpretation, draft results and conclusions and recommendations are shared broadly with key in-country stakeholders for their scrutiny, input, validation and adoption. This approach ensures that the insights derived from the NASA process are both locally grounded and internationally credible, facilitating evidence-based decision-making across diverse contexts.

5.1. Data cleaning

Collecting and presenting the correct financial information in the NASA process, using assumptions and estimates as little as possible, and ensuring full transactions are correctly coded for all vectors, are essential to increase the validity of the findings. Presenting incorrect or incomplete data will distort the financial landscape, lead to inaccurate interpretation, conclusions and could have negative impact on planning, resource allocation and utilization.

Thus, checking and cleaning the collected data involves efforts to reduce errors before they occur, as well as addressing errors detected during each of the following steps:

- During the process of data collection and entering.
- During the process of transforming, converting, extracting, or merging data.
- During the process of data validation and corrections.
- During the process of data analysis.
- During the process of preliminary analysis and results presentation.

Some observations on data cleaning and validation efforts include the following:

- Since all data sources potentially include errors and missing values, data cleaning addresses these anomalies.

- Data cleaning and validation is the process of detecting incorrect, incomplete or incorrectly coded data and then removing or correcting them, removing duplicates and/or re-mapping existing data to achieve the most accurate database for analysis.
- Data cleaning and validation are often necessary to bring consistency to different sets of data that have been triangulated from different sources of data, in recreating transactions.
- Some data errors are detected incidentally during analysis activities, or when preliminary findings are presented.

5.2. Supervision of fieldwork and quality control

Effective supervision and quality control mechanisms are crucial to ensure consistency, accuracy and completeness of data collected. Monitoring progress in data collection is equally important to maintain alignment with scheduled deadlines. Regular engagement with field personnel (data collectors), combined with a thorough review (preferably daily) of their data entries, helps verify the accuracy of information, confirm the validity of sources and amounts, and address any gaps or miscoded entries.

The objectives of supervision include:

- *Continuous monitoring:* Proactively identifying and addressing errors before they affect the entire data set.
- *Identifying information gaps:* Recognizing frequently missing data and devising alternative approaches, such as logical estimations. For example, if human resource expenditures for an organization are reported as aggregate totals rather than broken down by service type, supervisors might need to allocate costs to specific activities based on service delivery utilization proportions or based on self-reported time allocation by the personnel in question.
- *Real-time decision-making:* Resolving issues promptly and documenting decisions in a daily logbook to prevent further inconsistencies across field workers.
- *Data quality assurance:* Ensuring the data collected are complete and accurately recorded. Any errors should be addressed immediately in the field, minimizing the time and effort required later for gap filling, data cleaning and validation.

Refer to Box 5.1 for supervision tips.

Box 5.1:
Data Supervision Check List

To support effective supervision, the following checklist can be used:

- Confirm that all field personnel understand the objectives and purpose of the NASA study, have been provided with training in the latest NASA methodology, classifications and the data collection tools, and have access to ongoing support and guidance in the field.
- Verify that the NASA team members are collaborating effectively and maintaining good working relationships.
- Confirm that introductory letters were sent to respondents in a timely manner.
- Ensure, or facilitate, satisfactory access to data sources.
- Ensure that the data collection process adheres to planned timelines.
- Address any complaints about the conduct or performance of data collectors.
- Review every completed data collection tool and the DCTs into which the data are transferred and prepared. This review should occur every day that the team are in the field, and feedback provided as quickly as possible, so that corrections can be made while still in the field.
- Check full transactions have been captured, with all nine vectors correctly coded.
- Check for double counted entries, for example, where the information from the FE is captured in a different transaction to data also collected from the PS, instead of creating one transaction by triangulating the data.

Common errors that should be checked and corrected

Several common errors occur in the process of collecting and coding financial data and supervisors must be constantly vigilant for these. These include, but are not limited to, the following:

- Inconsistent date and number formats.
- Numbers that are stored as text in Excel, which means they cannot be summed.
- Total expenditure per service provider differs from the sum of their intervention spending.
- Total expenditure per intervention differs from the sum of expenditure disaggregated by beneficiary or production factor.
- One or more vectors in a transaction have not been captured.
- Values are outside of the acceptable range for values; a very large amount might imply local currency has been captured for that transaction when the other transactions are all in US dollars.
- Logically, a transaction should not have a negative value for the expenditure. However, if large expenditure reports have been used, these often include negative values where expenditures have been reversed or adjusted, in which case they should be captured and their summed effect (in RTT) would be to obtain the correct overall expenditure.
- Merging of data sets with different units of measurement (e.g. millions and thousands). All figures must be captured in the same unit in the RTT.

- Different currencies captured in the DCT and RTT. Data must be converted to one currency before importing. The choice of reporting currency should be determined by the steering committee.

- Unlikely and incorrect combinations of ASC and BP, ASC and PF, FAP and PS, PS and ASC, ASC and SDM. For example, spending on prevention interventions for sex workers should not have the BP labelled as general population or another key population. School-based education programmes should not have their BP indicated as inmates of correctional services. Importantly, all the ASC.06.01–06.04 Systems strengthening activities, should not have a specific beneficiary group nor a specific service delivery modality. The supervisors and reviewers should look for these obvious mis-codings. Additionally, importation into RTT as well as the generation of the GAM matrix will highlight further incorrect combinations which must be resolved before importing the data or generating a GAM matrix.

- In reviewing all data entries, supervisors and the UNAIDS peer reviewers should flag and record all these potential errors, and data capturers should correct, action or explain their choice of codes (in the case of unlikely combinations), keeping a record of the changes made. This practice ensures that incomplete/incorrect records are identifiable and can be handled appropriately during analysis.

Tips to ensure thorough quality control and validation

Documentation of all corrections to data or their coding allows for their review and adjustments if necessary, or to even return to the original value if required (always keep a backup copy of the original data in a separate workbook). The approach for managing missing data should also be clearly documented, including any assumptions or imputations made, to ensure that the methodology is defendable, reproducible and interpretable. Documentation of changes also avoids duplication of error checking by different data cleaners/reviewers and to undo data cleaning errors, if necessary.

Proper documentation should exist for each data point, including information on the type of editing, dates and personnel involved. Generated bivariate pivots for core programme expenditure allow for easier checking of totals and disaggregation, missing vectors and unlikely/impossible combinations.

Time series data should be created to ascertain if totals have changed dramatically between any years and if these changes can be explained. Check PEPFAR, Global Fund and other donors' total captured expenditures against historical trends, budget commitments (PEPFAR COP and Global Fund allocations, which are available online) and against available online donor databases (OECD DAC, PEPFAR Panorama Spotlight, Global Fund data explorer).

The following common errors should be identified and corrected:

- Inconsistent units of measure (e.g. 100 thousand versus 0.1 million versus 100 000):

  ✓ Convert to common units.

- Inconsistent reporting period (fiscal versus calendar year):

  ✓ Convert to a common reporting period.

- Inconsistent currency of measure (e.g. US dollars versus Euros versus national currency):

  ✓ Convert to the agreed common currency, apply the verified exchange rates.

- Inconsistant formats (e.g. 100.000 versus 100 000 versus 100000) :

  ✓ Convert to a common format, ensure expenditures are in number format in the DCT.

- Duplication of the same data reported by PS and FS and/or FA:

  ✓ Remove the duplication and avoid double counting. Triangulate to create one transaction.

- Budgeted or received funds captured instead of spent/used (e.g. procured drugs versus/consumed drugs):

        - ✓ Update base with correct consumed/spent resources, if possible.
    - Missing data:
        - ✓ Missing values require further examination, with efforts to collect or explain them.
    - Mistakes in mapping:
- Correct the unlikely combinations (FS–FA–PS; ASC–BP; ASC–PF, ASC-SDM).

The roles and responsibilities related to error detection and correction should be clearly defined and communicated between all team members at each stage of data collection, entry and processing. Ensure that a second pair of eyes reviews and compares the original data to those captured and entered in DCTs/RTT. It is preferred that data cleaning should start in the field (field editing) alongside data collection. Similarly, during data entry, double checks should be mandatory, as well as when preliminary data are analysed and presented for validation. Concurrently, UNAIDS will undertake peer review of all DCTs, RTT files and preliminary analysis files, and provide feedback to ensure global NASA standards have been correctly and consistently applied.

5.3. Data validation and interpretation

The quality of NASA is ensured when resource tracking adheres to the necessary steps outlined in this manual. These steps include understanding classifications, mapping actors and their functions, conducting thorough data collection, processing and capturing the data accurately, performing rigorous validation, and producing a comprehensive final report and/or other outputs/deliverables.

For the client, stakeholder or end-user, quality is defined by the degree of confidence in the accuracy and completeness of the data and its relevance, utility and impact. It is therefore essential that the NASA Steering Committee shares the preliminary NASA findings with a wide range of stakeholders to ascertain their confidence in the data and address their concerns or identified gaps/errors in the data.

The first step of data validation should begin after the preliminary analysis, when the preliminary findings (in slide deck format) are first shared with key stakeholders, such as the NASA Steering Committee, Global Fund, PEPFAR, and government and CSO representatives. This allows them to confirm whether the NASA results accurately reflect their contributions to the HIV response, and any required adjustments are made by the resource tracking team.

The preliminary results are then shared at broader validation meetings to assess whether the findings accurately reflect the reality on the ground and align with stakeholders' understanding of the national response, and to confirm that the data have been correctly interpreted based on the information provided. This meeting serves several purposes: to identify the possible errors or gaps (that should then be addressed), to share and discuss assumptions applied during data processing, to present the key findings and discuss their meanings and resultant recommendations and actions. Interpretation of the results is a process of connecting the data with processes, policy changes, performance indicators and trends (such as increasing ART coverage and reducing HIV infections), to determine the forces shaping the financing trends and impact on the strategic HIV response, and *vice versa*.

For an accurate interpretation of the data, stakeholders in the HIV response must assist in interpreting the data correctly and validating the findings. The meeting thereby encourages stakeholders' engagement with, and adoption of, the NASA findings and recommendations. Based on stakeholder feedback and insights, further corrections to the NASA analysis and findings may be required. It is therefore suggested that the preparation of the final report, policy briefs and other outputs should only be undertaken after the data validation steps have been taken. Thus, recognizing stakeholders' contributions and improving the quality of the report enhances the acceptance and utility of NASA within the national response.

5.4. Global peer review and quality control

In addition to the in-country steps outlined above to ensure that the correct NASA methods are applied and data of sound quality are collected, captured and processed by the NASA team, UNAIDS also offers capacity building in the new framework and tools, technical support through NASA experts to the in-country team, as well as other quality reviews undertaken by peer reviewers / NASA experts to improve the NASA outputs. These are outlined in Table 5.1.

Table 5.1. Quality assurance measures offered by UNAIDS Global Centre and Regional Equitable Financing Advisers at specific stages in the NASA

Quality assurance measures
An initial 'orientation' meeting/discussion between country counterparts (potential NASA Steering Committee members) and the UNAIDS Equitable Financing practice (resource tracking team) which provides an overview of the new NASA framework, the generic process, implementation plan and rough budget, and skills of the NASA team (if needed, international and/or national consultants and data collectors).
UNAIDS reviews the NASA terms of reference, scope, budget, workplan and dissemination approach planned in the country. Assistance is also offered for the country's applications for financial support.
UNAIDS provides guidance in the selection of international and national consultants (when necessary). International consultants should meet the skills and experience requirements as described in the ToR, and UNAIDS has a pool of experienced NASA consultants with proven track records for supporting good quality NASAs. UNAIDS will review consultants' qualifications and provide their inputs for their rating, with final selection is up to the country. However, any concern that UNAIDS might express about certain consultants should be taken into account since these are based on their previous poor performance.
Kick-off meeting convened by the NASA Steering Committee, involving NAC, MoH, the NASA consultants, UNAIDS Country Office (UCO) and other relevant actors to facilitate common understanding of the country's needs, NASAs objectives to meet them, the NASA approach to be applied, or alternative resource tracking options which could be considered.
UNAIDS can provide inputs to, or participate in, the in-country steering committee meetings, if necessary and time allows.
UNAIDS team (at country, regional and global levels) will review of the consultants' inception report. This is usually submitted after the initial meetings of the consultants with the NAC and NASA Steering Committee and should demonstrate their understanding of the scope and approach.
UNAIDS will review and submit inputs to the draft programme for the initial capacity building and provide standardized training materials for countries. The experienced international NASA consultants should be able to provide adequate training.
UNAIDS will support quality control of the data capturing process to ensure correct application of NASA classifications and transactions, through: ▪ Initial review of the data collection plan and tools. ▪ Review of completed DCTs and RTT output files. ▪ Review of the consultants' response to UNAIDS review and the actions taken. ▪ Second review of the final set of DCTs and RTT files.

UNAIDS will review the draft Excel analysis file and slide deck of preliminary findings for early identification of gaps, errors and valuable additional analysis.
UNAIDS staff (country, regional and global levels) will undertake first review of the draft NASA report/briefs/outputs.
UNAIDS staff will again review the adjusted NASA report/outputs (including review of the consultants' responses to the initial review), and provide clearance of the final report.
UNAIDS resource tracking team can support dissemination meetings to distribute the findings to a broader audience in the country, and regionally, where relevant.
UNAIDS will publish the approved NASA report/products/database on the UNAIDS NASA portal.

Chapter 6: Applying Estimations and Assumptions in a NASA

Objective of this chapter

There are cases where some HIV expenditure data are not available, or are not labelled as such, and where assumptions have to be made. This chapter provides examples of where this may be the case and possible approaches, including costing techniques and others, that could be used to estimate HIV spending. Wherever such estimates are necessary, the approach, assumptions and limitations must be carefully explained in the report.

6.1. Introduction

As explained earlier, NASA collects actual expenditure records, not budgets or estimated expenditures. It attempts to collect the exact expenditures per intervention and cost item, rather than using distribution keys or assumptions, *to the extent possible*. However, there are specific instances where these expenditure details are not available, mostly in the public sector where integrated HIV services do not require disease labelled expenditures. For example, MoH salaries of primary health-care nurses providing a range of services in outpatient clinics, and other MoH operational costs that are not split by disease or service in the public accounting system. In these situations, there may be a need to estimate a share of the MoH salaries and operational costs that should be attributed to the delivery of HIV services to adequately reflect the public HIV spending. This section first explains the costing approach to be used in these and other situations, and then describes other estimation approaches for different scenarios.

6.2. Costing techniques to estimate actual past expenditure

Costing techniques are usually used to estimate what a service is currently costing, as well as projecting these into the future. They are critical for estimating future resource needs, which inform budgeting and resource mobilization. They can estimate the costs of delivering integrated services within the primary health space, and the attribution of personnel costs across those services. Typically, costing studies apply a top–down approach to allocating these shared costs between services, and these methods can be used in NASA, where necessary. Another approach is to use a time-driven allocation of resources between services, such as is used in the Activity-Based Costing-Management (ABC/M) approach. Additionally, costing studies typically use a price × quantity (P × Q) approach, which multiplies the unit cost of delivering one unit/intervention with the number of clients/patients using (anticipated to use) the service. If the NASA team cannot obtain expenditure records, use of the P × Q approach might be necessary—if a reasonable and recent unit cost is available as well as the number/volume of services provided (preferably by different service provider types using their different unit costs) in the NASA study year.

These techniques should be used carefully and logically, and all assumptions should be detailed and documented in the NASA report for validation by stakeholders. It is also important to understand the differences between costing methodologies and NASA expenditure tracking. For example, a costing study may use financial or economic costing, and may take the perspective of the service provider and/or societal perspective, while NASA generally collects financial data (not discounted) from the perspective of the service provider. However, the OOP payments made by clients and households can also be collected, but opportunity costs and the costs to the rest of society are not estimated. The NASA

team are encouraged to review the UNAIDS NSP Costing Guidelines for further detail on applying these techniques.

This section discusses the other options where assumptions are required for NASA and highlights some principles and terminology.

6.3. Accounting principles applicable to private sector service provision

There are situations where private-for-profit HIV services are paid for, either by individuals as out-of-pocket expenditures, or by heath insurances (either social health insurances or voluntary health insurances). Sometimes these can be extracted from expenditure reports and sometimes they need to be estimated, as described here.

A distinction should be made between the terms 'price' and 'cost'. Cost is the expense that a business incurs in producing a product or service and bringing it to market. Price is the amount a customer pays for that product or service.

The market price of a product or service represents the costs of production, distribution and marketing, usually including a profit margin. Providers of services can charge the client/customer their cost of producing the service and may include their profit margin (if they are a for-profit provider). Households/individuals usually pay out-of-pocket the full prices to market producers/service providers or sometimes pay reduced fees to non-profit organizations or subsidized (shared) costs at government facilities (unless they are provided entirely free to the client/patient). For every service provided, the cost to produce goods and services is fully paid or shared by the several financing agents (even if provided free to the client/patient). Thus, as in all accounting exercises, a clear distinction should be made between fees or tariff schedules, direct and indirect cost, prices and other valuation methods.

Valuing market (for-profit) production of HIV services – in order to estimate spending on private sector services, including those covered by social health insurances

Governments, private companies, or non-profit institutions, such as faith-based health-care providers, produce and provide HIV services—partly or wholly outside the market—and provide them at no cost or at a subsidized cost to clients/patients. Hospital services provided free of charge (or nearly free of charge) to the recipient in government or not for profit institutions would be valued, in NASA, as the cost to those organizations of producing the services. **In the case of private for-profit HIV providers** that operate in an unsubsidized fashion or are reimbursed by social health insurance schemes, consideration of their total revenues is a good starting point for estimating the total HIV spending attributed to them. The amount spent by the beneficiaries/patients indicates the value in monetary terms of the goods and services consumed.

Where expenditure on privately provided HIV services is being included in NASA, this may simply mean compiling information on the total amount of money paid for such goods or services at the point of final consumption (i.e. the total revenue for the HIV services received per annum). For example, if an unsubsidized (for-profit) private provider has gross revenues of 1000 monetary units from the sale of HIV services during the year of interest, this sum is added to the NASA data as OOP payments made by individuals accessing these private for-profit services. Because for-profit producers must cover all their expenses, including capital goods used as well as labour and all other recurrent inputs, the price paid by customers/clients, or reimbursed through social health insurance schemes, reasonably represents an all-in value, including some profit to the providers. Care should be taken to only capture the spending on HIV-related services.

Private for-profit hospitals (including those providing services under the national or social health insurance, or paid for by voluntary health insurances) usually have their own accounting system with 'costs centres' to which all costs are allocated, and include the patients' identification number, the disease type, episodes, health intervention and/or stage of disease. Every item, medicine, diagnostic, treatment, and staff salaries can therefore be attributed to specific illnesses and interventions. The HIV related spending, by service, can be easily extracted and coded correctly in the NASA transactions.

6.4. Applying allocation factors / keys to estimate the share of expenditures attributable to HIV services

In some cases, overhead and operational costs, personnel and infrastructure may be shared across different services or health interventions, such as a laboratory conducting tests for various diseases, a health-care worker addressing multiple health issues at a primary health clinic, or shared operational expenditures, such as rental, utilities, waste management, etc., across a facility.

For NASA, only a share of these types of expenses which can be attributed to HIV should be captured. The options for calculating proportional allocation keys/ split rules include the following:

Allocation rules based on activity type

Identify activities and services that serve both HIV specific and non-HIV objectives, such as health system strengthening, capacity building, or community-based health awareness activities. For each type, clear rules should specify which costs should be allocated to HIV and under what conditions.

Proportional allocation based on time, usage, or volume

Time-use allocation. For staff or services shared between HIV and other health services, time-use surveys or records of time allocation of staff are helpful to guide the split of personnel salaries. For instance, if a primary health-care worker spends 30% of their time on HIV services, then 30% of their salary and benefits would be allocated to the HIV services they provide. The other vectors should be selected accordingly, based on who pays for the service, where they were delivered and the specific interventions provided by the healthcare worker. If *mostly* related to ART, then the ASC should indicate ART not disaggregated either by age or by line of treatment, or for the prevention of vertical transmission of HIV. If uncertain, then assume they were HIV care and treatment services not disaggregated.

Service volume or usage allocation. For shared resources, such as diagnostic equipment, a proportional split could be based on usage frequency. Laboratories often perform a range of diagnostic tests, and shared equipment, reagents and personnel costs can be partially allocated to HIV. The laboratory will maintain records of all HIV-related tests performed and these, as a share of the total tests conducted, can provide the allocation factor to apply to the salary and reagent costs. Any costs directly attributable to HIV, such as HIV test kits or self-test kits, must be fully attributed to HIV. Additionally, HIV-specific equipment (capital) investments should be captured as a full financial cost, in the year of purchase, as explained in the methodology section.

As another example, procurement, shipping, transportation, warehousing, distribution and logistics may serve multiple health programmes and products, and the NASA team should allocate only the relevant share of these costs to HIV based on discussions with the procuring agencies and central stores. An allocative factor could be based on the space used (volume) of HIV stocks in the warehouse/stores, or as a share of their procurement price out of the total procurement price. Further disaggregation into specific services for which the commodities are used would be necessary (to ensure use of the correct ASC code).

Utilization data or patient load. For facilities or support services, shared operational costs (utilities, rent, cleaning, etc.) should be allocated based on the relative number of patients seeking HIV services versus those seeking other services. For example, the percentage of HIV outpatient visits at a primary health-care facility out of the total number of outpatient visits in each study year could be used to split the operational costs of facilities between HIV and all other services.

6.5. Extrapolating public HIV expenditure from facility level to national level

NASA requires the total public spending on HIV in the entire country, across all facilities and regions. Once the HIV personnel spending and other shared operational costs at specific facility types have been identified or estimated, as described above, they must be extrapolated (applied) to all the other similar public facilities that provide HIV services in the country.

Box 6.1:
Estimating government personnel costs for HIV programmes

Human resources are one of the most significant shared costs, as government personnel may provide a mix of health services, including HIV care, prevention and testing, but the salary expenditure data are not split across all the functions they perform. Estimating the government human resources costs that contribute directly or indirectly to HIV-related activities involves several key steps:

(1) *Identifying relevant personnel.* Start by identifying all categories/cadres of public-sector employees involved in HIV services, such as doctors, nurses, counsellors, outreach workers and laboratory technicians at *the different levels of care*: hospital, primary health-care clinics, etc.

(2) *Identifying their HIV-related activities.* For each relevant personnel category/cadre, determine the specific HIV-related tasks they perform. Activities might include HIV testing, counselling, ART management, patient follow-ups, outreach and reporting for national HIV statistics. Note that the activities will vary depending on the level of the health facility.

