

**Strengthening the Geographical Allocation of Resources  
within the Health Sector in Tanzania:  
Towards Greater Equity and Performance**

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June 2013**

## Executive Summary

**Background.** Since FY 2004/05, Health Basket Fund allocations to LGAs (as well as several other intergovernmental funding flows, including Health OC) have been distributed among local councils on the basis of an allocation formula (the so-called “70/10/10/10” formula) that includes four allocation factors: population (70%); the estimated number of poor residents (10%); the Burden of Disease, as approximated by Under Five Mortality (10%) and the length of the medical vehicle route (10%) as a measure of the higher burden of rural health service delivery. This allocation formula has remained unchanged since then. The current report provides a comprehensive review of both the design and use of the different resource allocation formulas within the health sector, in the context of broader government policy, and to recommend changes where necessary.

Two issues are given special consideration in the review and proposed revision of the allocation formulas. The first topic that is given special consideration is the equity of horizontal allocations. Although it is generally noted that the main problems with respect to geographical resource allocations in the health sector pertain to the PE portion of the local health budget, persistent questions are being raised with regard to the equity of sectoral resource distributions. The second topic that is given special consideration in this report is the desire of the health sector to incentivize the performance of local health services. We divide our discussion regarding possible performance incentives into two parts: first, incentivizing the performance of primary health facilities and front-line health staff, and second, stimulating the performance of council-level health management teams. We argue that separate incentive schemes are needed for these two components.

During our consultations, the general premise that resources should be distributed in accordance with the relative need for health services of each jurisdiction was generally accepted by all parties. This means that the main focus of our efforts is not on coming up with a completely new approach to allocating health resources, but rather, to consider how best to measure the relative need for local health expenditures. The starting point for any potential revisions in the allocation patterns is formed by the existing formula, which was based on the four factors which were believed to be the drivers of local health needs (population as the client of health services, poverty, burden of disease and the higher costs associated with health service delivery in rural areas).

Another important question or issue that was raised during our consultations was the question whether (council or facility-level) data from the HMIS system could be used as an allocation factor as part of the revision of the formula. For instance, wouldn't the number of out-patient department attendances be a better indicator for the need for health services in a catchment area (or in an LGA) when compared to the census population count? Our conclusion is that for a number of reasons, we should not expect the HMIS system to produce the type of attendance data (either at the council level or at the facility level) that would be useable as part of a resource allocation process in Tanzania in the foreseeable future. These reasons include the weak reliability of OPD attendance data in the HMIS system; the fact that OPD attendances are not a good measure of health needs (as the measure excludes unserved needs); and the inherent incentive for health staff to over-report OPD attendances if additional resources will be provided based on this figure.

Because it is critically important for that any changes to the health sector formula are discussed, agreed upon and owned by the critical stakeholders on the government's side (MOHSW, PMO RALG and

MOFEA), this report set out not to come up with conclusive recommendations, but rather, to provide inputs into the policy dialogue that would lead to a revised health sector allocation formula. The discussions and analysis in the current document therefore only provide initial or preliminary policy recommendations. It is expected that a second stage of policy discussions, analysis and decision-making will take place informed by the initial recommendations contained in the current report.

**General findings and recommendations.** Two general findings and recommendations flow from the analysis of existing resource allocation patterns within the health sector. First, if at all possible, the government and its donor partners should aim to use the same revised allocation formula for Government OC and the HBF, and for the formula to be adhered to strictly for both of these grant windows. (In addition, the allocation of local health staff and PE; the revision of the Health Sector Development Grant (HSDG/MMAM) and the drug allocation formula should be reviewed in accordance with the revised health sector formula. The details of these other grant schemes are discussed in the main report, rather than in the executive summary).

Second, we find that although there are problems with the measurement of specific elements of the main health allocation formula, the overall formula is well-known, transparent, and generally sound. The temptation should be resisted to make changes to the formula merely for the sake of making changes.

**Detailed preliminary recommendations with regard to the main health sector formula.** As a starting point for policy discussions between MOH&SW and the other (government and DP) stakeholders in the health sector, the following recommendations are made with regard to the revision of the main health sector allocation formula:

It is recommended to maintain the general shape and structure of the current allocation formula, as well as the current formula allocation proportions: 70/10/10/10. Before applying the formula to the OC grant pool, however, every council should receive a fixed lump sum of TSh 25 million for fixed overhead expenditures. In addition, every council that is more than 100 km away from its regional headquarters (one-way) should be provided an additional lump sum of TSh 25 million. In addition, 2 percent of the total OC block grant pool ought to be set aside for councils with extra-ordinary needs (as discussed further below).

With regard to population, it is recommended to rely on the census population counts for Census 2012 as the main measure for local health needs (70%), in recognition of the individual as the main client-recipient of local health services. While it is tempting to adjust the estimated service population of the Dar es Salaam municipalities as well as other urban LGAs downward, doing so would result in an unwarranted decline in urban health services. It is recommended that an improved mechanism is used to update the LGAs population estimates from year to year: whereas until now a uniform 2.9% per annum was used for each LGA, it would most likely be appropriate to base annual population estimates based on historical regional growth rates.

With regard to estimated poverty (10%) and burden of disease (10%), it is recommended to update the estimated poverty levels and the estimated Budget of Disease based on Census 2012 and the Household Expenditure Survey 2012. For urban councils, the Burden of Disease estimate should be based on the average urban U5MR. For rural councils, the updated Burden of Disease measure should be based on the average zonal U5MR. Under-five mortality rates should be updated regularly in the future as more up-to-date or more details figures become available.

With regard to the higher cost of delivering health services in rural areas (10%), the health sector is advised to consider replacing the DMO vehicle route mileage with a council's (capped) land area as a more representative measure for the higher health expenditures needs in more remote and rural areas.

Finally, while recognizing that local health care needs in Tanzania are far beyond the ability of existing resources to cover them, there are some districts