(3) *Estimating time allocation.* Assess the proportion of time each category of personnel spends on HIV activities, and as a share of all their time which might be spent on non-HIV activities. This can be done through a time in motion study, an ABC/M study, or simply by interviewing the different staff providing the services and asking them to indicate the split of their time between their various activities. These studies should collect the time allocations of the cadres across the levels of care (since hospital staff will have different activities, and time spent on them, compared with staff at primary health-care facilities).

(4) *Calculating annual salaries and benefits.* Obtain the average salary and benefits information for each category of personnel from government sources; note that these will vary depending on their location and type of health-care facility. Calculate the annual cost per employee in each category, including salary, benefits and any additional compensation relevant to their role.

(5) *Applying the proportion of HIV related time.* Multiply each employee's total annual cost by the proportion of time they spend on HIV related activities. For example, if a nurse spends 20% of their time on HIV services and their annual cost is $10 000, the HIV attributable cost would be $2000; then split this across the types of HIV services they perform, e.g. 20% to HIV testing and 80% to ART services.

(6) *Extrapolating costs across facilities and regions.* Apply the relevant allocation keys (developed in previous steps) to the relevant cadre, by their facility level, to the public personnel expenditure, *by cadre and by facility type*. Sum the individual costs across all personnel categories and across various health facilities that *provide HIV services*, and across all regions. This should rely on the public personnel records to provide the numbers of cadres at each level of service (hospital, primary health care clinics, etc.), and applying the same proportional share of their salaries to HIV services. Not all the high level/senior management personnel costs should be shared—only include senior HIV manager costs and add these to the estimated direct service delivery salary costs for HIV.

(7) *Adjusting for consistency and validation*. Validate estimates by comparing them with other data sources (e.g. health information systems, regional HIV programme budgets, national health accounts) to ensure consistency, validity and logicality (within the correct order of magnitude/ ballpark).

(8) *Capturing these estimated expenditures in the NASA format.* Once calculations are complete, recreate the transactions with all the relevant NASA categories, ensuring that they align with the vector classification requirements.

(9) *Recording all assumptions and calculations.* Provide details of the sources of data used, including time-use studies, service usage rates, or specific ratios (e.g. the percentage of HIV related patient visits in a general facility).

Refer to UNAIDS NSP Costing Guidelines, and many other resources describing costing approaches for deeper insights into the steps outlined here.

Logical/rational costing techniques should be applied based on the number of facilities by type, personnel numbers by cadre, updated salary scales (as were used in each NASA study year) and weighted by HIV patient visits per facility, if available. These aggregated shared (proportional) HIV costs are then added to the direct HIV costs incurred by the government, such as total spending on ARVs,

HIV test kits, condoms, etc., to provide a total picture of public expenditure in the country. These guidelines do not provide in-depth coverage of this aspect, which is covered thoroughly in other costing guidelines, such as the UNAIDS NSP Costing Guidelines[3] – all NASA practitioners are encouraged to read those guidelines.

6.6. Measuring or estimating out-of-pocket expenditures

For out-of-pocket (OOP) expenditures/payments, it is typically necessary to conduct a representative household (or patient exit) survey. This should include a statistically representative sample from which the total spending by the entire population on HIV services and goods can be extrapolated. For collecting the OOP spending by key populations, additional efforts might be required to locate and include them adequately in the sample. Information on both the direct and indirect costs of respondents to access their HIV services should be included, which would include transport costs, but not the opportunity costs of time in accessing the services. These surveys require ethical institutional review board (IRB) ethical approval, with detailed protocols, well developed questionnaires/interview schedules, informed consent procedures, and confidentiality and personal data protection. In addition, data collection will usually require a large, well trained team of data collectors. Consequently, these surveys demand significant time, survey research skills and resources for the primary data collection teams. Given these requirements, it is generally not feasible to carry out these large scale surveys at the same time as the NASA. However, should the country team opt for such a survey, they should seek the support of the national bureau of statistics and a university research team that normally conduct such national household surveys. HIV-related spending questions could also be added to the routine health and demographic surveys that collect household health-related spending.

Some countries have opted to undertake small scale studies with a small sample of the target population, or focusing on members of key populations, to determine their HIV-related OOP payments. However, any study, even small, that involves human subjects and collects their personal information, must go through the ethical approval process. Additionally, large assumptions will have to be made in extrapolating the findings from a small, non-representative sample to the entire population, and hence the limitations and uncertainty of these estimates must be understood and explained in the NASA report.

Therefore, alternative sources of secondary data on OOP expenditure might be considered. One source of information may be the national health accounts' estimate of household health spending. The health accounts may provide this OOP estimation split by disease (for the HIV OOP spending), noting that it would not usually include the patients' transportation costs. The NASA team should also ask for additional detail on the assumptions applied in the disease split by the health accounts team, which might need adjusting. For example, in countries where public HIV treatment services are provided free to clients accessing public health services , their HIV OOP spending would be far less than for patients receiving other public health services which are not as heavily subsidized. This would need to be accommodated in the adjustment/estimates of HIV related OOP spending. If the health accounts report provides the total OOP expenditure on health, without any disease split, then some portion could be estimated to be HIV related, based on rational assumptions and applying statistics of disease burden, demand by service type (e.g. HIV services are now mostly outpatient), and other influencing factors.

Other possible sources for OOP payments are the population surveys on household spending, such as the 'household income and expenditure survey', the 'demographic health survey', the 'household budget survey', the 'health status and health service consumption survey', or similar sources. The drawback of those surveys is that in general they report the total OOP expenses of the households on all their health care needs without separating HIV-related spending. Again, an assumption-based proportion would need to be calculated that could be attributed to HIV (this would need consultations with relevant persons in-country). Also, the unit of observation in these surveys is usually the 'household', not the 'individual', while HIV service use refers to individuals, not households.

In countries where OOP expenditure on HIV services is thought to be a significant, or growing, amount, the NASA Steering Committee should first attempt to identify available and valid secondary data from which reasonable estimates can be made. For example, health insurance companies would have detailed information on members' shortfall (OOP) payments made for their HIV-related services and

[3] Practical methods for projecting the costs of national strategic plans for HIV and beyond | UNAIDS

these should be collected and included in the NASA, although they would only represent the portion of the population with health insurance coverage. If primary data collection is still required, the Steering Committee should seek advice and support from the national entities that usually undertake representative surveys, calculate the time and resources required, and mobilize sufficient funding for the survey.

6.7. Estimation errors and limitations

The quality of the NASA results might be affected by the amount and quality of any estimates that were used in the study. Although the use of estimates and assumptions in the allocation of costs to HIV and between services and production factors is sometimes necessary, this should only be done in the absence of directly allocable spending, or in cases where the cost of collecting actual spending far outweighs the benefits. Using estimates and assumptions in this way does not undermine the quality of the NASA analysis, when the estimates are undertaken correctly, with the latest available data, and are explained in the report, along with their limitations.

Limitations and errors in the estimation techniques can be minimized by selecting the most logical and rational estimation approach, while using the best available secondary data to inform the allocative factors (distribution keys).

Common types of measurement and estimation errors include the following:

- When applying allocation factors (shares) to the total expenditure of an organization or service provider, to be apportioned between interventions (ASCs) and BPs. Such estimations should not affect the total expenditure of the organization, but if incorrect, might give the wrong picture of their intended priorities and beneficiaries.

- When using a costing approach (P × Q) to estimate the total spending on a particular intervention (where the actual expenditure records were not available), the estimation could be undermined by using incorrect quantities of the service provided or people reached, or the incorrect unit price (or cost) to deliver the service. The most accurate and recent market price should be obtained. While an error in the latter might be small, when multiplied by a high coverage (at national level), this error can be magnified and can distort the accuracy of the assessment.

- Limited, or outdated, secondary data or utilization rates, will undermine the efforts to accurately estimate shared costs. After efforts to improve these, including discussions with the NASA Steering Committee, any remaining limitations must be explained in the NASA report.

- Existing data on OOP payments for HIV are generally scarce and hence relying on existing health spending surveys or the health accounts OOP estimates must be cautiously applied to HIV specifically, bearing in mind that HIV patients may not pay similar amounts as patients accessing other health services. If using the health accounts data, their underlying assumptions and disease distribution keys (if available) should be closely examined and adjusted if necessary.

- Different health system structures and levels of care will incur different operational costs, and thus must be taken into account in weighting different care costs more accurately to HIV, rather than applying an average cost across all levels of care and types of services.

The NASA resource tracking team should strive to minimize these estimation errors by using the best possible source of secondary data, including interviews with key informants with the experience to make a good subjective judgment, and either validate or correct the estimation.

6.8. Validate and document estimations methodology and assumptions

For transparency, consensus building and replicability, it is important to present your estimations to the NASA steering committee and broader stakeholders at the NASA validation meeting. Explain your methods, logic and data sources in undertaking these estimates, and facilitate discussion to reach agreement on your approach, or undertake the changes suggested. There may be some pressure, or necessity, to over-estimate the share of public resources being spent on integrated HIV services. It is important to try to reach consensus on a logical approach that can be justified and repeated in following years, and if the NASA team feels this is not being suggested, they should discuss it with the UNAIDS Country Director or Global Centre for advice and support. However, ultimately, the NASA is a government-owned process, and thus the NASA Steering Committee should give final approval on the approach to be applied. Once the agreement has been reached, the NASA team must document all estimations, assumptions and costing techniques used in the NASA and why they were necessary. This includes noting any estimates, data sources, or proxy indicators applied and how these were extrapolated to the total country costs.

In summary, when spending data are not available or are integrated in general health expenditure reports, and estimations have to be made, NASA can carefully use the possible estimation techniques described above for various scenarios. Documenting any estimation techniques used, as well as describing the possible measurement errors, are imperative in ascertaining and ensuring the quality of the NASA resource tracking exercise.

Chapter 7: Data for Impact: Analysing and Interpreting Financial Data

Objectives of this chapter

In order to answer critical policy questions and inform key programme and allocative decisions, this chapter provides guidance for the analysis, interpretation and presentation of NASA data to ensure their optimal utilization and impact. Although each country may have additional questions to be answered, which must be incorporated, the core analysis suggested here should be included in all NASA reports for comparability and standardization.

7.1. Analysis and interpretation of NASA data: answering key policy questions

The purpose of NASA is to provide data to answer the country's questions regarding the financing of their HIV response. The rich financial data collected by the NASA team should be analysed and presented in a way that answers these questions and provides insights into the characteristics of the financial landscape, time trends and prioritization and efficiencies in allocation and use. The NASA vectors describe these different aspects and when coupled with additional data (such as epidemiological and performance indicators), can describe attributes of the financial response, such as technical efficiency, absorption rates, optimal impact and value for money, which can then be explored with further examination.

7.2. Initial quality checks of preliminary analysis outputs

Data should first be analysed by assessing and interpreting the information contained in each NASA vector and bivariate matrix. When generating all the possible bi/trivariate matrices, either using pivot tables or the RTT report function (FE × SCH, FE × FAP, FE × ASC, FAP × PS, etc.), the totals in all these matrices should be the same. Where they are not the same, it means some transactions do not have all the vectors completely and correctly coded. It is important to carry out thorough and continuous quality checks (as described in the previous chapters), reviewing the logic, completeness, reasonableness and coherence of the data and preliminary results. The total HIV expenditure should be compared with the country's gross domestic product (GDP), national health expenditure, country population and the number of people living with HIV (calculate the overall spending for people living with HIV per annum). Consider whether the proportional (%) amounts between categories appear reasonable, if totals are in the correct ballpark, for example, when compared to public HIV budgets, PEPFAR COP allocations and the final (negotiated) Global Fund grant annual budgets. If subregional (district)/provincial/state) data have been collected, analyse the key vectors according to geographical location and calculate the per capita spending per region. Any outliers or anomalies in these initial calculations should be carefully checked for errors, additional information collected to validate or correct these, and the necessary adjustments made.

7.3. Addressing key policy questions through the analysis of each NASA vector

As discussed in the introduction (section 1.3) a NASA is undertaken to answer specific policy questions (examples provided below) and thus guide allocative decisions. Thus the analysis and narrative should attempt to answer these questions, using the spending per vector and combinations thereof, starting with the high level total spend, e.g. total amounts of spending by FE, REV, SCH, FAP and PS, and then move to the details of the programme areas, the sub-activities, their service delivery modalities, beneficiaries and production factors. Prepare pivot tables, summary tables for the reports, and graphs that best display the key points and messages, taking care to correctly interpret the figures and explain their meaning. See the generic report structure, tables and figures suggested in the NASA Toolkit in the annex to give an indication of the flow, data and interpretation to provide.

The following questions and attributes should be answered with graphics, tables and narrative (but not be limited to those):

- *Total spending on HIV in the study years and its architecture.* From which financing entities and revenues, via which schemes and managed by which financing agents and purchasers? Are funds being pooled strategically? Are financing schemes allowing for optimal access of citizens to their services? Which agencies direct the response (FAP)?

- *Sustainability of the HIV response and its reliance on external funding.* What percentage of interventions were funded by specific financing entities? Has the government's contribution grown over time, with an increasing range of diverse financing options? Have domestic funding sources been consistently and completely captured (or perhaps underestimated), and alternative/innovative funding options been explored?

- *Trends over time.* If previous years of NASA data are available and comparable, the presentation of totals per funding source can provide useful insights into historical spending patterns, as well indicate possible future projections*. These can often illustrate key policy changes and can be linked to reductions in new HIV infections and mortalities (such as increased spending on ART over time could be attributed to reducing HIV infections and deaths). However, when interpreting any changes over time, it is important to consider and present the economic and other situational factors that may have contributed to the situation. For example, during the COVID-19 pandemic, ART patients may not have been accessing their medicines due to reduced facility visits, but it would be misleading to conclude that the reduced ART spending was the primary cause of the increasing mortality.

- *Longer term impact of the HIV spending.* Where time–trend NASA data exist, mapping these against the country's epidemiological data over the period to reflect the impact of past investments. The impact of future investments could also be modelled, using OPTIMA or GOALS models.

- *Adequacy of past HIV funding to achieve the NSP goals.* Does the comparison of past expenditure with the estimated resources needed in the same period show potential funding shortfalls, and gaps for specific interventions? How did actual performance compare with the NSP targets? Did funding shortfalls limit their achievement, or were these achieved despite possible gaps (indicating some efficiencies or savings)?

* In time–trend analyses, it is also important to consider whether the expenditures need to be adjusted for inflation. In countries with hyperinflation, this is advisable, in order to display the real value of amounts spent. A base year must be selected (the comparator) and then the amounts in future years must be deflated using the correct methods. The annual conversion of local currency to the United States dollar can compensate for some hyperinflation, but may not reflect any reducing purchasing power of the dollar. On the other hand, stakeholders may not recognize their expenditures after adjusting for inflation and this might cause confusion or misinterpretation. Discussion with the NASA Steering Committee is required to determine the appropriate presentation.

- *Allocative efficiency.* Was an optimal mix of spending per intervention achieved (ASC analysis)? Which interventions have been prioritized and provided by which implementers? Are they aligned to the national strategic priorities, and focusing on those interventions with proven impact? Have there been adjustments in spending to achieve allocative efficiencies and to achieve the national targets?

- For a simple examination of the allocative efficiency (a measure of whether the spending was targeted towards the correct interventions), the proportional HIV expenditures per intervention can be compared with their estimated resources needed in those years (either obtained from the NSP cost estimates or investment case, if undertaken). While a somewhat crude measure, the proportional comparison will indicate if the correct, or optimal mix, or spending was in line with the anticipated need and priorities, as laid out in the NSP costing, or HIV investment case.

- *Fund utilization/budget execution and absorptive capacity.* Have the available funds been absorbed optimally when compared with public budgets and donor commitments (such as PEPFAR's country operational plan and budget and Global Fund approved grant allocations)?

- *Future funding landscape and financial gap analysis* (where future commitments and budgets are compared with future NSP costs). NASA teams are encouraged to generate the funding landscape tables (FLTs) used in the Global Fund funding requests, which require the additional collection of future funding commitments: PEPFAR COP allocation for one year and future projections (with guidance from the PEPFAR agencies), the annual budget for the remaining years of the current Global Fund grant cycle, the public budgetary HIV allocations for three years (if the medium term expenditure framework if used, or only one year if not), and the budgets of any other key funder. These can be compared with the NSP cost estimates for future years, and the potential funding gap calculated. Completing the FLT takes a little more effort, but adds great value to the NASA process, contributes to the sustainability planning and provides important evidence for the country's resource mobilization efforts (not only for Global Fund funding requests).

- *Beneficiary and equity analysis.* Who is benefiting from the spending on HIV services (BP analysis)? Are key populations receiving adequate funding? Is there equity in the targeting of HIV funds, according to need (linking to epidemiological data)? Is there equitable geographical distribution of resources, shown through the regional/provincial/district spending for people living with HIV, that reflects the burden of HIV infections per geographical area?

- *Service providers and service delivery modalities.* What are the main types of service providers, per programme area, and are a range of delivery modalities being used with efficiency gains? Do units of expenditure on specific interventions vary by modality type? Are community-led responses (CLR) achieving greater coverage, especially of difficult to reach and key populations? CLR programmatic data need to be collected during the primary data collection process of a NASA-plus which requires additional days for the CLOs. Refer to UNAIDS materials on resource tracking for the CLR (NASA+).

- *Technical efficiencies, units of expenditure and benchmarking.* Compared with the performance indicators, what were the programme outputs/achievements for the spending (using M&E data)? What were the units of expenditure for specific interventions (where spending is divided by the correct output units), such as the annual cost per person on ART? Have the units of expenditure changed over time? Have economies of scale been achieved, could further price reductions be negotiated based on volumes? Were the units of expenditure reasonable when compared with the units of expenditure in other countries in the region and with global prices? Is there scope for improving efficiencies and achieving greater value for money?

- *Cost drivers of HIV interventions.* Examining the composition of the spending according to the PFs, in total, for specific interventions and per output? What were the key cost drivers? Is there scope for improved technical efficiencies through reduced prices, management costs, procurement streamlining, etc.? For example, was the average spending on ARVs per person on

ART comparable with negotiated prices through pooled procurement mechanisms? Can the country explore/optimize reduced prices?

7.4. Examples of strategic insights and interpretation considerations

As explained above, the analysis and presentation of the NASA data should paint the funding landscape picture and the narrative provide additional insights. Careful interpretation is required, taking into account contextual and programmatic information, to ensure the correct messaging to inform relevant decisions and policy changes. The following notes and figures provide some examples of some of the possible questions to be answered:

- *Examples of financial gap analysis (FGA).* For the NASA years being studied, the HIV expenditures should be compared with the estimated resources needed in those years, usually obtained from the NSP cost estimates (if these were undertaken). The comparisons should be made between the totals, the programme areas and by each activity, where the estimated amounts needed are subtracted from the NASA expenditures, to calculate the funding gap (negative balance) or surplus (positive balance) in the years of assessment. It is important to align (match) the intervention categories as closely as possible (between NASA's interventions and the NSP interventions) for valid comparison and to explore reasons for large variances. For example, if it looks like there was underspending on ART, but the targeted numbers of people on treatment were still achieved, then it may be that the ARV unit cost used in costing the NSP is outdated and has subsequently reduced significantly. Thus, the estimated cost would have been too high while NASA reflects the more realistic and reduced unit price of the ARVs. Another aspect to consider is whether some ARV stocks were bought in one year but only distributed and consumed in the following year, which would show fluctuations in the units of expenditure over the period. Thus results should be interpreted with care, and a supposed 'funding shortfall' does not necessarily mean that inadequate funds were spent on ART, but rather that efficiencies and savings had been achieved and targets still met.

  It should also be noted that a simple comparison of total spending versus total resource needs will show the sum of all the profit and losses per intervention, and before drawing conclusions on the total profit or loss, the analyst should undertake a more disaggregated FGA by intervention to understand any key interventions at risk of being underfunded. Figure 7.1 shows the overall gap, while Figure 7.2 shows the possible shortfall specifically for the treatment and care programme, which formed a large portion of the total gap.

- Time trend and epidemiological outcomes. Linking long term HIV spending with epidemiological indicators, such as new HIV infections, HIV prevalence, numbers on treatment and HIV-related deaths can be impactful in showing the return on HIV investments. (Figure 7.4).

In many countries where the ART programme consumes a large portion of the resources needed and spent, any gap for ART will hide other smaller, but critical, shortfalls in other prioritized interventions. Figure 7.3 provides a more nuanced analysis, with relative (proportion) intervention gaps compared to their need. This helps programme and budgetary managers prioritize where to direct limited resources. Such an analysis requires a well-costed NSP with intervention details, targets and unit costs used to ensure valid comparison and explanation for potential variances.

Figure 7.1. Total spending compared with total resources needed for the NSP

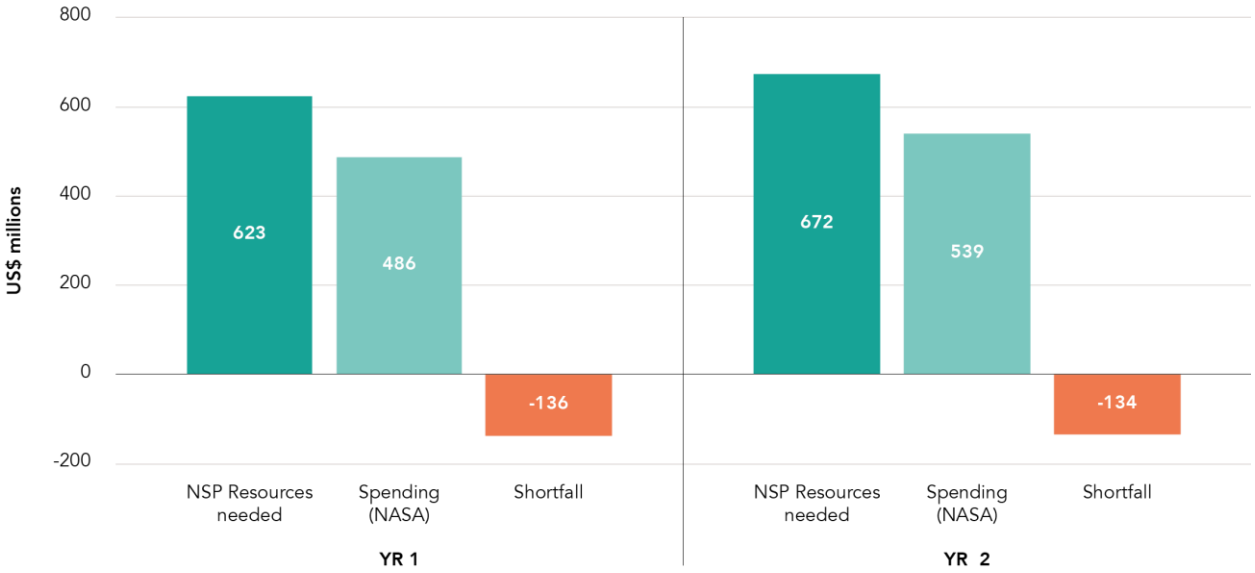


Figure 7.2. Spending on HIV treatment and care compared with resources needed to achieve treatment target coverage

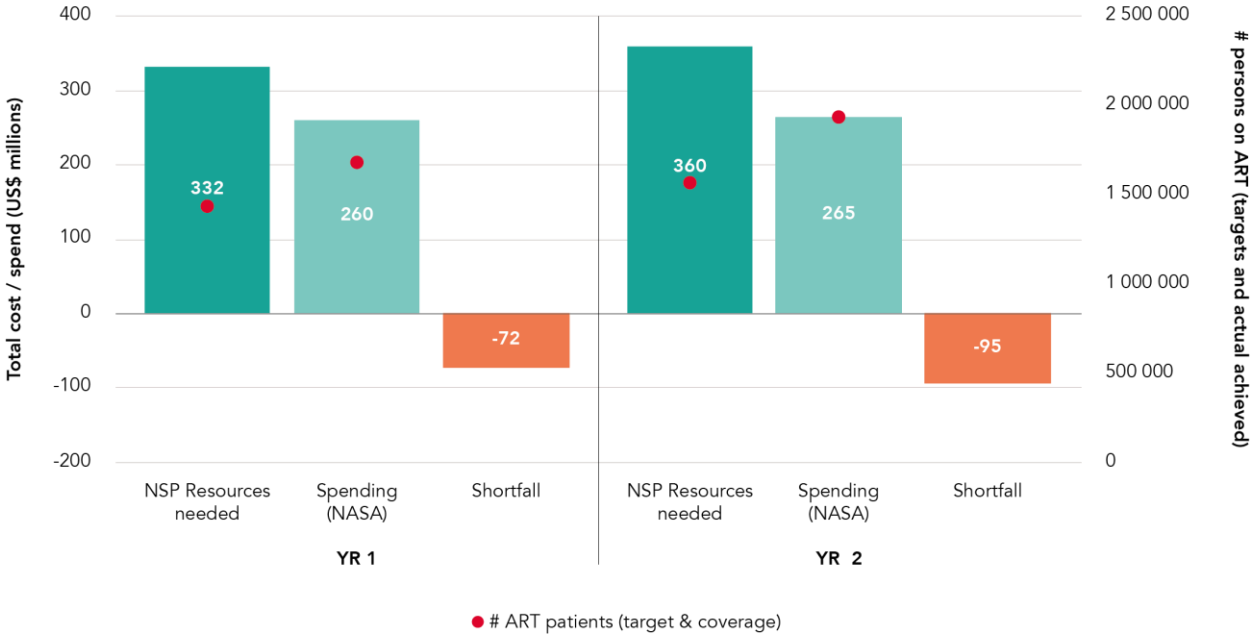
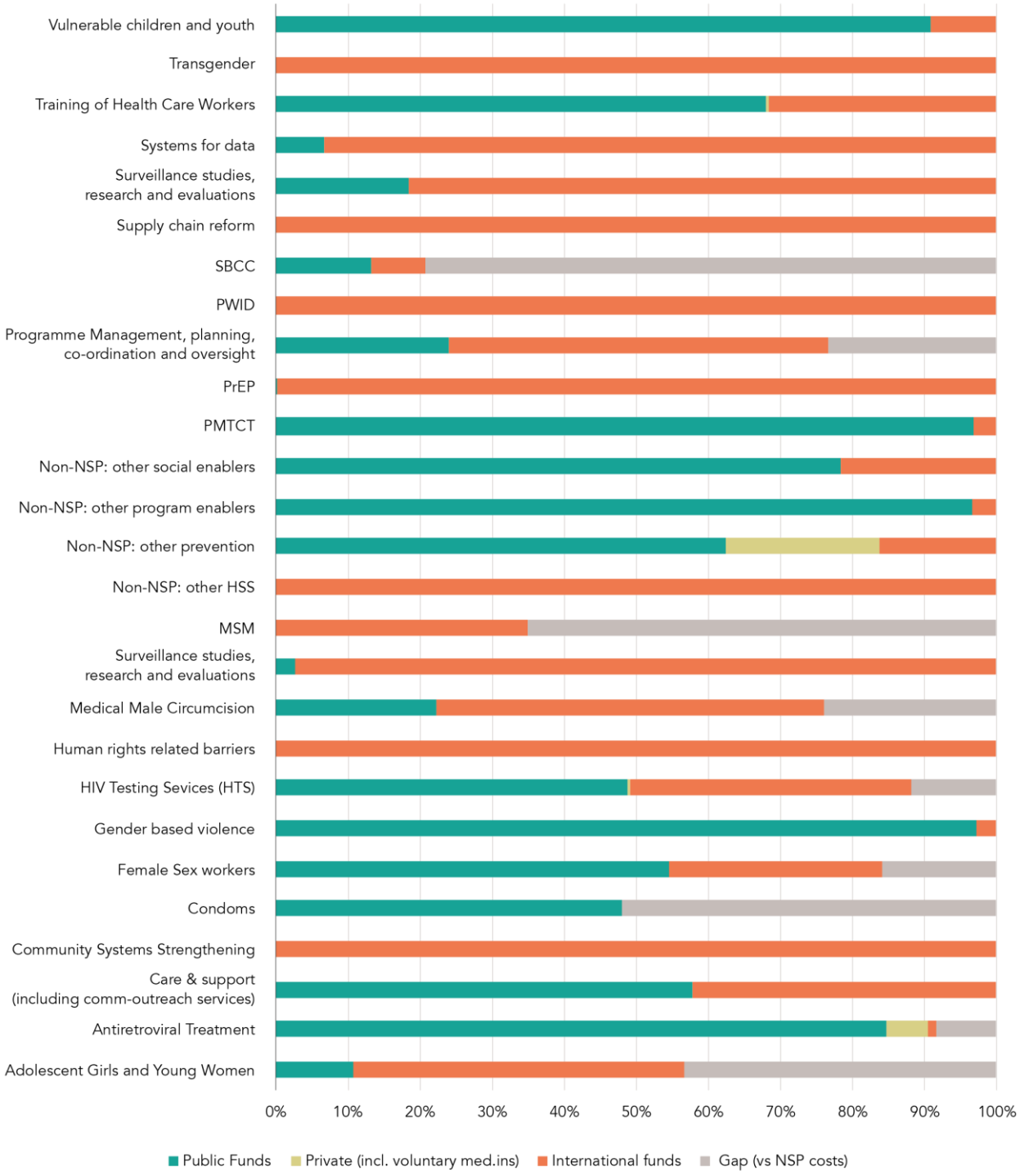
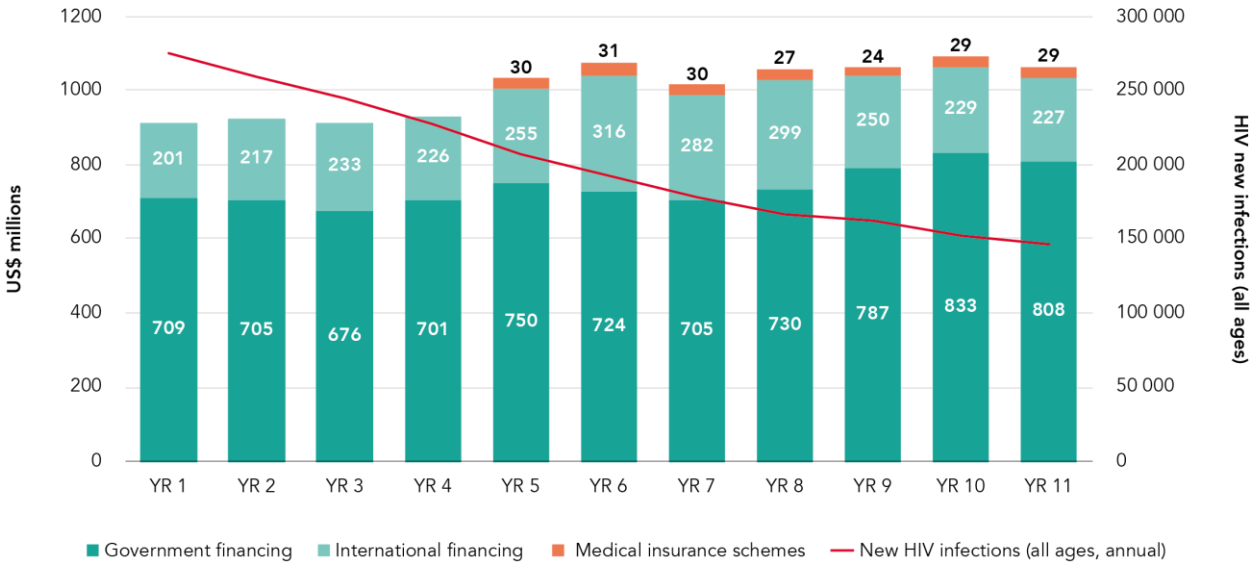


Figure 7.3. NSP intervention funding by FEs and their relative funding gaps



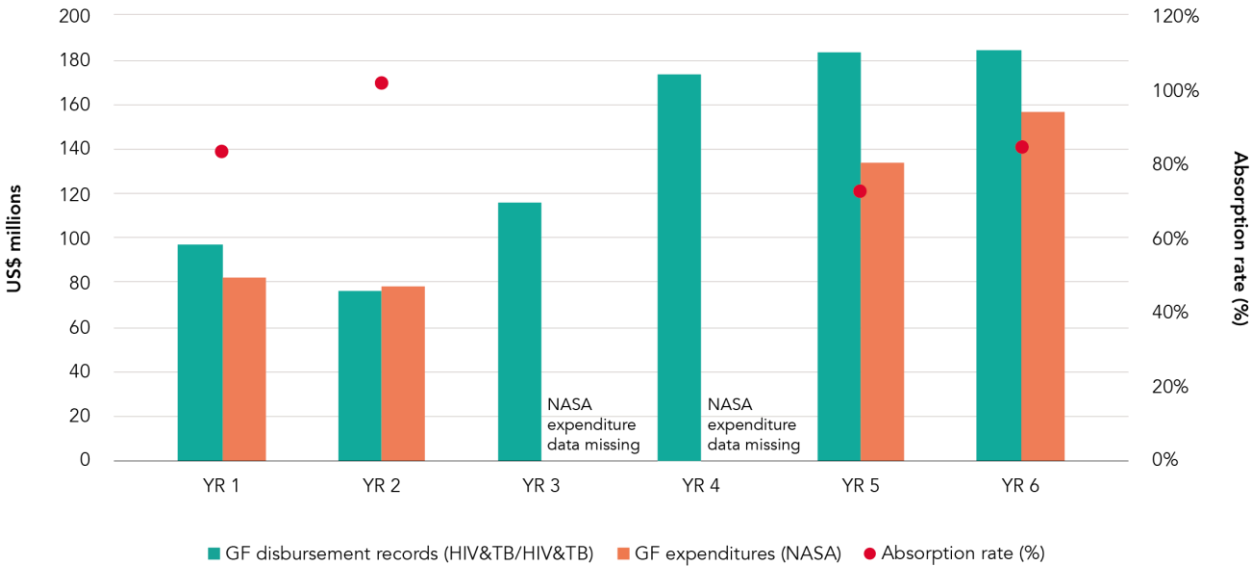
(PMTCT: Prevention of vertical transmission of HIV, PWID: people who inject drugs, MSM: gay men and other men who have sex with men, PrEP: pre-exposure prophylaxis, VMMC: voluntary medical male circumcision).

Figure 7.4. Trends in HIV spending and its impact on HIV new infections



- *Fund utilization and absorptive capacity.* The NASA teams should compare the NASA expenditures with the budgeted/allocated/committed/distributed amounts for the same year/s (as the NASA assessment years) by the FE (government, PEPFAR and Global Fund), if these data are available. The PEPFAR COP budgets are easily available on-line (https://data.pepfar.gov/datasets#FMD), and the Global Fund grant budgets can be obtained in-country or on their data portal (https://data.theglobalfund.org/). The NASA team should request these when requesting the PRs' expenditure reports. This analysis will highlight where underspending might require further exploration and attention.

Figure 7.5. Absorption of Global Fund grants over time



For additional value, the team should consider adding a table of *future* budgets/commitments of the government (if an HIV budget exists), PEPFAR COP commitments and Global Fund grant allocations (Figure 7.5). These data will be valuable to countries for their future sustainability planning and can presented as an FLT, as required for funding applications to the Global Fund.

- *Examples of technical efficiency analysis using units of expenditure.* The NASA team can calculate the units of expenditure for *specific* interventions (ART, HIV testing and counselling (HTC), voluntary medical male circumcision (VMMC), key populations and PrEP) by dividing the spending per annum on each intervention by the actual numbers reached in those years and, if possible, per subnational region. The latter can explore whether spending per person per region has been equitable, matching need and burden of disease, and reflects adequate investments in the harder to reach, or sparsely populated, regions. The breakdown of the units of expenditure by their cost components (PF) will show cost drivers, highlighting potential inefficiencies. For example, if the average spend on the drug component (ARVs) of the total spending on ART per person is above the regional price of ARVs or the Global Fund's negotiated price, then the country can examine the reasons for this in greater detail to explore where savings might be made. If the unit of expenditure per intervention per annum is mapped against the intervention's outputs, or reach per annum, over a time period, it can illustrate where economies of scale have been achieved (or not) through increasing volumes. The units of expenditure could be compared with unit costs used in the NSP costing (if comparable) to show savings or surplus spending, and the impact of reduced prices. In the example of ART unit of expenditure shown in Figures 7.6(a and b), the reduced average spending on ARVs shows that the NSP targeted number of ART patients was surpassed, with less funding than anticipated in the NSP costing. In comparison, the VMMC unit of expenditure shows increasing personnel and other facility recurrent costs per circumcision as the volume of circumcisions went down (over the COVID-19 lockdown period when demand fell dramatically).

Figure 7.6.a. Examples of units of expenditure showing technical efficiencies: *ART spend per person on ART per year*

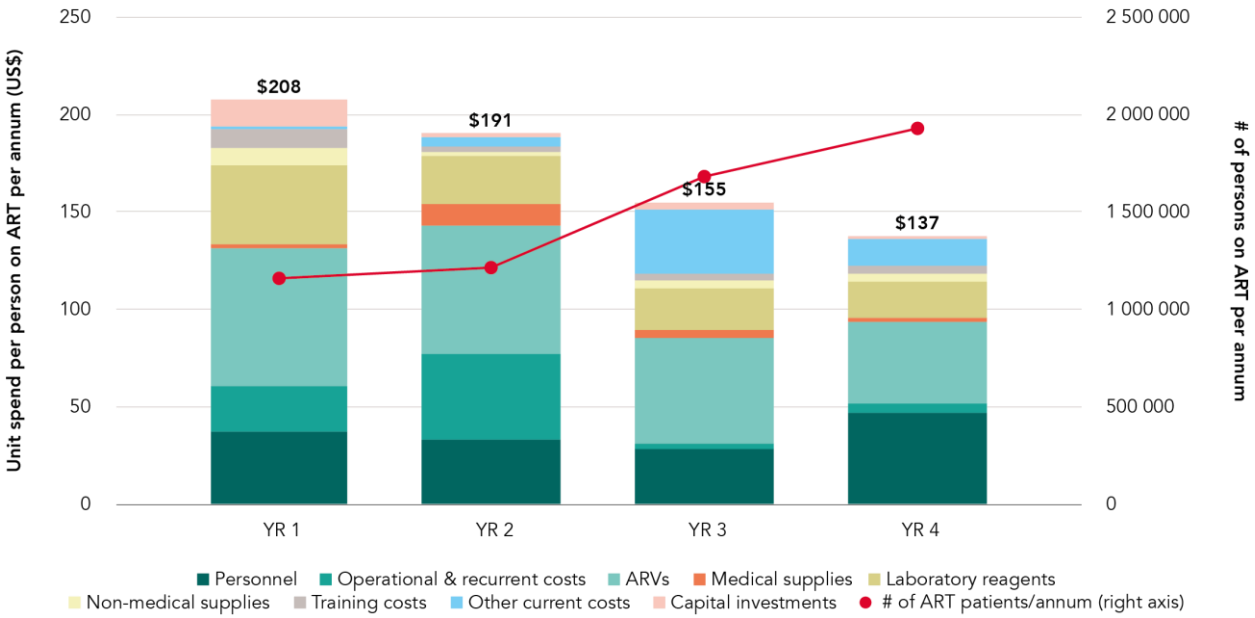
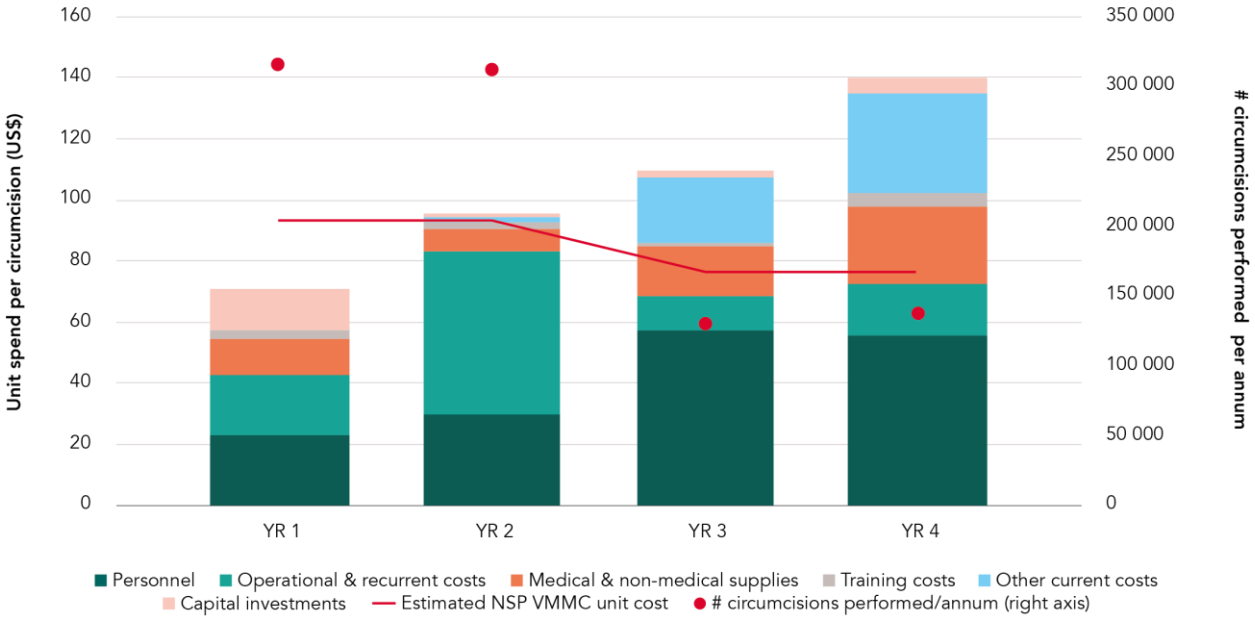
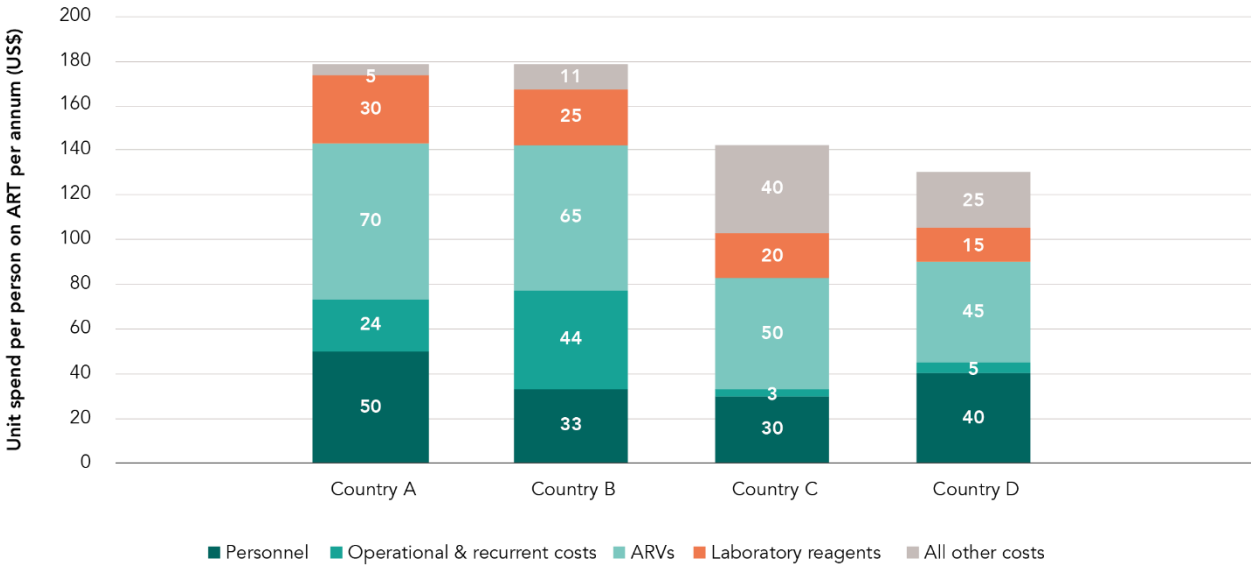


Figure 7.6.b. Examples of units of expenditure showing technical inefficiencies: *VMMC spend per circumcision*



- *Greater granularity of data collected on the ARV regimens.* The volumes distributed and their prices would be valuable and assist the country in completing their GAM 8.2 report. This indicator measures the average unit prices of ARV regimens for a country's HIV programme and the associated procurement volume. These data can be obtained from the central medical stores or procurement agencies.

Figure 7.7. Example of regional benchmarking: comparison of ART spending per person on ART



- *Examples of benchmarking and comparisons:* In order to validate the reasonableness of the NASA figures, check for outliers and identify potential inefficiencies, and add value to the NASA

report by benchmarking (comparing) units of expenditure with other country level as well as regional indicators and prices. These data could be obtained from NASA reports from other countries in the region, the WHO Global Health Expenditure Database (GHED) and the repository of GAM financial data (https://hivfinancial.unaids.org/hivfinancialdashboards.html#).

In addition to the above types of analysis, the following are useful comparisons and benchmarking:

- Total HIV spending as a percentage of a country's GDP.
- Public HIV spending as a percentage of a country's total public expenditure.
- Health-related HIV spending as a percentage of total health expenditure.
- Per capita HIV spending (US$) compared to other countries in the region.
- Per capita HIV spending (US$) compared across provinces/districts (subnational areas).
- ART spending per person on ART compared to other countries in the region (see example below).
- ARV (medicines only) spending per person on ART compared to ARV commodity prices available via Global Fund, Clinton Foundation or other pooled procurement options.
- VMMC spending per circumcision compared to other countries in the region.
- Provincial/district (subnational) units of expenditure comparison (for specific interventions) which can highlight potential inefficiencies between subnational areas.
- If ART services are provided in hospitals (or standalone facilities), as well as in primary health care clinics, a comparison on the units of expenditure per level of care (if the numbers serviced per level of care are available) would be useful to show efficiencies gained through integrated primary health care services.

In conclusion, the NASA team and Steering Committee are encouraged to brainstorm together on the types of additional analysis that would be required beyond the usual, straight-forward, NASA vector analysis. Matching the NASA expenditure data with other data sets (SPECTRUM, OPTIMA, programmatic and M&E data, budgets, NSP costs, etc.) will add value to the analysis, and creative graphics and visuals will help to convey messages effectively, while sound, contextual interpretation remain essential.

Chapter 8: NASA Outputs and Dissemination - Ensuring Utilization and Impact

Objectives of this chapter

This chapter provides guidance on optimal outputs of the NASA assessment to ensure the quality, utilization and impact of the findings.

While a typical NASA report is suggested with the additional analysis as described in the Chapter 7, the country's NASA Steering Committee is encouraged to consider a wider range of outputs that target specific audiences to inform key policy and budgetary choices. The aim is to not only enhance the quality and comparability of reported information across countries, but to also facilitate the adoption of evidence-based recommendations, improved utilization of available resources, mobilization of additional funding, thereby leading to the sustainability of an effective HIV response.

Countries are encouraged to track how the past NASA findings have influenced policy decisions and financing for HIV and their outcomes.

8.1. Presentation of data to answer key policy questions for different audiences

The NASA Steering Committee should consider the key NASA findings, their recommendations and applicability, or importance, to specific audiences. The typical NASA report will provide all the in-depth findings as well as the methodological descriptions, but certain audiences will not benefit from this usually long report. Additional products include policy briefs which answer specific policy questions, factsheets, slide decks or interactive data dashboards (which must be maintained and updated routinely). Refer to the suggested NASA report outline and additional products (NASA Toolkit). The following highlights aspects of these.

8.2. Minimum contents of a NASA report

At a minimum, a NASA report should contain background information on the country's health and HIV situation, the methodology used to undertake the study (including any assumptions and estimations that had to be used for certain expenditures, such as shared MoH costs for delivering integrated HIV services), the results of the assessment and key recommendations flowing from the study findings.

Background information

The background section should be relevant to the NASA data, giving the reader of the report an appreciation of the environment within which HIV spending took place. This section should clearly spell out the justification for the study, its objectives and scope. It should provide indicators on the socioeconomic situation of the country, the health and HIV situation and the country's response (e.g. NSP and cost estimates), as well as the main programmatic progress and achievements to date. Relevant information on health financing can be included (if possible, the most recent health account findings) and previous HIV resource tracking findings (such as indicators that have a bearing on the

HIV spending such as total health budgets, per capita health expenditure, the HIV treatment coverage rates and outcomes, as well as other contextual information that will assist the interpretation of the NASA findings).

Methodology

The report should detail the methods or approaches used to gather data. The basis for mapping the study population (key HIV stakeholders/actors) and techniques used to sample the HIV service providers should be explained. Copies of the data collection tools should be included in the appendices and an explanation of how they were administered (self-administered or as interview schedules).

The key phases of the study should be described. This includes the preparatory phase for the study, like stakeholder meetings, selection of the steering committee, recruitment and training of the research team, and the process of data collection, analysis and validation, including steps taken for ensuring data confidentiality, informed consent and protection of personal data.

The NASA report should make it easy for the reader to assess the quality of the data used by highlighting the gaps in the data, use of estimates and the rational for those estimates, any assumptions made or estimations undertaken (with all details of how they were made, refer to Chapter 6) and the limitations of those assumptions. The approach used to clean and process the data, as well as challenges encountered and how these were resolved, should be detailed. The report should explain how the results of the study were validated, key adjustments made and finally approved by the stakeholders.

The NASA Steering Committee should also outline a dissemination plan identifying the different NASA products, their target audiences and planned use, and how these will be monitored.

Findings

The detailed NASA findings should be presented, as per the suggested analysis (Chapter 7) and the report outline (see the appendices and the NASA Toolkit). As stressed, the creative presentation of financial data will be critical, along with accurate interpretive narrative, to enhance the readers' understanding of the meaning and relevance of the findings.

Report conclusion and recommendations

The conclusion and recommendations should target the decision-makers in the country, summarizing the key findings, answering the policy questions they posed in the scoping of the NASA, and outlining the options for action. These should be presented at the NASA validation and dissemination meetings (which incorporates representatives from all sectors and ministries, including ministry of finance), discussed and the key recommendations crafted and agreed by the NASA Steering Committee and stakeholders (and could even be passed as a resolution, to add greater commitment to their implementation). The recommendations could cover the following areas:

- Programmatic and allocative decisions for greatest investment impact, addressing potential funding gaps and promoting a sustainable response to HIV beyond 2030.
- Potential efficiency gains and tracking progress towards integrated HIV service delivery.
- Sustainable, transparent, accountable and NSP aligned funding.
- Improving financial management capacity and systems.
- Improving the national information system.
- Institutional routine expenditure tracking.
- Additional research.
- Any others relevant to country stakeholders.

8.3. Policy briefs

Alternative, or additional, policy briefs/factsheets could be considered which succinctly summarize the key findings targeted towards specific policy questions, or stakeholders' particular interests. A policy brief is a concise and data supported summary intended to inform and persuade readers to influence, advocate for, and make decisions about government and donor policies concerning HIV funding and expenditures. Policy briefs have a specific focus and scope that put forward a policy relevant finding about issues requiring attention in the policy agenda. They can also describe the consequences of actions implemented, measures taken, or regulations introduced. Finally, they can make the case for a shift in HIV financing policies and allocations.

Possible topics for these briefs are listed below. The country can pick those relevant to its situation, or add any others that meets its particular needs:

- *Summary results.* A brief overview of the main findings (similar to an executive summary).
- *Programmatic spending.* An overview of ASC spending, by FE, by SDM.
- *Prevention spending*. More detailed study into prevention intervention spending, SDMs, funders' foci (FE × ASC.01), focus on KPs and link to epidemiological data showing changes in new infections.
- *Care and treatment spending*. A more detailed study of care and treatment interventions, FE foci, SDMs, focus on ART spending and reach, comparison with NSP targets and costing, unit/expenditure per person on ART per year and scope of efficiency gains.
- *Service providers in the HIV response*. More detailed study of the types of service providers, with specific focus on CLOs (in the CLR), their activities and funders and cost drivers (PS × ASC, FE × PS, PS × PF).
- *Expenditure on TB and HIV.* The focus here is the spending on people living with HIV and TB simultaneously. Examinations, clinical monitoring, related laboratory services, treatment and prevention of TB (including isoniazid and drugs for treating active TB), and screening and referring clients of TB clinics for HIV testing and clinical care. Direct expenditures in the purchase of drugs for the treatment and prevention of TB (including isoniazid and drugs for treating active TB) separately from other commodities and service delivery costs (as available).
- *Funding gap analysis.* Comparing observed expenditure profiles by ASCs with the planned resources needed according to the NSP (if accurately costed). The gaps in funding by categories and possible concerns about the concentration of spending in interventions of low effectiveness can be raised.
- *Sustaining the HIV response.* The funding landscape (FE × ASC), dependency and vulnerability of certain interventions, future budgets and allocations and mobilizing resources.
- *Efficiency analyses.* Present the potential allocative and technical efficiency gains that have been, or could be, made. Are the HIV investments yielding returns in terms of a reduction of new infections, progress in the treatment cascade and number of avoided deaths? If not, is the evidence clear enough to identify which SCHs, FAPs and PSs should improve their allocative and technical efficiencies, as well as the efficacy of their interventions to produce results? Are the prices of commodities creating difficulties in some schemes or providers that could be solved by creating procurement pools and open contracts?
- *Provincial/regional (subnational) details*. Where data allow (by ASC, FE, PF, SDM), regional equity analysis (using units of expenditure).
- *Technical overview/appendices.* Methods and assumptions (which are important for future NASA continuity and quality improvement), NASA bivariate matrices & details tables, at the

least: FE × ASC, FE × SCH, FAP × PS, PS × ASC, FE × PF, ASC × PF, ASC × BP, ASC × SDM, PS × PF. **Note**: This technical brief is required if the country chooses a series of briefs instead of a full report which would normally have the methodological details.

8.4. Dissemination and ensuring optimal utilization and impact of the NASA findings

The NASA Steering Committee should use a variety of platforms to disseminate them widely and also facilitate key stakeholders' active engagement with the findings. This can be done through a range of different products, as described above, in dynamic and meaningful ways to different audiences, as well as through different meetings and platforms. Representatives from all sectors and ministries, including finance, should be included, and one-on-one meetings with the Ministry of Finance would be beneficial.

The NASA products should be disseminated to the National AIDS Coordinating Authority, Government officials, donors and other key actors for discussion. It is recommended that hard copies of the outputs (especially the briefs/factsheets) be properly edited, laid out and printed to facilitate the dissemination of the results. The results should be presented to all institutions involved in the HIV response, with a clear explanation of how the report results might be interpreted and used. Critical moments should be maximized for such dissemination and impact, such as at key points in the public budget cycle, during resource mobilization efforts, such as Global Fund funding applications and PEPFAR regional or country operational plans (ROP/COP) discussions, or at international conferences for a wider audience. The final products (including datasets) should be made publicly available on the NAC and UNAIDS websites.

Desired outcomes of the entire NASA process include: evidence based allocative decision-making; improved allocative efficiency, value for money and greater return on investments; the institutionalization of resource tracking activities; the ability to overcome the hurdles of an assessment by increasing stakeholder appreciation of the value of the findings; and contributing to an informed policy dialogue. As such, an effort should be made to translate the results into formats useful for contributing to these goals.

Practical uses of the NASA results include the annual GAM financial matrix (generated automatically by the RTT software), mid-term reviews of NSPs (to ascertain if the NSP priorities have been adequately funded), sustainability road map development, funding applications made to the Global Fund (specifically to inform their funding landscape table) and/or to other donors, informing PEPFAR's country operational plans (COP), HIV investment cases, OPTIMA modelling, value for money assessments, global HIV target setting and resource needs estimates, costing studies (applying the NASA units of expenditures as benchmarks for unit costs), budget advocacy and other economic analyses such as cost-effectiveness analyses. These are discussed in further detail below.

Global Fund proposals and co-financing commitments

Through the country coordinating mechanism (CCM), each country receiving an allocation from the Global Fund submits funding requests for eligible disease components on behalf of the country. One of the documents to be submitted by the CCM is the Funding Landscape Table (FLT). A key source of data for this table is NASA's matrix: FEs and ASCs. In addition, the NASA data provide the baseline of past expenditure, from which the future years' anticipated budgets and donor commitments can be estimated or obtained and then compared with the future resource needs estimate (costed NSP) to measure the potential funding gap, providing the motivation for request for Global Fund support. Equally important, NASA reports, with sound and validated information regarding the country's domestic spending on HIV and TB, will provide evidence for the country's achievement of its co-financing commitments, being measured closely by the Global Fund. In addition, the NASA data can inform the calculation of the co-financing commitments required for future grant cycles.

PEPFAR country and regional operational planning

Until recently (February, 2025), the PEPFAR regional or country operational plans (ROP/COP) documented the US Government's annual investments linked to specific results in the global fight against HIV to ensure that every dollar is focused and traceable for impact. The ROPs and COPs were the basis for approval of the annual US Government's bilateral HIV funding in most partner countries. The COP and ROP also served as a source for Congressional Notifications; a tool for allocation and tracking of budgets and targets; an annual strategic plan for US Government funded global HIV activities; and the coordination platform with the Global Fund to ensure prevention of duplication. The NASA data can provide valuable evidence to inform the strategic investment choices in the COP, in whatever format this may evolve into, under the changing US administrations.

Sustainability planning

Sustainability road maps will guide country efforts to ensure that the highest impact is achieved with limited resources, and to mobilize additional resources to ensure that the 2030 global HIV targets are achieved. The NASA data can provide insights into which interventions are donor dependent and vulnerable to declining external investments. An accurate financial gap analysis will guide countries to select the appropriate strategies, interventions and level of funding. Strategic budget submissions can be developed with NASA data, that will strengthen the motivation to ministries of finance to increase domestic resources for HIV in the public budgeting cycle. This has become even more critical in recent radical reductions in development aid.

Informing technical efficiency gains

The NASA units of expenditure can provide valuable insights into the current costs of specific interventions, which can inform the costing and budgeting exercises for future provision, and also provide a benchmark against which unit costs used for costing the NSP can be checked for reasonableness. Future cost projections of longer-term NSP resource needs can use the NASA expenditure data for a previous year as the baseline against which to model and cost realistically. Data from NASAs and future cost analyses can therefore help programme planners determine the resources needed to sustain a particular programme or service and can serve as evidence to mobilize additional resources.

Other economic studies and research

NASA results are used in many other economic studies that evaluate the effectiveness and efficiency of HIV funding use around the world. These measure whether health-care resources are being used to get the best value for money.

The objective of these studies is to understand the relationships between spending on HIV programmes and desired outputs, such as people covered, patients treated, needles exchanged, condoms distributed, counselling sessions conducted and outcomes, i.e. cases of new HIV infections prevented. When combined with the epidemiological modelling of the impact of behavioural changes on the HIV epidemic, this cost information can provide the foundation for cost effectiveness, cost benefits and/or cost efficiency analyses that are needed to help guide the spending of HIV funds.

Technical efficiency studies focus on minimizing the unit costs of overall service delivery, subject to community-level factors, the policy environment and considerations regarding implementation quality. Understanding how management, financial analysis and institutional efficiencies affect delivery costs can result in changes to SDMs. These differences ultimately change the overall cost required to reach a targeted key population with services of a given quality.

Other options for dissemination

Other options include presentations at international conferences, peer-reviewed articles and webinars. Abstracts for international conferences generally require a summary of the main findings, with a clear focus and limited scope, but with enough detail to make a compelling case for this information to be

presented in posters or oral presentations during the conference. These abstracts and presentations also help gather practitioners from around the world and stimulate comparative work between them.

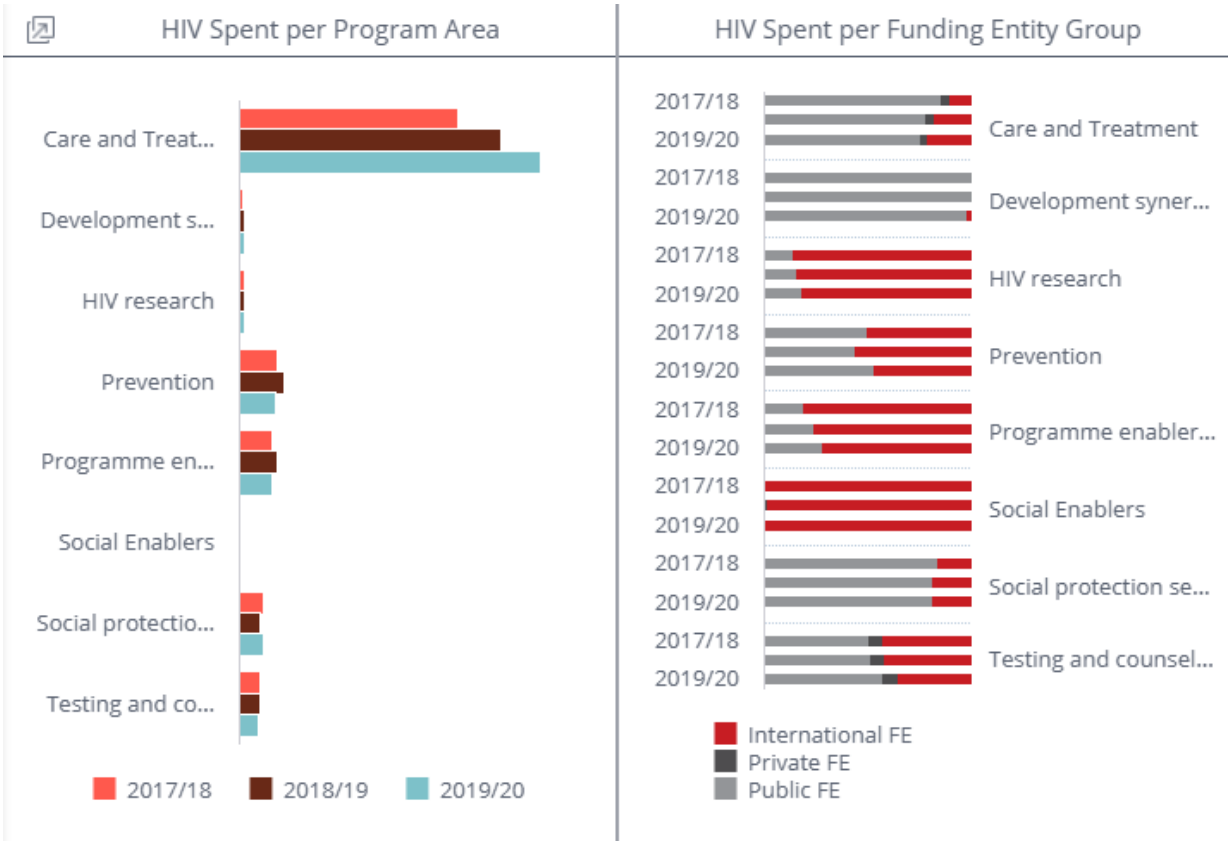
Articles that are published in peer reviewed journals have an additional purpose for this type of communication, namely fostering validity and legitimacy for the work of NASA practitioners, showing the importance of gathering primary data and continuing to do so until a time series emerges with clear patterns.

In the new age of virtual meetings and presentations, webinars offer an effective and efficient dissemination platform to audiences all over the world, and also facilitates their active engagement in the webinar discussions. Such webinars need to be well-planned, advertised, organized and facilitated, to ensure the correct audience are actively involved as far as possible.

Examples of useful NASA products

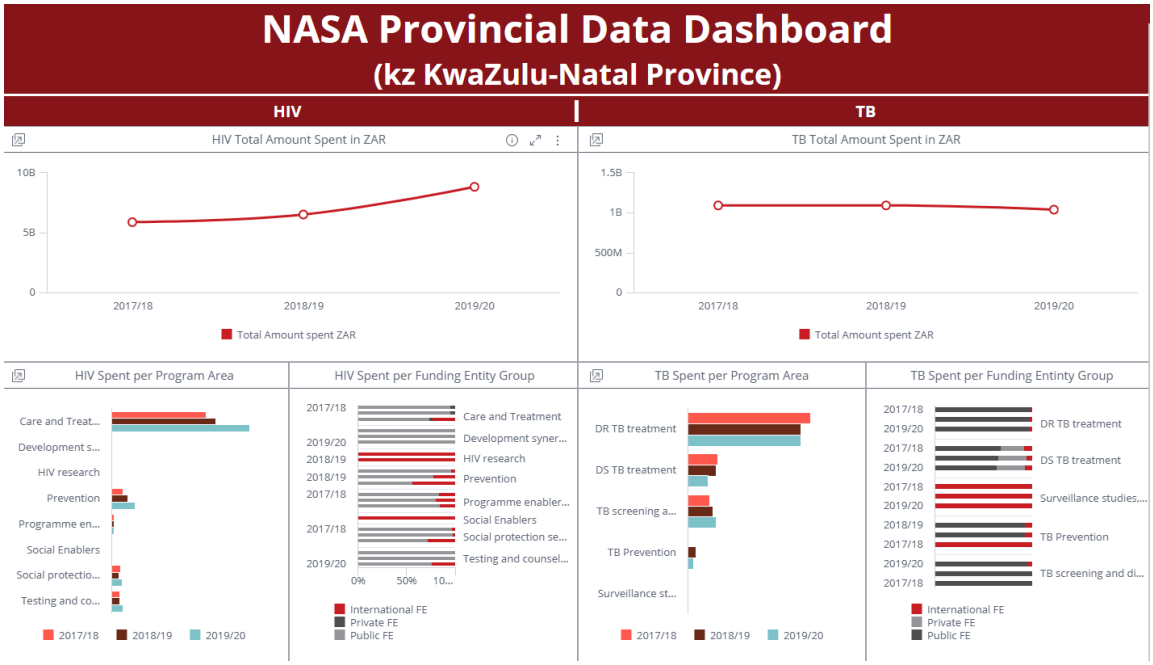
The South African on-line 'Situation Room' which presents the country's HIV M&E indicators as well as the most recent NASA data in a dynamic dashboard can be used for more detailed study into areas of interest (Figures 8.1 & 8.2), and has been actively used by national and provincial stakeholders and program managers in their planning, coordination and budgeting.

Figure 8.1. South Africa HIV & TB Situation Room: Amount spent per financing entity per HIV programme area (2017-2020)



Source: SANAC, 2025. Situation Room Dashboard: https://sanac.sisense.com/ (Access to be requested from SANAC)

Figure 8.2. HIV & TB Situation Room: NASA provincial data dashboard (KwaZulu-Natal Province)



Source: SANAC, 2025. Situation Room Dashboard: https://sanac.sisense.com/ (Access to be requested from SANAC)

Countries are also encouraged to track how the past NASA findings have influenced policy decisions and financing for HIV and the adoption of NASA recommendations, leading to improved utilization of available resources, mobilization of additional resources and ultimately to the sustainability of an effective HIV response. When countries request further financial support for new NASAs, they should report on these aspects of their previous reports to justify further funding of NASAs.

Chapter 9: Institutionalization of NASA and Alignment with Other Resource Tracking Approaches

Objectives of the chapter
To define and describe institutionalization of resource tracking.
To present the key factors that can enhance the degree of NASA institutionalization.
To provide examples of countries that have institutionalized NASAs in different ways.
To discuss where NASA might be harmonized with other resource tracking efforts.

9.1. Defining institutionalization of resource tracking

The institutionalization of HIV resource tracking refers to the *routine* production and *use* of estimates of HIV expenditure. For NASA exercises, this means ensuring the assessments provide continuous, regular, consistent and accurate data to improve countries' management of, and planning for, their HIV response, and achieving national ownership and legitimacy. Institutionalized and routine NASA will be a trusted source of HIV expenditure aggregates, indicators and estimates to inform policy and decision-making on the financing dimension of the HIV response.

9.2. Institutionalization characteristics

The characteristics of institutionalized resource tracking are outlined below:

- **Continuity.** Institutionalized NASA exercises must produce HIV data on a regular basis. This continuity not only provides a time series to evaluate the consistency of data and methods, but also helps assess changes in spending over time and the impact of changing policies on expenditure prioritization, thus leading to improved allocative efficiencies. Continuity of the exercises also refines the methods and builds the human capacity for resource tracking,
- **Consistency and accessibility.** As mentioned earlier, since its introduction, NASA studies have required consistency over time and across countries. Regularly undertaking NASA and making the findings and data available promotes utility and institutionalization. Using different platforms (bulletins, posters, e-dashboards) to make the information available to everyone, promotes transparency and accountability and thereby encourages stakeholders to continue sharing their data annually.
- **Quality and accuracy of data are ensured.** Through regional training, international technical support, NASA guidelines, handbooks, classifications, tools and updates, along with global HIV monitoring guidelines, consistency is ensured, measured and enforced. Additionally, UNAIDS provides quality assurance by reviewing NASA country results to ensure consistent and correct application of the NASA principles and classifications and to allow for comparison over time and between countries.
- **Ownership.** Countries with local organizations/public departments that perform the studies and receive funding from domestic, especially public, sources have made significant strides toward institutionalization. Building this ownership and domestic financing is not an easy task, especially if resources are scarce and there is a tradition of carrying out these studies with international

funding and consultants. However, when future funding for the HIV response is uncertain, having a local, independent and sustainable taskforce and budget to perform the studies can support a reformed, and more efficient, HIV financing strategy.

- **Trusted source of expenditure data.** NASA can be judged to be institutionalized when it is considered as a key reference for HIV financing in the country. Trust and credibility are the result of carefully planned implementation as well as strict quality control. The NASA report and other products should provide all the required information on sources, methods, estimations, limitation, data cleaning and validation exercises, as well as providing access to the data in a public domain.
- **Usability.** Are the results utilized, informing resource mobilization, allocation and use? Are programme managers using them to prioritize their activities? Are the results cited in other works, reflected in analyses, or in commentaries? Are the results presented in a clear, decision-driven and compelling way—in impactful, user-friendly formats? Are relevant data, conclusions and policy implications presented to decision-makers? Does the report present summary tables and overview infographics to describe the situation, assess the main issues at hand and identify courses of action? Can researchers and analysts find detailed tables for each vector in the report or, better yet, the link to an on-line resource to download such tables? If the results are used in these ways, in an ongoing manner over time, the investments made to produce and institutionalize them are justified.

9.3. Factors enhancing institutionalization

It should be noted that every resource tracking effort will be undermined by weak expenditure data, and thus efforts to improve the available systems, especially public accounting system outputs, would be extremely helpful in institutionlizing HIV expenditure monitoring. In particular, the degree of disaggregation and accuracy of the coding of interventions in every transaction from the level of requisitioning will be essential, to allow the allocation of expenditures to the correct 'cost centres' / diseases and their services. To this end, adding one or two additional variables in the public finance system, perhaps reflecting the ICD-11 disease codes (for the MoH expenditures), would enable the 'tagging' of every transaction/ payment, allowing for the easier extraction, aggregation and user-friendly summary of public expenditures.

The following factors can help in the strategic positioning of resource tracking as an embedded process in the governance of the HIV response, leading to its institutionalization, or at least routinized collection:

- **Demand creation/generation.** This activity involves the development of a network of stakeholders who are regular users of NASA, or other expenditure, data and indicators, periodically receive bulletins, policy briefs and fact sheets, and are regularly invited to dissemination activities. Policy and decision-makers at different stages of the response, once they are used to receiving data and have adapted them for easy understanding and application, will support the establishment of structures and commit persons and budgets to produce NASA studies.
- **Publishing, dissemination and on-line access.** Data related to HIV financing and expenditure need to be accessible to the public. Online, user-friendly dashboards, easy to read briefs, events with opinion leaders, journalists, activists and people involved in the HIV response, all help to mobilize demand for transparency and accountability. Thus, the return on investment in the NASA process will be illuminated, encouraging the continuation of NASA efforts.
- **Strengthened public financial management information systems.** Through the NASA and other resource tracking efforts, weaknesses in the public financial management and information systems (PFMIs) are highlighted and, with continued effort, the public expenditure record process can be improved to better label, extract and consolidate all public HIV expenditures. Ultimately, expenditure tracking measures should be embedded in the PFMIs, and managed by the NAC, MoH or Ministry of Finance. Once this happens, routine reporting of HIV expenditures is greatly facilitated.
- **M&E linkages.** The institutionalization of resource tracking is less challenging when considered as part of the routine national M&E system. Strengthening national capacities to provide updated financial information, along with epidemiological and programmatic data regarding the HIV

pandemic and response, is essential. Establishing 'situation rooms' (as in the South African example) can enable interactive and dynamic visualization of the national and subnational HIV data, showing progress towards targets. An interactive software platform allowing authorities to effectively use the HIV and programmatic and other relevant data sets in real-time for decision-making enhances the routinization of NASA data generation and use.

- **Annual production.** Ideally, the annual production of a NASA would be possible when making use of the routine public financial information and service provision (programmatic) statistics, which are usually reported for each fiscal period. Additionally, PEPFAR's annual expenditure reporting process (available on-line) as well as the routine reporting by the Global Fund's principal recipients, contribute to the possibility of annual production of HIV expenditure reports, which can then feed into the Global AIDS Monitoring dashboard (UNAIDS HIV Financial Dashboard). UNAIDS continues to promote access to these data sets, as well as to public financial systems, to enhance routine generation of HIV expenditure data.
- **Periodic NASAs.** If not done annually, undertaking a NASA every three years may be feasible and in each assessment, three years of data are collected, which will build up time–trend data set with a time lag of one year (for the most recent year, T_{-1}). Interim expenditure reviews (such as NASA-basic) are possible in between the full NASAs, which are also supported by UNAIDS as they enable countries to report annually to the Global AIDS Monitor.
- **Legal mandate.** Where one or more organizations (such as the NAC or MoH) have a legal mandate to produce routine expenditure reports, regular HIV expenditure reporting is facilitated. In some cases, a regulatory instrument could define spending assessments as a priority tool to improve resource mobilization, pooling and utilization, and thus create the mandate to undertake the studies at regular intervals. For example, in Zimbabwe, the National AIDS Council has the responsibility to report on the utilization of the AIDS Levy, which gives them the authority to request data routinely from all stakeholders and consolidate these for a national NASA report. A legal mandate can also facilitate the establishment of an M&E process that includes several components, NASA studies being one of these. The legal framework for the M&E process should establish roles and responsibilities for actual institutions which will be accountable for producing the national reports.
- **Qualified and skilled staff with adequate time to undertake their NASA.** Countries with a lack of trained and dedicated staff to design, conduct, implement, analyse and produce NASA reports are severely handicapped in their efforts towards institutionalization. By creating and maintaining a pool of skilled people coordinated by an NAC or MoH, as well as in supporting research units, it is possible to create institutional NASA teams with clear responsibilities and time to contribute to the data pool at regular intervals. Not only does this improve the quality and completion of the assessment, but it also makes it possible to reach ownership, continuity, consistency and sustainability of NASAs. Country examples of this are Botswana, Kenya, Pakistan, South Africa and Uganda, as described below.
- **Committed public budgets and/or from development partners.** Many countries fund their own NASAs on a regular basis. However, there are many countries that rely heavily on external support , where increasing domestic funding for NASAs might not be financially feasible in the short term. Institutionalization does not necessarily mean the entire NASA process needs to be funded by domestic, public funds, but rather that there is reliable and committed funds to undertake the assessment routinely, with a regular team of skilled persons managed/led by the NAC or MoH. Thus, international development partners' contributions are still important where domestic funding may be inadequate. In such cases, developing a national monitoring system that collects and collates the public spending and external funding, that requires improved public expenditure data and draws on skilled and committed staff (in the implementing institutions/departments) are important steps towards full institutionalization.

9.4. Approaches to institutionalization

There are differing degrees of, and approaches to, institutionalization of resource tracking, such that countries can explore the arrangement that best suits their situation. Differing scenarios, and country examples, are presented below. However, a key first step is to designate an agency to champion, conceptualize and lead the process, and to 'house' the database, and manage its routine updating. This could be the NAC which usually collects all other programmatic data for its routine M&E systems, to which the financial data can be added.

Ideally, to achieve institutionalization of the routine aggregation of all HIV-related expenditure, all stakeholders involved in the HIV response should be requested, or obligated, to annually report to the NAC their HIV related expenditure, with the required detail in a standardized structured format. This would allow for the automated consolidation of all their expenditure data within the NASA database, or other platform, that allows for the reconstruction of the transactions and the generation of the output bivariate matrices. For example, a flat Excel file with all the variables captured that can be extracted in pivot tables, or PowerBI®, would also suffice.

Where this ideal scenario (of self-reporting by stakeholders) is not feasible or suffers from poor and incomplete responses (which is common in any resource mapping), it may be necessary for data collectors to continue to undertake annual primary data collection through interviews as well as consistent requests for respondents' financial reports. This can be done centrally (where the NAC sends out a team of skilled data collectors) or can be decentralized by district level staff (such as district HIV coordinators) undertaking the data collection from all players in their district (as is the case in Zimbabwe). This could be aligned with their collection of other routine HIV M&E indicators.

For both the centralized and decentralized models of routine data collection, capacity is required in terms of skills and ability, as well as adequate personnel time to routinely undertake the collection, collation, and analysis. Without adequate resources and time, resource tracking cannot be successfully institutionalized.

A range of data collection options exists for routine expenditure tracking:

- **NAC (or MOH) undertakes every aspect of NASA themselves.** This includes the data cleaning, processing, analysis and report preparation (as is done in Zimbabwe by the NAC and their district HIV officers).
- **NAC routinely contracts a research entity/university department.** The entity undertakes the data collection, analysis and report preparation—under the leadership and oversight of an NAC (as is done routinely in Kenya by the NACC and University of Nairobi and in South Africa by the Centre for Economic Governance and Accountability in Africa under SANAC's leadership).
- **NAC (or UNAIDS on behalf of the NACs) contracts technical support persons / consultants, if needed.** National and/or international experts work with the national NASA team, facilitating the application of globally acceptable NASA methods and standards, while also building the capacity of the in-country team. Constantly changing consultants can undermine continuity in the assessments and does not build longer-term national capacity, while having a regularly contracted national consultant to routinely undertake the bulk of the data cleaning, capturing and analysis can be helpful, especially where the NAC staff are overstretched for such tasks.
- **Tap into existing logistics/ procurement management information systems.** Expenditures on HIV commodities often constitute a large portion of total HIV spending. Several indicators may be available from these which could be instrumental in tracking expenditures on HIV commodities by the FEs (public and donors):
- ARV regimen pricing and quantities procured and distributed.

- Site level stock situation of commodities and the quantities dispensed to beneficiaries. Test kit pricing and the quantities procured and distributed.
- Condom pricing and the quantities procured and distributed.
- Pricing of all commodities, which indicates the agreed procurement purchase price, the procurement agency fees and all costs incurred to import and store them.
- Programmes on essential ART service indicators, such as patient numbers, regimen distributions and adherence.
- **Piggy-back on / harmonize with other data collection processes.** For example, the health accounts (described below in section 9.7).

9.5. Country examples of institutionalization

Globally, there are many examples of successful institutionalization, or routinization, of HIV resource tracking. A few examples are given below of countries which, to varying degrees and in different ways, have achieved the routinized collation of HIV expenditure data:

- **Zimbabwe.** The district AIDS councils' (DAC) financial and data managers are involved in the collection, collation and analysis of HIV expenditure data, under the Zimbabwe NAC. This is in conjunction with the collection of other M&E indicators. This NAC uses NASA software at the district level to manage the data, and the NAC collates and analyses them, preparing the report and outputs. This has been done for several years, and the NAC has built its internal capacity to undertake these functions, with committed budget and personnel, and with occasional modest support from UNAIDS in updating its team in the latest NASA framework and software.

- **South Africa.** The South African National AIDS Council (SANAC) has led several NASAs between 2009 and 2024. SANAC has worked consistently with a national non-profit research organization (CEGAA) to routinely undertake its NASA according to global standards. Contributing to its routine extraction of public HIV expenditure from the public accounting system (BAS) has been the development of the BASLY tool data, which identifies and extracts all HIV-related expenditures and codes these according to the NASA classifications. The BASLY tool has been a joint effort between SANAC, the National Department of Health—specifically the unit managing the HIV conditional grant spending, the local NASA research agency (CEGAA) and a university department strong in health economics and HIV costing (Health Economics and Epidemiology Research Organization, HE^{2}RO), and with financial and technical support from UNAIDS and other partners. The BASLY tool needs to be occasionally updated to accommodate any new labels in the BAS charter of accounts and any changes in the NASA classification codes. It is a good example for other countries wishing to improve and automate their public HIV financial systems and reporting. SANAC and the national research agency also collect PEPFAR and Global Fund expenditure data, as well as of other development partners and the business sector (the latter being greatly facilitated by the Private Sector Forum convened by SANAC).

- **Kenya and Uganda.** Both of these countries make use of their national universities to routinely undertake their NASAs, under the leadership of National AIDS and STIs Control Program (NASCOP – previously NACC) and the Ugandan AIDS Council (UAC). The universities have committed staff to the work who regularly employ their students to undertake the data collection, ensuring global standards are applied and consistent analysis and presentation over several years. Additionally, Uganda has developed a digital system (FEMS) for consolidating their HIV expenditure and epidemiological data, which allows for their more routine monitoring.

- **Thailand.** The same research institution has been used for several years to undertake their expenditure tracking routinely (every two years) and consistently, fully funded and led by the government of Thailand.

- **Namibia.** The MoH Health Accounts team undertakes its work routinely with in-house capacity and, in recent assessments, has included a more detailed study into HIV using the NASA classifications and methods. Namibia has undertaken two joint Health Accounts and NASA.

- **Mongolia and Nepal.** These countries have consistently used the same national and international NASA consultants for several years who work closely with the national authorities. They have built data sets showing trends over time, which inform their future planning and budgeting. There has been some building of national consultancy skills, but there is vulnerability due to the reliance on the availability of those individual consultants (see challenges below).

- **Botswana.** This country has undertaken NASAs for several years (every three or four years), initially led by the NAC and then the HIV unit within the MoH. They have an established TWG made up of representatives from relevant ministries, the business sector, medical insurance and the non-profit sector. These are trained in NASA and the data collection tools, and they take responsibility for facilitating the data collection from their constituencies/sectors, supporting data collectors. They make use of a national NASA expert to assist with capacity building, quality control, data analysis and preparation of the draft outputs. For the last couple of rounds, they have undertaken joint health accounts and NASA (See details below).

- More advanced examples come from countries that have on-line public reporting systems, such as Brazil and Ukraine, where HIV spending is captured monthly by the public ministries and is available on-line. Other Latin American and East European countries have stronger PFMIS to draw from, which could provide best use cases to follow for other regions. However, this requires strengthening of PFMIS, which should also be an aim of resource tracking efforts.

9.6. Challenges faced when institutionalizing expenditure tracking

There are real challenges to institutionalizing NASA, or any expenditure tracking effort. These include, but are not limited to, the lack of routine reporting by development partners, the weak public financing accounting systems which do not delineate all the HIV-related expenditures, the lack of a standardized taxonomy or classification (way of labelling) of HIV interventions (preferably to match the NSP categories) and, most critically, the lack of capacity within the 'housing' agency to collect, collate, clean, manage and analyse these data on a routine basis. Efforts and resources are required to build and sustain this in-house capacity, which is often afflicted by high staff turnover.

Another common challenge is the lack of cooperation of the stakeholders in the HIV area in submitting their expenditure data. This may be partly due to a lack of political will and drive from senior levels, but also possible loss of interest if previous NASA reports were not made widely available or were not viewed as accurate, complete, or useful. Dissemination and utilization of the data in informing improved allocative efficiencies, enhanced coordination and increased transparency and accountability all contribute to the improved perspective of utility of the data, ensuring their optimal impact and therefore enhance partners' willingness to share their data consistently.

9.7. Alignment with other resource tracking efforts

There are various resource tracking approaches, with different scopes, foci and importantly, which answer different policy questions. Refer to source document and reviews which describe these in

depth[4]. In selecting the approach to apply, country stakeholders should consider the different methods, the questions they seek to answer as well as the degree of detail they provide.

"The utility of financial information is largely contingent on the granularity and level of disaggregation available. Understanding total resources spent across the health sector is minimally useful, as planners often want to know who is spending money on ***what health services, through which inputs and where the services are produced****".* Cooper-Smith, 2022[5].

Table 9.1 provides a high-level overview of some of the key approaches that may include an HIV focus, including the System of Health Accounts (SHA) developed by the World Health Organization (WHO), the Public Expenditure Tracking Survey (PETS) developed by the World Bank, the Annual Planning Tool developed by CHAI (which mostly focuses on future HIV budgets and commitments), and the Resource Mapping and Expenditure Tracking developed by Global Finance Facility (GFF) and World Bank, the latter being mostly for reproductive, maternal, neonatal, child and adolescent health (RMNCAH) related budgets and expenditures, but could be applied to other areas.

Table 9.1 An overview of the main resource tracking approaches and the policy questions they seek to answer, as related to the HIV response

(i.e. the table does not attempt to list all the attributes of the health accounts and the broader health-related policy questions).

Key programmatic/policy question to be answered	Type of analysis / data used	SHA (WHO)	NASA (UNAIDS)	RMET (CHAI, GFF, WB)	PET/R (WB)
Focus / scope of assessment	Total spending on specific issue / sector	**Health**	**HIV** (and co-morbidities: TB, STIs, HPV, Hepatitis, Cerv.Ca.)	A **specific health issue**, e.g. RMNCAH, COVID-19.	A **specific public sector programme** / project & often within a sub-national location e.g. An educational project in a specific province
Total health spending & % from public funds, per capita health spending	% contributions by source, time trend analysis, per capita health expenditure	**Y**	**N** (only HIV and co-morbidities)	Not entire health spend, only a specific health issue	**N**
Total HIV spending (cross-sectoral) & % from public funds	% contributions by source, time trend analysis, per capita HIV expenditure	Not entire HIV spend **(only health-related)** and only **if includes disease split**	**Y**	Not usually HIV (a few countries have used it for HIV eg. Malawi, Rwanda)	Can have specific HIV focus but not usually entire country / HIV response
Health and/ or HIV spending by geography (with sub-national unit, SNU, disaggregation) **-** equitable distribution of resources across province (SNU)?	Disaggregation of spending by geographic location of consumption / service delivery, per capita unit of expenditure per SNU	**Y** if expenditure data are labelled by SNU or applies distribution assumption (utilization data)	**Y** if expenditure data are labelled by SNU or based on location of service providers	Not usually unless has a specific SNU focus	Sampled sub-national area and focus topic only
Alignment of total HIV resources to **HIV NSP priority interventions**? Is the optimal mix of interventions being funded?	Disbursement by NSP intervention analysis, allocative efficiency, optimal package comparison	**N**	**Y**	**N**	**N** (& not usually whole country
Were the **HIV expenditures adequate** to meet the NSP goals?	NSP financial gap analysis. Comparing details HIV spending with detailed NSP cost estimates (resource needs)	**N**	**Y**	**N**	**N** (& not usually whole country
Are **all funds available being used?** Optimal absorption of available funds?	Financial absorption/ burn rates. Expenditure versus budget or disbursement. Bottleneck analysis.	**Y** if budget data are also collected & compared	**Y** if budget data are also collected & compared	**Y** for RMNCAH	**Y** for the specific area of focus
Financing architecture,	Flow of funds (revenues	**Y**	**Y**	**N**	**N**

[4] Genesis (2022). Guidance for selecting methods and tools for HIV economic studies. Available: https://www.genesis-analytics.com/reports-and-other-documents/guidance-for-selecting-methods-and-tools-for-hiv-economic-studies

[5] Cooper-Smith, 2022. White Paper: Achieving Enhanced Financial Monitoring of Global Health Programs (White Paper) (CORRT).

Key programmatic/policy question to be answered	Type of analysis / data used	SHA (WHO)	NASA (UNAIDS)	RMET (CHAI, GFF, WB)	PET/R (WB)
sustainability	and schemes), from financial source to beneficiary populations				
Equitable distribution and utilization of HIV resources? Are funds being utilised to match need / burden of HIV per region?	Per PLHIV spending per province/district, cost-benefit analysis, distribution compared to burden of disease	**Y** - if includes HIV disease split and expenditure data are labelled by SNU	**Y**	**N**	Sampled sub-national area and focus topic only
Financial landscape analysis, donor alignment / priorities, data for sustainability planning	Commitments/ expenditure by main financial source per national priorities, unsustainable areas	**Y** (for health)	**Y**	**Y** in theory	**N**
Deeper insight into specific HIV services, interventions, delivery model, cost drivers, optimised spending per intervention	Technical efficiency analysis. Unit of expenditure by cost components (e.g. expenditure per person on ART, per virally suppressed)	**N**	**Y**	Not clear	Some PERs look at specific services with quality assessment
Exploration of spending by HIV service delivery modality for interventions, particularly wrt community-based / led and self-services	Split of expenditures per service delivery modality, unit of expenditure calculation for certain services by delivery model (e.g cost per person on ART delivered in facilities or in community by CLOs). Link these expenditures to their outcomes (if data allow)	**N**	**Y**	**N**	**N**
Can HIV units of expenditure inform costing (eg. HIV units of expenditure to inform NSP unit costs for resource needs)	Generation of national average units of expenditure that are adequate for high level policy cost estimations (vs normative costing)	**Y - high level costs estimates** if include HIV disease split	**Y**	Not clear	**N**
Who is benefiting from the HIV spending?	Detailed expenditure by beneficiary type (particular to HIV epidemic and key populations), analysis of intervention by their beneficiary populations	If HIV split, by broad BEN categories of gender and age (under or over 5 years) (not specific KPs)	**Y**	**N**	**N** (unless focus is on a project for specific group / age)
Are there areas of technical efficiency gains?	Analysis of expenditure per intervention and cost input / cost drivers. Economies of scale. Changes in units/spend over time. Comparisons with regional unit prices and global / pooled procurement scheme prices	**N** (if interventions and cost components are estimated %)	**Y**	**Y** in theory	**Y**
How old are the data (once assessment is finalized)? How timeous are the data for optimal planning?	Data timelag (at time of validation & finalisation)	Usually **T-3** once published (with govt sign-off), or **T-2** (when data are available)	Usually **T-1 / T-2** once published	Unknown timelag (too few country examples)	Unknown timelag
How long does each assessment take (to finalization) on average?		**1 - 2 years** (depends on length of validation process, data are usually available earlier)	**4-10 months** (depends on size & complexity of HIV response)	Unknown	Unknown
Do the data enable accurate GAM HIV multisectoral reporting		**N**	**Y**	**N**	**N**
Can the data be used for GF Co-financing reporting / evidence?		Y if has HIV disease split with actual HIV spend, rather than estimated by distribution key.	Y	N	N
Can the data contribute to TB Global reporting		**Y**	**Y** (if NASA-plus collects all TB expenditures)	**Y** in theory, if focus is TB	**N** (not usually whole-country)

NB. This table is only from the perspective of HIV stakeholders, and does not attempt to list all the attributes of the health accounts that are valuable to understanding the broad health sector. Abbreviations: SHA: system of health accounts. NASA: national AIDS spending assessment. RMET: resource monitoring & expenditure tracking. PET/R: public expenditure tracking / review. TB: tuberculosis. HPV: human papillomavirus. STI: sexually transmitted illness. Cerv.Ca: cervical cancer. RMNCAH: reproductive, maternal, newborn, child & adolescent health. GAM: Global AIDS Monitor. Refer to Genesis landscape of economic studies including resource tracking approaches: https://www.genesis-analytics.com/reports-and-other-documents/guidance-for-selecting-methods-and-tools-for-hiv-economic-studies.

9.8. Undertaking joint NASA and health accounts

The System of health accounts provides the framework for the collection of all health-related expenditures and a country's Health Account (HA) may, or may not, include a disease split that apportions the total health expenditure between service delivery levels, between different diseases (if including the disease split) and between interventions, applying distribution keys based on various assumptions. The expenditures are coded according to the SHA categories which, being health oriented, cannot capture the entire multi-sectoral HIV response nor are they easily matched to the NSP intervention categories.

If a country routinely undertakes Health Accounts (HA) with a disease split, it may make sense for the country to consider undertaking a joint HA-NASA. This could be beneficial for several reasons, including reduced burden on respondents as well as some reduced data collection costs. Importantly, the HA-NASA product/s should be aligned on the total health-related HIV *recurrent* expenditure. Note that the HA deals with capital investment differently, in that it does not attribute it to specific diseases or interventions, while the NASA does attribute capital expenditures to specific HIV interventions – which can result in slightly different total HIV spending in both assessments. Botswana and Namibia offer recent HA-NASA examples which can be useful to other countries considering this option[6].

However, several challenges can be faced in such a joint HA-NASA process, including the differing time that the two assessments usually take to complete (which can hold up finalization of the HIV findings). The process also requires a strong technical team with both SHA and NASA experience to work closely together to ensure alignment of data and assumptions and ensure that the HIV data are collected with the detail required for HIV stakeholders and according to NASA classifications and principles*, without using* distribution keys. This requires the HIV data to be collected with NASA tools and categories and then matched to the SHA categories. UNAIDS and WHO have developed the mapping for this, and for the importation of NASA data into the Health Accounts Production Tool (HAPT).

The HA-NASA team should review and adjust, where necessary, the assumptions underlying the distribution keys applied in the HAPT, specifically the disease split of the shared operational and human resource (HR) costs, as well as the split between in-patient and out-patient care for PLHIV. These are sometimes based on outdated data, which can result in the HIV share being exaggerated. Some checks to address this risk include:

- Ensure all **HIV commodities** have been 100% allocated to HIV, and not to any other diseases, e.g. ARVs / PrEP, HIV test kits / reagents, Condoms.
- Ensure all other **non-HIV commodities** (medicines, tests etc.) are NOT allocated to HIV (the default split of these per disease must be adjusted to give 0% to HIV).
- **Capital investments are very small for HIV.** Unless some specific investments were made (e.g. building HIV clinics, purchasing vehicles, or HIV lab improvements), and therefore the allocation of capital investments to HIV should be 0%, or very little.
- HIV-related hospitalization has dramatically reduced with the scale-up of ART. Therefore the share of hospital-related costs allocated to HIV should be very small. If recent hospitalization utilization data (bed days) for HIV patients exist, use these to update the distribution key – which should be applied only to the shared operational & HR costs in hospitals. Other

[6] Results for Development SHA-NASA harmonization pilots in Namibia & Botswana: https://r4d.org/acs-harmonizing-resource-tracking-for-better-decision-making/

hospitalization costs that are specific to other diseases, such as diabetes, surgery and oncology, should NOT be attributed to HIV.

- For the allocation of out-patient (clinic) costs to HIV, please consider that clinic visits have reduced in frequency and time (with multi-month scripting, and reduced ARV collection time). Use recent ABC-TD studies and ART unit costs to improve the share of clinic overheads and staff attributable to HIV out-patient treatment services.

Refer to Box 10.1 and other UNAIDS documentation when considering undertaking a joint HA-NASA.

Box 10.1:
Key aspects to consider when planning a joint HA-NASA

- **Who co-ordinates overall process?** MOH? NAC? **Multisectoral RT-TWG?**
- **Who leads** the more indepth HIV data collection, capturing, cleaning, analysis and reporting process?
- **Where will the HIV data be housed**? Which database (HAPT or RTT **or both**) and who maintains the database/s?
- **Who is funding** the full HA and NASA aspects?
- **Which data collection tools** are to be used for the HIV aspects (health and non-health)? One or two tools? HA and/or NASA tools? **Ideally a new combo tool could be used (e.g. in Namibia & Botswana but requires good knowledge of both classification systems)**
- **How will the data be collected and analysed?** Self-administered questionnaires (which can face poor response) or face-to-face interviews? **Or combination, depending on data. Collection of electronic financial records/reports as far as possible (PEPFAR, GF, MOH, MAS data).** HAPT or RTT or both for analysis?
- **Who undertakes the time-consuming work** of collecting, capturing, cleaning, analysis and reporting of the HIV spending (across all sectors)? **Involvement of TWG essential but bulk done by Health Economic team (MOH) / consultants / university?**
- **Validation process** – joint (but different stakeholders) or separate? **Note that the HA validation process takes longer than for NASA.**
- **What are the timing requirements** for the NASA and HA data (T-2 vs T-3 for HIV budgeting decisions? Annual reporting requirements? Trade-offs?)
- **Separate or combined report/s? A separate NASA report might better meet the needs of HIV stakeholders, and could be completed and validated before the HA report.**
- **Packaging & Dissemination** – to be undertaken separately or jointly?

Conclusion

This guide has sought to provide an initial theoretical framework and practical guide for countries planning to either undertake their first NASA or seeking to improve their existing HIV expenditure tracking efforts and/or apply the new NASA framework and classifications. The NASA teams may require additional training in the NASA methods, classifications and practical use of the tools (DCT and RTT), as well as possible technical support to enhance quality and maintain global standards. The teams should also refer to the NASA Toolkit and Teams Community for updated guidance and tools. Further information can be obtained from Strategic Information Advisors at country UNAIDS offices.

Materials Available in the Resource Tracking Toolkit

1. Generic NASA terms of reference, and example workplan and budget
2. NASA vector classifications and their definitions, in English, French, Russian and Spanish (excel)
3. Data collection templates
4. Data consolidation tool (DCT) in English, French, Russian and Spanish (excel)
5. Resource Tracking Tool (RTT) manual (slide deck)
6. Guide to tracking the resources for community-led organizations
7. Training materials for all aspects of conducting a NASA
8. Outline of NASA inception report, final report and briefs, with guidance on the additional analysis
9. Crosswalk for PEPFAR and Global Fund data to NASA classifications

Please access these and countries' NASA reports and data at:

https://hivfinancial.unaids.org/hivfinancialdashboards.html#

Abbreviations and Acronyms

ART	antiretroviral therapy
ARV	antiretroviral
ASC	HIV/AIDS spending category
BAS	basic accounting system
BCC	behaviour change communication
BP	beneficiary population
CBO	community-based organization
CCM	country coordinating mechanism
CDC	Centers for Disease Control and Prevention (USA)
CLO	community-led organization
CLR	community-led response
COP	country operational plan
CPUP	community pick-up points (for ARVs)
CSO	civil society organization
DATIM	Data Import and Systems Administration
DCT	data consolidation tool
DHI	digital health intervention
ER	Expenditure Report (PEPFAR)
FAP	financing agent and purchaser
FBO	faith-based organization
FE	financing entity
FGA	financial gap analysis
FLT	funding landscape table
FY	fiscal year
GAM	Global AIDS Monitoring
GHSD	Bureau of Global Health Security and Diplomacy (PEPFAR)
HA	health accounts
HAPT	health accounts production tool
IP	implementing partner
IRB	institutional review board
KP	key population
LMIC	low and middle-income country
LMIS	logistics management information system
M&E	monitoring and evaluation
M&S	maintenance and support
MoH	Ministry of Health
NAC	National AIDS Commission
NASA	National AIDS Spending Assessment
NHA	National Health Accounts
NGO	nongovernmental organization

NSP	national strategic plan
OOP	out-of-pocket
OPM	Oxford Policy Management Group
OVC	orphans and vulnerable children
PEPFAR	U.S. President's Emergency Plan for AIDS Relief
PETS	Public Expenditure Tracking Survey
PF	production factor
PFMIS	public financial management and information system
PMTCT	prevention of vertical transmission of HIV
PR	Principal Recipient (Global Fund)
PrEP	pre-exposure prophylaxis
PS	provider of service
PUDR	Performance Update and Disbursement Report
REV	revenue
ROP	Regional Operational Plan
RTT	Resource Tracking Tool (NASA)
SC	steering committee
SCH	financing scheme
SDM	service delivery modality
SHA	System of Health Accounts
SNU	subnational unit
SR	subrecipient
ToR	terms of reference
TSM	Technical Support Mechanism (UNAIDS)
TWG	technical working group
UCO	UNAIDS Country Office
UNAIDS	Joint United Nations Programme on HIV/AIDS
USAID	United States Agency for International Development
WHO	World Health Organization

Appendices

Appendix 1: Glossary of terms and NASA classification definitions

Efficiency

Technical efficiency refers to the relationship between resource inputs and outputs, implementing the service right (how resources are used during service provision). An efficiently organized health sector will maximize the use of available resources, such that the least amount of resources is used to produce the most outputs. WHO definitions (2025): https://www.who.int/teams/health-financing-and-economics/economic-analysis/costing-and-technical-efficiency/technical-efficiency#:~:text=Technical%20efficiency%20refers%20to%20the,are%20used%20during%20service%20provision)

Comparing NASA expenditure data *per intervention* (inputs) with their programme performance data (outputs / outcome) provides insights into the intervention's technical efficiency and areas of potential efficiency gains / savings.

Allocative efficiency refers to doing the right things (providing highest value health services for available resources). NASA expenditure data illustrates if, within the available resources, there was spending on an optimal mix of interventions, as indicated in the national HIV strategic plan or investment case. The GOALS or OPTIMA models can be calibrated with NASA's past expenditure to model what these investments achieved in terms of new HIV infections and deaths averted.

Efficiency should also be viewed within a broader perspective, including geographic distribution of resources and acknowledging equity-efficiency trade-offs.

Another measure of efficiency is the Absorption rate: a high absorption rate (meaning a large portion of the budget was spent) generally indicates efficient utilization of funds and a good track record in implementing planned projects or programs.

For example, the Global Fund defines absorption as the percentage of actual expenditures compared to grant budget; or, simply, how much of the budgeted funds have been spent by a country. chrome-extension://efaidnbmnnnibpcajpcglclefindmkaj/https://aphrc.org/wp-content/uploads/2019/07/Design-draft-3-Absorption-capacity-brief-22nd-Feb-2017.pdf

A1.1. NASA Classification of financing entity (FE)

There are different types of financing entities (FE) that provide resources for the HIV response. The role of the FEs should be distinguished from the role of entities such as financial agents and purchasers that collect funds and disburse them. An analysis of FEs may be of particular interest in countries where funding HIV programmes are heavily dependent on international sources (Table A1).

Table A1. Basic structure of the classification of financing entities

Primary breakdown (1st digit)	Further disaggregation
FE.01. **Public entities**	Public entities are institutional units that are part of the government or are closely associated with it. Public entities are typically run by central, state or local governments, they also include social security institutions and other instrumentalities of the government.
FE.02.	Domestic private sources include funds from households,

Primary breakdown (1st digit)	Further disaggregation
Domestic private entities	corporations and not for profit organizations. Such expenditures can be either prepaid to voluntary health insurance or paid directly to health-care providers.
FE.03. **International entities**	Allocations as grants or as non-reimbursable financial cooperation that high-income countries provide to recipient countries directly, e.g. budget support directly to the treasury of recipient countries. The entities' contributions reported under this item relate to government to government transfers and do not include contributions or grants made by governments to multilateral agencies. The underlying principles are avoidance of double-counting and distinction between origin of funds which may be an international agent and the purchasing agent or paying agent, which are mostly resident agents.

A1.2. NASA Classification of revenue (REV)

Revenue (REV) is the distribution of funds through specific contribution mechanisms, including in cash and in-kind. The categories of this classification are the types of flows through which the financing schemes obtain their revenues. These categories are defined according to which institutional unit provides the funds and offers a complete interpretation of public and private financing. Where necessary, the revenue category has sub-categories that are defined according to which institutional sector provide the given revenue. (For example, voluntary prepayment as a category of revenues has the subcategories voluntary prepayments from households, voluntary prepayments from employers and so on).

The information provided by this classification illustrates the policies established for revenue collection, their diversity and level of progressivity. For instance, governments can channel resources through various mechanisms, such as transfers to other governmental agencies, as well as to health insurance organizations (as contributions on behalf of low income groups), subsidies to private entities and transfers to non-profit organizations. Revenues can also be in-kind transfers (for example, in-kind foreign assistance to government financing schemes) (Table A2).

The main advantages of the REV classification are as follows:

- It provides comprehensive information about revenue raising (how and what type of revenues are raised by the financing schemes and, in combination with information on institutional units, from which institutional sectors of the economy).
- It allows for a sound interpretation of the structure of 'public' and 'private' finance in a way that better reflects the current health financing arrangements.
- It makes it possible to analyse the issue of multiple layers of financing and the issue of who bears the burden of financing the schemes.

Table A2. Basic structure of the classification of revenues

Primary breakdown 1st digit	Further disaggregation
REV.01. **Government transfers from domestic revenue**	In order to provide a transparent picture of the role of government, the subcategories of REV.01: distinguish between internal transfers (e.g. allocations from the central government budget to the MoH and grants to local governments); a contribution by government on behalf of specific groups (e.g. on behalf of children, the elderly, the inactive poor); subsidies (e.g. to employers buying health insurance for their

Primary breakdown 1st digit	Further disaggregation
	employees); and other transfers from government domestic revenues (such as for non-profit organizations). The information on social insurance contributions paid by the government on behalf of certain non-active population groups is increasingly important for policy analysis in countries where the social insurance scheme plays the major role in financing social and health services. This code refers to the funds allocated from government domestic revenues for HIV purposes, including reimbursable loans.
REV.02. **Transfers distributed by the government from foreign origin**	Transfers originating abroad (bilateral, multilateral, or other types of foreign funding) that are distributed through the government are recorded here. For the financing scheme receiving these funds, the provider of the fund is the government, but the funds are from a foreign origin. The origin of the revenue can only be registered at the level of the transaction of the revenue. Transactions involving revenues from foreign entities channelled via government may take the following major forms: Foreign financial revenues earmarked for health. These revenues are usually grants by international agencies or foreign governments donated to the government, or voluntary transfers (donations) by foreign non-profit organizations or individuals to the government. Governments may use these donations to fund governmental or NGO health financing schemes. Non-earmarked foreign revenues. These revenues are grants and voluntary transfers (other than grants) received by the government without detailed specification of their use by the foreign agency.
	Note. REV.02 refers to general budget support, which means the government's on-budget money of foreign origin. This category can be difficult to distinguish from REV.01 (rather than REV.07), as it requires additional specifications in the budget structure to track the source of resources. This code excludes PEPFAR and Global Fund grant support as these donors give earmarked HIV funding with direct limitations on funding usage; it is always reported under REV.07.
REV.03. **Social insurance contributions**	Social health insurance contributions are receipts either from employers on behalf of their employees, or from employees, the self-employed, or unemployed persons on their own behalf that secure entitlement to social health insurance benefits. Subcategories of social insurance contributions are classified by the type of institutional units that pay the social insurance contribution on behalf of the insured. This category excludes social insurance contributions paid by the government on behalf of specific groups. It also excludes 'imputed social insurance contributions'.
REV.04. **Compulsory prepayments**	This includes compulsory private insurance premiums and payments to compulsory insurance schemes. Compulsory private insurance premiums are payments received from the insured, or other institutional units on behalf of the insured that have been mandated by government and secure entitlement to benefits of compulsory

Primary breakdown 1st digit	Further disaggregation
	health insurance schemes. Under compulsory private health insurance, all residents (or defined groups of residents) are obliged to purchase a health insurance policy. The law may also define the rules for insurance premiums, for example, to oblige insurance companies to apply community rating.
REV.05. **Voluntary prepayments**	This includes voluntary private insurance premiums. Voluntary insurance premiums are payments received from the insured or other institutional units on behalf of the insured that secure entitlement to benefits of the voluntary health insurance schemes. Subcategories of voluntary prepayment are classified by the type of institutional units paying the revenues, as follows: Voluntary prepayment from individuals/households. Voluntary prepayment from employers. Other voluntary prepaid revenues. As discussed, there exists a variety of types of voluntary health insurance across countries. Accordingly, the rules for setting their premiums also differ. The main types are: risk rated individual premiums; group rated premiums; and community rated premiums. While there is no intention to use such detailed categories for international data collection, countries may find it useful for their national health accounts to define subcategories of voluntary insurance premiums according to these types.
REV.06. **Other domestic revenues**	This category includes domestic revenues of financing schemes not included under codes REV.1 to REV.5. Subcategories are defined according to the institutional units that provide the voluntary transfers: Other revenues from households not elsewhere classified. Other revenues from corporations not elsewhere classified. Other revenues from non-profit institutions not elsewhere classified.
REV.07. **Direct foreign transfers**	The main ways that revenues from foreign entities directly received (via transfers) by health financing schemes may be transacted are: Direct foreign financial revenues earmarked for health. These revenues are usually grants by international agencies or foreign governments, or voluntary transfers (donations) by foreign non-profit organizations or individuals that contribute directly to the funding of domestic health financing schemes Direct foreign aid in kind (health care goods and services). REV.07 represents revenues that are usually earmarked for a specific disease or programme and are allocated at the donor level directly to a particular scheme (which can also include MoH schemes). FE.03 is usually larger in scale compared to REV.02.

There is a growing need for policy-makers to inform their decision-making with respect to both existing and advocated mechanisms for financing the HIV system. For the analysis of revenue raising, three viewpoints can be taken: where the flows originate; where the flows go; and the nature of the flows. Understanding the nature of the flows is of importance from the perspective of both social sector and public finance policy.

A1.3. NASA Classification of financing scheme (SCH)

Financing schemes (SCH) are structural components of HIV systems. They are the main types of financing arrangements through which people obtain health and social HIV services. Financing schemes include direct payments by households for services and goods and third party financing arrangements. Third party financing schemes are distinct bodies of rules that govern the mode of participation in the scheme, the basis for entitlement to health services and the rules on raising and then pooling the revenues of the given scheme.

The starting point should be an analysis of all the financing schemes within the country's financing system, and then each should be classified according to NASA's Classification of Financing schemes. Therefore, it is necessary to first identify all the financing arrangements (schemes) of a country, together with their main characteristics. One approach is as follows.

First, list the country schemes, together with information on the mode of participation, benefit entitlement, as well as the benefit package which can be used to help classify each scheme. It is important that all financing schemes that purchase goods and services for residents of the country are included. At this stage, it may be necessary to detail subschemes which have very specific financing and payment strategies e.g. for treatments for subpopulations.

A1.3.1. Criteria for distinguishing the categories of financing schemes

The following list contains the main criteria for distinguishing the different health-care financing schemes (SCHs):

- Resident or non-resident (foreign) SCHs with mandatory or voluntary coverage (mode of participation).
- Entitlement—contributory or non-contributory (basis for entitlement).
- Compulsory or voluntary contributions.
- Contribution prepaid or made at the time-of-service use.
- Pooling—interpersonal or solely for the individual or family.
- Purchase of insurance policy needed or not.

However, there are some complex financing arrangements that require further categories of participation and entitlement.

The mode of participation refers to the relationship between the individuals (residents of a country) and the different financing schemes, which leads to the following categories:

- *Compulsory/mandatory:*
- Coverage of the population is automatic, universal for all citizens/residents.
- Participation (contribution payment) is mandatory by law for all the population, or for defined groups within the population (social health insurance or compulsory private insurance).
- *Voluntary:*
- Coverage of individuals or groups is at the discretion of individuals or firms (e.g. individual or group based voluntary health insurance).

The basis for benefit entitlement refers to the general conditions (basic rules) for access to care under the different SCHs. An individual's access to services under an SCH may be:

- *Non-contributory:* Defined by constitution or law (citizens/residents, or defined individuals or groups within the country) and not linked to a specific contribution payment.

- *Contributory:* Defined by law/government regulation and requires a contribution payment made by or on behalf of the covered individual (e.g. social health insurance).
- *Discretionary:* Based on the discretion of a private entity (charity foundation, employer, foreign entity).

Table A3 lists the main criteria for distinguishing the different financing schemes.

Table A3. Basic structure of Schemes

Primary breakdown 1st digit	Further disaggregation
SCH.01. Government schemes and compulsory contributory health-care schemes	This category includes all schemes aimed at ensuring access to basic health care and social services for the whole of society under HIV programmes, a large part of it, or at least some vulnerable groups. Included are: government schemes; social health insurance; compulsory private insurance; and compulsory medical saving accounts. A key rationale for government intervention in health systems is to ensure access to basic health care for the whole of society (or vulnerable social groups). This purpose can be pursued through different coverage schemes, which implies differing levels of redistribution between social groups and individuals. Health accounts are also expected to provide information for assessing how well health systems achieve this key policy goal. Therefore, for international comparability, it is important to have a general, aggregate category that includes all financing schemes that serve this goal.
SCH.02. Voluntary payment schemes (other than household OOP payments)	This category includes all domestic prepaid health-care SCHs under which the access to health services is at the discretion of private actors (though this 'discretion' can, and often is, influenced by government laws and regulations). Included are: voluntary health insurance; non-profit organization SCHs and enterprise SCHs. The term 'compulsory scheme' refers to schemes where membership is made compulsory by the government (by law). All other schemes are considered voluntary. For instance, an employer can decide to have a group insurance for all its employees: this is considered voluntary insurance, although for each employee participation in the insurance can be imposed by the employer. There is one important difference between these schemes and household OOP payments that is of critical policy relevance: the presence or absence of interpersonal and/or intertemporal pooling, which is also reflected in the separation between the time of payment and the time of service use. In the case of OOP payments, households must pay the whole or part of the cost of care at the time of care delivery. OOP expenditures show the direct financial burden of medical care for the household, which may have a catastrophic effect on its financial situation. This justifies a separate first-digit level category for voluntary private schemes (other than OOPs) and OOP payments.

SCH.03. Individual/household OOP payment	Household OOP expenditure by definition is regarded as a financing scheme. Its distinguishing characteristic is that it is a direct payment for services from the household primary income or savings (no third-party payer is involved). The payment is made by the user at the time of the use of services. Included are cost-sharing and informal payments (both in cash and in kind). OOP expenditure (schemes) is characterized by the following: *Mode of participation:* Voluntary, based on the willingness and ability to pay of the individual or household, though the government or voluntary insurance scheme may specify the amount of payment that is required. *Benefit entitlement:* Contributory—the service is provided if the individual pays. *Basic method for fundraising:* Voluntary, based on the decision of the household to use the services, and therefore to pay for them. The government may indirectly subsidize some OOP expenditures through tax deductions or credits. *Mechanism and extent of pooling funds:* No interpersonal pooling. From a health policy perspective, it is important to distinguish between three main types of OOP expenditure: OOP excluding cost sharing (SCH.3.1); OOP cost sharing with government schemes and compulsory contributory health insurance schemes (SCH.3.2.1); and OOP cost sharing with voluntary insurance schemes (SCH.3.2.2). The role (share) of each of these subcategories and the changes in the share over time provide a more detailed picture of the burden of health financing on households than does just total OOP. Furthermore, the three types may provide important information about the effect of government intervention in health financing. Informal payments are considered as OOP payments and reported under SCH.3.1. **Note:** Only formal cost sharing is reported under SCH.3.2 (cost sharing with third-party payers).
SCH.04. External schemes (non-resident)	This item comprises financial arrangements involving institutional units (or managed by institutional units) that are resident abroad, but who collect, pool resources and purchase health-care goods and services on behalf of residents, without transiting their funds through a resident scheme. For example, a person resident in country A can buy voluntary insurance in country B and can use that insurance to pay for services in either country A or B. Non-resident schemes may also operate in the country for which the health accounts are produced, but these schemes originate with and are controlled by agencies subject to foreign government jurisdiction, including, for example, aid agencies and military agencies.
SCH.04. External schemes (non-resident)	Non-resident financing arrangements are defined according to the following characteristics: *Mode of participation:* (1) Mandatory, e.g. based on the conditions of employment (such as foreign insurance); or (2) voluntary. *Basis for entitlement:* (1) A contract between an insurance carrier and the individual; or (2) discretion of a private entity (charity foundation, employer,

	foreign entity). *Method for fund raising:* Funds are collected and pooled abroad. *Coverage:* Foreign entities usually have the freedom to design the benefits. Philanthropic entities, development agencies, or enclave organizations—services provided by resident providers to non-residents—are exports and include certain organizational units of foreign origin (non-residents) located within the country's territory, such as embassies, development agencies, international missions, free zone logistics parks, etc. They are labelled as 'enclaves'.

A1.4. NASA Classification of financing agent and purchaser (FAP)

A FAP is an institutional unit involved in the management of one or more SCHs: they implement the revenue collection and/or the purchasing of HIV services. There is not necessarily a one-to-one correspondence between SCHs and FAPs. One FAP can be involved in the management of several SCHs. Moreover, there are many countries where the relationship between SCHs and FAPs is rather complex and has changed considerably over the past years (Table A4). For example:

- The same FAP can serve as an agent for more than one SCH (e.g. private insurance corporations, besides offering voluntary insurance, may be involved in managing the social insurance scheme).
- FAPs belonging to different institutional sectors of the economy can serve as agents for the same SCH (e.g. the compulsory social insurance scheme can be managed—at the same time in each country—by both a social insurance agency and private insurance corporations).
- The same actor (e.g. the tax office) can act as a collecting organization for more than one SCH (e.g. central government scheme and social insurance, etc.).
- FAPs may manage the payment for services and goods in different ways:
    - Finance the services produced in its own institutions (e.g. a local government may own and finance a hospital).
    - Purchase services from providers owned by other entities (e.g. social insurance funds purchase services from hospitals owned by local governments).
    - Reimburse the cost of services to the patients who first pay the bill directly to the providers.

Table A4. Basic structure of FAPs

Primary breakdown 1st digit	Further disaggregation
FAP.01. **Public sector**	This code comprises all institutional units of central, state, regional, or local government, and public social insurance funds. Included are non-market non-profit institutions that are controlled and mainly financed by government units.
FAP.02. **Private sector**	Private social security, private insurance, household funds, non-profit institutions and corporations.
FAP.03. **International purchasing**	Country offices of bilateral agencies, multilateral agencies and international NGOs, projects within universities, international for-profit

Primary breakdown 1st digit	Further disaggregation
organizations	institutions.

A1.5. NASA Classification of HIV/AIDS spending category (ASC)

The HIV/AIDS spending classification (ASC) is a functional classification that includes the categories of: prevention, HTC, HIV care and treatment, social protection and economic support, social enablers, programme enablers and systems strengthening, development synergies, and HIV related research (Table A5).

The eight major programme areas encompass everything that is done to achieve and sustain control of the HIV epidemic in the country. Each subprogramme is further disaggregated into several subcategories which are unique to the programme area. In cases where the activities are not implemented distinctly, or the expenditure records do not disaggregate spending on them, then these may be captured under the most relevant subcategory not disaggregated (.98), or at the very least, under the major programme area, not disaggregated (code .98).

Table A5. Basic structure of the ASC classification

Primary breakdown	Further disaggregation
ASC.01. Prevention	Five pillars of prevention: adolescent girls and young women, KPs (different services for KPs disaggregated by each group), condoms, VMMC and PrEP disaggregated by KPs). Other prevention activities refers to those that are not listed under ASC 01.01, such as prevention of vertical transmission, condoms, behaviour change communication (BCC), community mobilization, etc. (these exclude all prevention activities targeting KPs and adolescent girls and young women), which are captured under AC.01.01.
ASC.02. HIV testing and counselling	HTC categories are disaggregated by nine groups of beneficiaries and three institutional testing groups: blood banks, provider initiated and mandatory tests.
ASC.03. HIV care and treatment	HIV care and treatment involves providing comprehensive medical care to individuals living with HIV at site level, which includes ART, ART related laboratory monitoring, retention, re-engagement and adherence interventions, and linkage to care. Co-infection and opportunistic infection screening, diagnostics, treatment and management (including TB and hepatitis), prevention and screening for cervical cancer.
ASC.04. Social protection and economic support	Social protection and economic support for people living with HIV, their families, and orphans and vulnerable children aims to improve their well-being and resilience. It includes measures such as financial assistance, education subsidies, and access to essential services like health care and nutrition (excluding KPs—any social protection and economic support targeting KPs should be captured under ASC 01.01.02).
ASC.05.	Social enablers are initiatives or factors that help create supportive social environments conducive to effective direct service delivery

Primary breakdown	Further disaggregation
Social enablers	(prevention, testing, and care and treatment services). Additionally, it also involves efforts to address societal factors such as human rights programmes, stigma and discrimination reduction that hinder access to HIV services and support. These interventions may target a specific population group (excluding those direct preventions services for KPs, vulnerable groups, etc., which are captured under ASC.01.01.02), but which cannot have a specific SDM since the activities are conducted above site level and not at service provision level. Social enablers that are part of preventive services should be categorized under ASC.01.
ASC.06. **Programme enablers and systems strengthening**	Programme enablers and systems strengthening are above service delivery level with no specific BP and SDM. They are considered strategic activities, focusing on building and enhancing the supportive structures and mechanisms necessary for the effective implementation of HIV prevention, testing, treatment and care initiatives. This includes activities aimed at strengthening health systems, improving infrastructure, enhancing human resources capacity, and developing policies and guidelines to ensure a comprehensive and sustainable response to HIV.
ASC.07. **Development synergies**	The term development synergies refers to the strategic alignment and coordination of various development efforts with HIV related initiatives to maximize impact and efficiency. This approach involves integrating HIV programming with broader development goals such as poverty reduction, reducing gender-based violence, promoting cross-sectoral development and education in human rights. By leveraging synergies between different sectors and programmes, this approach aims to address underlying social, economic and structural determinants of HIV vulnerability and improve overall health outcomes for affected populations.
ASC.08. **HIV related research**	HIV related research encompasses a broad range of scientific investigations aimed at advancing understanding of various aspects of the HIV virus, its transmission, prevention, treatment, and impact on individuals and communities. It includes biomedical, clinical, epidemiological, sociobehavioural, economic and vaccine related research.

A1.6. NASA Classification of beneficiary population (BP)

Spending on beneficiaries refers to expenditures on service programmes designed for specific population groups, with resources, inputs and providers selected based on best practices for these groups. The BP classification measures resource allocation toward particular groups as part of targeted programme interventions. Expenditures are categorized by beneficiary groups based on the intended purpose and target of the expenditure, regardless of its effectiveness or actual coverage.

If services aimed at the general population also happen to reach members of a key population, those expenditures should still be categorized under BP general population spending since they were not specifically tailored to meet the needs of a key population group.

The populations presented in NASA represent those specifically intended to benefit from certain HIV related activities and services. Identifying BPs helps quantify resources allocated to these groups. This

classification is based on the intended use of funds, rather than the characteristics of the population, to avoid mislabelling groups as high risk or priority populations based solely on certain attributes.

A NASA BP classification provides a comprehensive list of different population groups intended as beneficiaries of HIV related services, rather than a guideline to classify populations by risk or priority level. Beneficiary classification considers various attributes, such as demographic, geographical, socioeconomic, health status, and vulnerability. Key and vulnerable populations are a focus for prevention interventions and monitoring efforts, and the classification reflects these programmatic intentions (Table A6).

However, if an expenditure's target population is unknown, it should be labelled as non-disaggregated (BP.98), but this should be used as little as possible. Some expenditures may not fit neatly into subcategories when products and services are intended for broader populations, such as all people living with HIV regardless of age or gender (BP.01.98).

Non-service delivery activities, which do not have a specific target group, should be labelled as BP.05. Non-applicable (ASCs which do not have a specific BP).

Table A6. Basic structure of the BP classification

Primary breakdown 1st digit	Further disaggregation
BP.01. **People living with HIV**	This category pertains to people living with HIV, regardless of whether they have received a formal medical diagnosis. It encompasses all HIV care and treatment interventions under ASC 03, except for those related to TB interventions (which may be under BP 03.20). If data are available, it can be further disaggregated by age and/or sex.
BP.02. **Key populations**	Key populations in the HIV response refers to groups of individuals who are at a higher risk of HIV infection due to specific behaviours, conditions, or social and legal issues that increase their vulnerability. Key populations typically include sex workers, gay and other men who have sex with men, transgender people, people who inject drugs (PWID), and inmates/prisoners. These groups often face barriers to accessing safe, quality HIV services due to stigma, discrimination, violence and criminalization. Each KP has an assigned (BP) code that should be matched with its corresponding (ASC) code. For example, ASC.01.01.02.01 Programmatic activities for sex workers (SW) and their clients must be cross-classified with BP.02.02 Sex workers (SW) and their clients.
BP.03. **Vulnerable and accessible population**	This category includes specific vulnerable and accessible groups such as adolescent girls and young women, indigenous groups, soldiers, truck drivers, prisoners, refugees, migrants, orphans and vulnerable children, employees, health-care workers, etc. It excludes KPs.
BP.04 **General population**	In the context of HIV response, the general population (GP) refers to all people who are not part of the KPs or vulnerable populations. This group includes individuals from various demographics and backgrounds who may still be at risk of HIV but do not belong to specific high-risk categories. The focus for the general population is on broad prevention, education and testing efforts to reduce the overall incidence of HIV. If detailed information on age or gender is not available, the BP code should be BP.04.98, representing the general population not disaggregated by age or gender.

BP.05 **Non-applicable (ASCs which do not have a specific BP)**	This category is designated for interventions that are not specifically aimed at any particular BP. Instead, these interventions are cross-cutting, addressing broader issues that affect multiple groups and potentially have indirect or spillover effects. Examples include health system strengthening, development synergies, HIV related research, and coordination and management activities. These interventions contribute to the overall effectiveness of the HIV response by improving infrastructure, knowledge, and coordination, benefiting various populations indirectly.

A1.7. NASA Classification of service delivery modality (SDM)

Over the past decades, a range of innovative SDMs have been explored to provide comprehensive HIV services more effectively and efficiently, and to enhance retention and adherence to ART, but there was a lack of financial data in this area. The costs of specific services vary depending on the context for implementation and the components of the services.

The term SDMs refers to the location for the provision of services: facility or community based. This classification is not applicable to above-site spending categories (Table A7).

Table A7. Basic classification of SDMs

Primary breakdown 1st digit	Further disaggregation
SDM.01. **Facility based**	This modality includes: ambulatory care facilities, defined as medical care or treatment that does not require an overnight stay in a hospital or medical facility: clinics, fixed stand-alone voluntary counselling and testing sites, HIV centres, TB centres, and other specialized facilities, outpatient facilities. Includes integrated services. etc. In-patient facilities—defined as when patients are hospitalized for a certain period of time. Non-health facilities includes schools, universities, prisons, workplace, etc.
SDM.02. **Home and community based**	Community-based: centre, community pick-up points for ARVs (CPUP), automated dispensers, mobile units, mobile clinics, outreach (model of meeting potential beneficiaries in their own communities and in settings where they live, work, and socialize in order to link them to the preventive and treatment programmes), home-based.
SDM.03. **Self-service by the client**	This modality includes self-services and self-sampling by people and may include HIV and STI self-testing and other self-services. Self-service empowers people to find out their HIV or STI status wherever and whenever they want.
SDM.04. **Community-led activities (non-direct service delivery)**	This code can be applied exclusively for CLO activities that are not direct service delivery, such as advocacy and stigma reduction. It should not be used for delivery of community-based services (SDM.02). It should be used for all the ASC 06.05 activities: community and non-profit organization system strengthening and

Primary breakdown 1st digit	Further disaggregation
	community-based activities.
SDM.05. **Non-applicable (ASCs which do not have a specific SDM)**	This code is for those activities that are for services not directly for clients, and is applicable to all the above-site* spending categories. This category should exclude the CLO activities that may not be direct service delivery (which should be reported under SDM.04).

A1.8. NASA Classification of production factor (PF)

This guideline uses comparable breakdowns that can be easily 'cross-walked' to other reports. Production factor classifications relate to cost items and capture expenditure according to the standard economic classification of resources used to produce goods and services (Table A8). The classification includes two major categories: (1) current expenditures; and (2) capital expenditures. This classification includes breakdowns for each category:

Current expenditures refer to the ongoing, day to day expenses on items, commodities, goods and services necessary to sustain the production of services by the organization. These expenditures are typically recurring within the current year and cover operational and programme costs rather than investments in long term assets (capital expenditures).

Capital expenditures relate to the value of the capital assets that are acquired, disposed of, or have experienced a change in value during the period under study. The assets include new acquisitions, and major renovation and maintenance of tangible and intangible assets and include investments in information technology.

Table A8. Basic structure of expenditures in the PF classification

Primary breakdown 1st digit	Further disaggregation
PF.01. **Current expenditure**	Personnel costs: wages, fringe benefits, performance-based supplements (incentives) and consultants (external). Other operational and programme management expenses. Medical products and supplies (with disaggregation to specific pharmaceuticals and laboratory reagents. Contracted external services. Transportation for beneficiaries. Housing/accommodation for beneficiaries. Financial support for beneficiaries. Training costs. Logistics of events. Indirect costs (as labelled by PEPFAR implementing partners).
PF.02 **Capital expenditure/ investments**	Laboratory and other infrastructure upgrading, construction and renovation. Buildings. Vehicles. Information technology (hardware and software). Laboratory and other medical equipment. Non-medical equipment and furniture.

* Above-site level: Organizational units performing activities that support the broader programme or the health system, including programme management, strategic information, surveillance and health system strengthening (PEPFAR. 2021 country and regional operational plan (COP/ROP) guidance for all PEPFAR countries. Washington, DC: US Department of State; 2021).

Appendix 2: Planning the NASA study at country level

Once a country decides to conduct a NASA, the planning process begins. This includes defining the study's scope, determining the type of technical assistance required, establishing a steering committee, selecting data collection strategies, choosing and training the NASA resource tracking team, and organizing the data collection process.

A2.1. MAPPING OF ACTORS: IDENTIFYING KEY AGENTS AND PLAYERS

Consultants, with the support of NACs, should undertake a mapping of all actors involved in the HIV response at the national and regional levels. In addition, map donors, funding agencies and service providers should develop a comprehensive list of HIV stakeholders in the country with contacts details. The NACs should ensure that these details are leveraged to develop a data collection plan with timelines.

These stakeholders are relevant because they control one or more of the reporting flows and data repositories, contribute an interpretative approach to the data produced, and are among the first users of the results in policy-making, strategy and budget formulation, and M&E. The stakeholder database should be presented to the Steering Committee for validation.

The search for answers will help to decide where to focus the research team's efforts. Efforts in data collection should be proportional to the importance of the entity within the total expenditures. A literature review of the HIV epidemiology and previous spending will help to answer the following questions:

- In what geographical zones and human groups may there be a concentration of HIV?
- What institutions and entities have important participation in the administration of resources and the provision of services directed at combating the AIDS epidemic?
- What mechanisms do financial agents and health-care providers regularly use to obtain financial resources?
- How do government, external cooperation agents, businesses and households take part in the transfer of resources to service providers that promote prevention or care for patients with AIDS?

The identification of key agents does not limit those who participate as sources of financing or service providers. Other agents of importance for the study are those that:

- Control the access to sources of information, such as the central bank, statistics institutes, Ministry of Treasury (or public finance), financial entity of the MoH or the health secretariat.
- May contribute to the validation, analysis and interpretation of the data. In addition to the previous agents, this may add researchers, health policy analysts, officers in the national STD/HIV programme, and representatives from organizations providing preventive services or caring for people with AIDS.

There are major difficulties in estimating expenditures in HIV when key agents identified above are not involved in the early stages. These agents lend viability and feasibility to the study and contribute to the interpretation and application of results. Preliminary information prepared as technical arguments with policy implications may serve to involve and mobilize agents who can aid access to information sources, agents of interest as users of the results of the study, and agents that can mobilize resources (human, logistical and financial) to perform the study and disseminate its results. In particular, the following entities are important as key agents of a NASA:

- Health authorities must know about the study, its purposes, expected products and the contribution and support required from institutions.
- Representatives of external financial agencies that provide technical and economic support in the fight against AIDS must also be informed and encouraged to provide support to the initiative. These agents play a variety of roles because they have records of transfers, use this kind of information and, additionally, may contribute technical expertise and financial aid to the process.

- NGO coordinating agencies, sectors against AIDS and country AIDS thematic groups may favour communication about this initiative and help to obtain support from other institutions. Occasionally, there is some resistance by non-profit organizations and private practitioners that limits the flow of information, especially if it will end in the hands of the public sector. Therefore, it is convenient that the working group address doubts and establish guarantees for proper use and confidentiality of the information. The organizing group may present a draft informed consent form that may be signed by representatives of the entities, which details the information to be provided and the limits and confidentiality to be observed in the use of the names of such entities within partial and final study reports

A2.2. SENSITIZATION MEETINGS AND ACCESS TO INFORMATION (DATA)

A stakeholder NASA sensitization meeting is needed which will seek to build ownership of both the process and the results. In addition, the meeting will facilitate access to financial expenditure records by the research team. This will include key national HIV stakeholders, such as the NAC, government ministries, cooperating partners, civil society, communities affected by HIV/AIDS, and private sector—for example, the lead agency can be the NAC, with external support from UNAIDS.

Preparation of letters to institutions requesting access to financial expenditure records, as well as the required letters of permission to access provinces, districts, health facilities, etc. The lead agency (e.g. NAC) and UNAIDS will draft and sign the NASA introduction prior to data collection.

Introductory and permission letters play an extremely important role in the process of data collection. The introduction letters should explain the purpose of the NASA, its objectives, preparatory activities and expectations, as well as advantages of the data produced and how they might be used by government and decision-makers. The letters should be sent to the donors, public authorities and implementing institutions before they are visited for data collection. These communications should also specify who will visit the institution and when the visit is being requested, allowing the institution to request alternative visit dates, if necessary. The letters might be needed from the government entity that is leading the NASA process, such as the NAC, MoH, or others, and should be sent to all the respondents and sources of data.

In the case of public ministries and decentralized entities, these requests for cooperation should be directed to their higher authorities. Therefore, the requests to other ministries or secretariats, social security institutes and other national organizations should be sent to their permanent secretaries/heads of departments/directors or other senior personnel requesting their agreement for cooperation and their signed letters of permission. These letters of permission are usually required to access the ministries, district offices and facilities.

Information on external sources of funding and international cooperation may be received from international agency coordination centres, as well as from the Ministry of Finance and/or the Ministry of Foreign Affairs, or directly from the donors and organizations. For example, at UNAIDS, information may be found about the HIV projects supported by several UN entities and their executing entities. Information on PEPFAR expenditure should be received from the US Embassy, or PEPFAR implementing agencies such as CDC and USAID. Information management faces great challenges when trying to establish expenditures for HIV services within the private for-profit health sector (voluntary health insurances and private providers) and the OOP expenditures on these. Even with the support of representatives from the medical profession and health insurance schemes on the NASA Steering Committee/task force, who provide information on the care providers, the team may find that the access to the data is denied because of patient confidentiality. In such cases, the option may be to organize a Delphi process, combining questionnaires with discussion groups among private practitioners with expertise in the treatment of HIV patients.

A rough approximation combines the follow-up information: (1) Typical protocol for each service function; (2) the number of patients, covered by each protocol; and (3) average prices, in the private sectors, to estimate the OOP expenses involved in treatment offered by the for-profit sector. Another option might be the governing body of all the health insurance companies, which could provide the aggregated number of patients treated for HIV and the average cost per person per annum, as well as the ‘shortfalls’ which they would have paid out-of-pocket. In some countries, an alternative procedure

may be the combination of detailed surveys and focus groups to determine the patterns of expenditure among HIV infected individuals.

A2.3. DATA COLLECTION TOOLS

The leader of the Resource Tracking Team, working with the lead agency (NAC) will map the entities from which the data has to be collected and design the data collection forms. The quality of the NASA is heavily dependent on the quality of the data collected. The data collection forms must be user friendly and adaptable to different stakeholders from which data is to be collected. The generic templates of the data collection tool are stored in the NASA Toolkit.

A2.4. NASA CAPACITY BUILDING

Training materials and agenda can be prepared by the consultants and validated by the lead agencies and Steering Committee. The NASA training approach is discussed in the capacity building section and training materials are provided in the NASA Toolkit.

The data collection process and the quality of the data will depend greatly upon the profile of the data collectors and supervisors. If the persons involved in the NASA are experienced in health research, then emphasis should be placed on training them in the accounting logic and terminology. However, if they are more experienced in financial research and analysis, then emphasis should be on the terms and concepts relating to the HIV services in the response, including the prevention, care and treatment of HIV and the co-morbidities of TB or hepatitis, and also covering the acronyms used in the HIV field.

This data collection training should cover at least the following general issues but is not limited to:

- Expected objectives and results.
- Action plan with the timelines of data collection and supervisory activities.
- Operational definitions and abbreviations.
- Short review of the country's HIV programmes and services.
- Elements of the data collection tools to be applied—Excel, RTT (or any others)—their contents and purpose.
- Classifications and reconstruction of transactions.
- Approach to posing research questions or, in the case of literature reviews, defining the scope of the literature search.
- Recording responses and correctly capturing data in the tools, or, in the case of literature reviews, classifying the data in matrices.
- Recommendations for effective data validation during the data collection process.
- Discussion of the possible data collection challenges, limitations and their solutions.
- Guidelines for the presentation of the data for quality review and other aspects.
- Training materials and agenda are also described in more detail in the NASA Toolkit.

A2.5. LAUNCHING THE NASA

Once the scope and timelines of the study have been determined, the lead agency (NAC) should organize a stakeholders meeting to sensitize and get commitments from all the stakeholders involved in the national HIV programme to collaborate on the assessment. The NASA can be presented to key actors in a workshop where the value of the NASA and the utility of the data are emphasized, the data collection process and required data are explained and a schedule for data collection is defined.

A2.6. DATA COLLECTION

The data collection process begins with the training of the resource tracking team also known as the NASA team. The data collection period will be dependent on the intensity of the data collection process, as well as the complexity of the HIV response in the country (i.e. number of actors), the existing public financial information systems and the willingness of the national response stakeholders to share their expenditure data.

In the data collection phase, the progress level is recorded for each estimation component, and there should be checklists maintained by the supervisors to monitor progress along the data collection process, as well as quality control forms to cross check the accuracy and completeness of data collected. The entities from which data are collected, their addresses and contact persons are recorded. The entire information framework is completed, including demographic, epidemiological and economic data to help the estimation process (Table A9). The technical details of the data collection process are provided in previous section.

Table A9. Sources of data according to FEs and their providers

Financing entities	Service provider	Source of data
FE.03. International entities	Public sector providers	Records of external funding of the public sector.
		Budget execution reports from each entity.
		In each external financing agency.
	Private sector providers	In each external financing agency.
		In receiving entities (e.g. non-profit organizations).
FE.01. Public entities	Public providers/ministries/ facilities	Budget execution reports from entities executing HIV programmes in the MoH.
		Budget execution reports from entities executing HIV programmes in decentralized units.
		Budget execution reports from entities executing HIV programmes in special programmes (essential drugs, trust funds, etc.).
	Social security insurers	Budgets execution reports from medical care programmes (specifically STD/HIV in social security institutions).
		Reports of services contracted for HIV patients.
FE.02. Private entities	Non-profit organizations	Budget execution reports from the largest organizations in each main type of provider/service function.
		Reports on resources channelled towards HIV non-profit organizations by external agencies.

		Reports on resources channelled towards HIV non-profit organizations by government sources.
	Health insurers	Reports on services provided and claims for HIV coverage from private insurance and private social insurance.
	Businesses	Businesses survey by type of productive branch. Spending report on HIV activities (workplace, private clinics/hospital, other preventions).
	Households: OOP expenditures	HIV service provider survey.
		Pharmaceutical sector: importation and expenditures on condoms, antiretroviral medication and other medical supplies related to prevention and treatment.
		Secondary source: Home health expenditure surveys.
		HIV household survey: Interviews with people living with HIV.
		Expert estimates: Providers and activists from HIV self-help organizations.

A2.7. DATA PROCESSING

During this step, the collected data are checked for completeness and accuracy. They are processed and consolidated in the DCT (MS Excel based) and cleaned before it is imported into the RTT for analysis and further in Excel spreadsheets or into the RTT, or any other relevant available tools.

The collected data can be organized according to NASA matrices either in Excel spreadsheets or with assistance of the DCT or any other processing tool available in the country. In the DCT, the data input reconstructs each one of the transactions, checks up the data, and identify gaps, inconsistencies, or double accounting. The main products of this step are double entry tables describing HIV financial flows in several combinations of entities. The approach permits an easier input of data from different sources and texture and assists the national teams in the cross-checking of the estimates. It also facilitates compliance with the consistency and comparability criteria or attributes along time and across countries. It has a standardized categorization structure which can be validated and refined by national experience. The technical details of data cleaning and processing were provided in previously.

A2.8. DATA ANALYSIS

The complete and cleaned DCTs will be imported into the RTT that will generate graphics and output files in Excel format. These are checked for completeness, accuracy and inconsistencies. For consistency, the output is cross-checked with other information, such as national health expenditure and programme indicators involving the number of people living with HIV and AIDS. The Steering Committee should play a critical role during this process, by validating the preliminary results from the data analysis and providing guidance and direction to the refinement of the data. The technical details of data analysis were provided previously.

A2.9. QUALITY CONTROL

The first level of quality control is led by the NASA lead/consultants and conducted throughout the assessment by the NASA team, including during data collection and data processing, while entering data into DCTs and RTT and following the extraction of the data sets.

The second level of quality control is provided by the UNAIDS Global Centre—performing a review of transactions captured in DCTs and RTT.

A2.10. PRESENTATION OF RESULTS AND REPORT PREPARATION

The final results are usually shared with all the stakeholders for review and comments. A final meeting is held with the stakeholders to present the results. This also acts as the final validation, as during this process all stakeholders make their final inputs and comments.

A report is then drafted, after taking into consideration all the stakeholders' inputs, and this report should be shared with the members of the Steering Committee, UNAIDS and key technical partners for their input before it can be finalized.

An effort should be made to translate the results into useful data for decision-making and to promote political dialogue. The institutionalization of the resource tracking activities, the ability to overcome the hurdles of an assessment, as well as an educated policy dialogue (policy briefs) are the desired outcomes.

Appendix 3: Suggested outline of the NASA report

The NASA Toolkit provides updated guidance, including the suggested length for each section:

- Front cover/title page (please ensure that the country name is indicated and the years of study, with logos of government (NAC/MOH) or other lead agencies).
- Foreword and Acknowledgements (to be prepared and signed by the lead agency, NAC/MoH).
- Table of contents.
- Abbreviations.
- Executive Summary (this is a critical section and should not be left to the last minute. It must be reviewed by the country team and UNAIDS).

After the Executive Summary, it is useful to include a table which presents in summary format for quick reference the key NASA statistics in country (one page) which should include the following:

1. **Introduction and rationale** for the NASA (mention previous NASAs, though not in detail) (half a page).
2. **Country background:**

- HIV situation and highlights of the response in country (one page).
- General health expenditures (latest health accounts statistics, if available) and narrative description HIV funding landscape (light touch, key players) (one and a half pages).

3. **The NASA in country:**

Scope and objectives of the NASA in country (half a page).
Questions answered by the NASA:

- The usual generic NASA questions, plus others identified by the country:
- Was the spending on ART per ART client equitable across subnational regions? Have economies of scale been achieved? Are the average ARV unit/expenditure comparable to regional prices? What have been the absorption rates (where budget data can be obtained)?
- A specific focus on KPs, community-led responses and spending are required (since NASA classifications have better labels for these, they will require special efforts to identify and access them). Also, future commitments can be obtained from PEPFAR, Global Fund and perhaps government, and a future financial gap analysis done when comparing with future NSP costs. Discussions with the TWG are needed to consider issues of integration (where can the NASA data display efficient integration of service delivery?), sustainability of the response (increasing domestic resources/alternative financing schemes explored?) and institutionalization of resource tracking (steps required, improvements to the public financial information system).

- NASA methodology (detailed methodology can be moved to the appendices, do not describe the entire NASA framework here), brief notes can be prepared on each of the following:
  - NASA preparatory activities (half a page).
  - NASA study design, population and sampling approach (remember to include CLO identification and inclusion) (half a page).
  - Data collection (half a page), could include an overview of data collected (response rates by sector, type of data), or at the end of the methods section.
  - Data capturing and processing, data analysis and quality control (half a page).
  - Assumptions and estimations (two pages) (please detail where any assumptions or estimations were undertaken).
- Overview of data collected and missing data (half a page), including a summary table of response rates per sector, especially on CLO responses—either here or in Section 3.3.3 with data collection
- Limitations of the study (half a page*)* (indicate the magnitude of the problem and what was done to minimize the impact).

4. **NASA findings.** This is the core section of the report: It could be 20–30 pages in length, depending on the scope of the NASA, subnational disaggregation, etc. Note that a slide deck with all the analyses/figures/tables must also be created. The required elements of the findings section are as follows:
    - **Financial flows** related to the national response to HIV (RTT flow diagrams—if useful).
    - **Time trends in total spending** on HIV in country (years of previous and current studies). Only create this graph if the previous NASA finds were comparable, or with footnotes explaining where they might not be comparable, or where unusual fluctuations have occurred between years.
    - **Total expenditure on HIV/AIDS by FEs** in country (years of the current NASA study):
        - *Public entities:* Provide disaggregation where possible and useful.
        - *International FEs: Provide disaggregation where possible and useful.*
        - *Domestic private sector spending*: Provide disaggregation into the for-profit and non-profit sectors and OOP payments.
        - *Geographical split*: By FE (if subnational data have been collected, present SND × FE here).
    - **Revenues of SCHs**—Make sure correct terminology, presentation and interpretation are provided. Simply present the total HIV split by REV (do not undertake additional bivariate analyses as they confuse readers).
    - **Financing schemes**—Make sure correct terminology, presentation and interpretation are provided. Present the total HIV split by REV (do not undertake additional bivariate analyses as they confuse readers).
    - **FAPs**—Provide the total breakdown by FAP, and also one bivariate table (that provides helpful insights, e.g. FE × FAP or FAP × PS).
    - **Providers of HIV services**—Provide the total breakdowns by PF 1st digit, and undertake more detailed study into each category, especially regarding CLOs and their activities (as per adjusted NASA classifications). More detailed study into CLOs, their FEs, ASCs, SDMs, PFs and BPs (could be placed later in the report); the new NASA classifications provide better labelling of these categories.
    - **ASCs**—Provides total split by each ASC (1st digit programme areas), as well as FE × ASC (sustainability insights), and FAP × ASC.
    - **Geographical split**—By ASC (if subnational data have been collected, present SND × ASC here).
    - **More detailed study of each programme area:**
        - *Prevention activities:* More detailed study of the five pillars and others into KP interventions (sometimes countries require KP prevention + KP PrEP + KP HTC summed), prevention interventions by FEs, PSs (note the details of the CLO response, if possible) and by SDMs.
        - *HIV testing and counselling activities:* Total HTC split by sub-ASC, also HTC interventions by FEs, PS (note the details of the CLO response, if possible) and by SDMs.
        - *Treatment and care activities:* Total split by sub-ASC; also, treatment and care activity interventions by FEs, PSs (note the details of CLO response, if possible) and by SDMs.
        - *Social protection and economic support spending:* The total of this spending split by sub-ASC; also, these spending interventions by FEs, PSs (note the details of the CLO response, if possible). If there is only one major intervention (e.g. OVC support), or only one FE, then not much disaggregation is possible. Present what makes sense and is useful, and refer readers to detailed tables in the appendices.
        - *Social enablers spending.* The total of this spending split by sub-ASC; also these spending interventions by FEs, PSs (note the details of CLO response, if possible). If there is only one major intervention, then not much disaggregation is possible. Present what makes sense and is useful and refer readers to detailed tables in appendices.

- *Programme enablers and systems strengthening spending.* The total of this spending split by sub-ASC; also these spending interventions by FEs, PSs (note the details of CLO response, if possible). If there is only one major intervention, or only one FE, then not much disaggregation is possible. Present what makes sense and is useful and refer readers to detailed tables in the appendices.
- *Development synergies spending.* The total of this spending split by sub-ASC; also these interventions by FEs, PSs (note the details of CLO response, if possible). If there is only one major intervention, or one FE, then not much disaggregation is possible. Present what makes sense and is useful, and refer readers to detailed tables in the appendices.
- *HIV-related research.* Total research split by sub-ASC; also research types by FEs. If there is only one major intervention, or one FE, then not much disaggregation is possible. Present what makes sense and is useful, and refer readers to detailed tables in appendices.

- **HIV SDMs**—Provide total HIV spending split by SDM, as well as ASC (1st digit) × SDM. Carry out a more detailed study of CLO activities and their SDMs.
- **Beneficiaries of HIV spending**—Total HIV by BP (1st digit), more detailed study of BP 2nd digits (especially KPs), ASCs (1st digit) × BP (1st digit). Carry out a more detailed study of CLO BPs.
- **PFs of HIV/AIDS spending**—Provide total HIV spilt by PF (2nd digit), as well as FE × PF (can also just pull out HR and ARVs), **commodities spending by FE** (major FEs include: government, PEPFAR, Global Fund, non-profits, FPs)—essential for sustainability planning. Provide detailed ARV procurements by regimen, with quantities and unit prices in the appendices (as required for GAM 8.2).

5. **More detailed study of the community-led response.** Either insert CLO findings throughout the previous sections/vectors, or collect them into a separate section here.

6. **Allocative efficiencies and adequacy of funding.** This is a funding gap analysis (three–four pages), which compares spending versus estimated costs of the NSP where there is an overlap of year/s. This analysis helps to assess whether resources are being allocated efficiently to address the priorities outlined in the NSP, and can measure the potential funding gap for specific interventions (illustrating vulnerability/sustainability). To conduct this analysis, first obtain detailed information on the estimated costs outlined in the NSP, which will serve as a benchmark (try to obtain the Excel file with all assumptions and the targets used for the interventions). If available, compare with OPTIMA findings, or at least a more detailed study of the most impactful interventions (KPs, the other five pillars, etc.). Next, compare the actual spending data with the estimated NSP costs, in total and also across different programmatic areas, geographical regions, or specific interventions outlined in the NSP, where these can be directly compared (such as for ART). Discrepancies between estimated costs and actual spending can then be analysed to determine whether the actual spendings are aligned with the estimated proportional (allocative efficiency measure) or nominal costs (adequacy analysis) in certain programme areas or interventions. If actual spending falls short of estimated costs in certain areas, it may indicate inadequacies in funding, or unrealistic NSP targets and/or higher unit costs (e.g. ARV prices reduced during implementation). Conversely, if actual spending exceeds estimated costs in certain areas, it may suggest potential areas of overspending that require further investigation.

7. **Fund utilization and absorptive capacity** (one–two pages). This is a comparison of NASA expenditures with the budgeted/allocated/committed/distributed amounts for the same year/s by FE (government, PEPFAR and Global Fund only). If data are available, this analysis will highlight where underspending might need to be further explored and addressed.
   Also, consider adding a table of future budgets/commitments of the government (if an HIV budget exists), PEPFAR COP commitments and Global Fund grant allocations. These data will be extremely valuable to countries for their future planning.

8. **Technical efficiency analysis** (four–five pages). Calculate the units of expenditure for specific interventions (ART, HTC, VMMC, KPs, PrEP) by dividing the spending per annum on each by their actual numbers reached in those years and, if possible, per subnational regions (equity analysis—is the spending matching the burden of disease and harder to reach regions?). Also, show the unit of expenditure by PF, to show cost drivers and mapped against outputs/reach to show economies of scale. The units of expenditure can be compared with unit costs used in the NSP costing (if comparable) to show savings/inefficient spending and the impact of reduced prices, e.g. ARVs.

9. **Additional questions, as decided by the TWG and data availability:**
   - A focus on KPs, community-led responses and spending are required (now that NASA classifications have better labels, they will require special efforts to identify and access them).
   - The future funding landscape and future commitments can be obtained from PEPFAR, Global Fund and perhaps government, and a future financial gap analysis can be done to compare with future NSP costs.
   - Issues of integration (where can the NASA data display efficient integration of service delivery?), sustainability of the response (increasing domestic resources/alternative financing schemes explored?) and institutionalization of resource tracking (steps required, improvements to the public financial information system).
10. **Conclusions and recommendations** (two–three pages). The conclusions and recommendations should come from the discussions with stakeholders during the validation processes. Consultants can propose recommendations and should be creative (recommendations from previous NASA reports should not be copied). The country should show some commitment to undertaking the suggested recommendations—international consultants are expected to facilitate such conversations/commitments at the validation/dissemination meetings (obviously their actioning will be the country's responsibility, but stakeholders should be helped in applying the data and appropriate actions planned accordingly). Recommendations should not be so generic or vague that they cannot be actioned. In the next NASA, countries will be requested to report on how they adopted/actioned these recommendations.

11. **Appendices to be included:**

All NASA bivariate matrices. The essential tables should include, at the very least: FE × ASC, FE × SCH, FAP × PS, PS × ASC, FE × PF, ASC × PF, ASC × BP, ASC × SDM, PS × PF.

- Additional useful tables (need not be bivariate but 2nd, 3rd, 4th digit split of FE, ASC, PS, PF).
- GAM 8.1: Calculate the next year's anticipated growth in HIV budgets.
- GAM 8.2: Detailed ARV procurements by regimen per NASA study year, with quantities and unit prices in the appendices.
- GAM 8.3: This can be generated in RTT and submitted as attachment, rather than copied into the appendices.
- Data collection tools/schedule.
- Methodological details, assumptions, estimations.
- Lists of all respondents.

Table A10. Potential list of indicators that may be available from existing information systems to link to NASA data

Indicator	Source
No. of tests carried out for HIV (all types)	DHIS/HIV M&E indicators
Percentage of people testing HIV positive	DHIS/HIV M&E indicators
No. of people newly enrolled in care	DHIS/HIV M&E indicators
No. of people in care (cumulative)	DHIS/HIV M&E indicators
No. of people newly initiated on ART	DHIS/HIV M&E indicators
No. of people on ART (cumulative)	DHIS/HIV M&E indicators
No. of HIV positive pregnant women who received ARVs to reduce the risk of vertical transmission (B+)	DHIS/HIV M&E indicators
No. of males circumcised as part of the minimum package for male circumcision for HIV prevention services	DHIS/HIV M&E indicators
No. of people receiving PEP	DHIS/HIV M&E indicators
Prevention of vertical transmission positive infants	DHIS/HIV M&E indicators
Deliveries in facilities	DHIS/HIV M&E indicators
No. of test HIV kits distributed	LMIS
No. of condoms distributed (male/female)	LMIS
No. of ART distributed (by drug/regimen)	LMIS
No. of people who tested HIV positive	DHIs
No. of people receiving PrEP	DHIS/HIV M&E indicators
No. of people virally suppressed (use the UNAIDS/WHO SI-guide definition)	DHIS/ HIV M&E indicators
Prevention of vertical transmission/HIV positive infants after nine months and 18 months	DHIS/HIV M&E indicators
TB/HIV co-infection	DHIS/HIV M&E indicators

Appendix 4: Overview of resource tracking activities supported by UNAIDS and their characteristics

Approach / function/ characteristic of resource tracking option	NASA Basic	Standard NASA	NASA plus
Data collection approach	Desk review with some additional interviews	Full NASA approach with primary data collection	Usual NASA with extra effort for CLOs and TB
Time & resources required (NB. depends heavily on country context, complexity of HIV response and availability of datasets / accounting systems).	4 weeks US$ 10 000	4-6months US$ 30 000 - US$ 50 000	4-6months Std NASA cost ***plus*** US$ 5 000 – US$ 10 000
Frequency	Annually	Every three or four years (and 3 or 4 years of data are collected)	Every three or four years (and 3 or 4 years of data are collected)

Possibilities of data disaggregation based on data inputs

Approach / function/ characteristic of resource tracking option	NASA Basic	Standard NASA	NASA plus
PEPFAR total + by prog.area (broad categories)	√	√	√
Global Fund total + by prog.area (broad categories)	√	√	√
Government total + by prog.area (broad categories)	Estimation of shared costs	√	√
UN agencies total + by prog.area (broad categories)	√	√	√
Other bilateral contributions	√	√	√
All other international sources + by prog.area (broad categories)	If expenditure reports are provided	√	√
Private business sector		√	√
Out of pocket payments		√	√
Details of revenue and scheme (for deeper understanding of sustainable mechanism	Revenue might be inferred	√	√

Approach / function/ characteristic of resource tracking option	NASA Basic	Standard NASA	NASA plus
Details of financing agent-purchaser (for understanding co-ordination of response)		√	√
Details of types of service providers, **especially community-led organisations**		√	√
Detailed sub-programme / interventions (by funding source, FE & matched to ASC & NSP categories)	If provided by source	√	√
Service delivery modality (to show community-level services)		√	√
Detailed cost/ budget items (production factors), linked to intervention	If provided by source	√	√
ARVs	√	√	√
Detailed beneficiary insights		√	√

Additional analyses possible

Approach / function/ characteristic of resource tracking option	NASA Basic	Standard NASA	NASA plus
Extra detail on CLO operations and non-financial resources			√
Inclusion of all TB, hepatitus, STIs and other OI expenditures			√
Sub-national disaggregation		√	√
Financial gap analysis	High-level, if costing is available	√	√
Insights into allocative efficiencies		√	√
Insights into technical efficiencies		√	√
Units of expenditure		√	√
Insights into absorption rates	If budgets are available	√	√
Insights into public financial management & information systems		√	√
Adequate for GAM reporting	May miss some commodity detail	√	√

For futher information on UNAIDS resource tracking activities and data, please contact:

The Equitable Financing Practice, UNAIDS

https://hivfinancial.unaids.org/hivfinancialdashboards.html#

Other resource tracking tools and materials, can be found at:

UNAIDS
Joint United Nations Programme on HIV/AIDS

20 Avenue Appia
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41 22 595 59 92

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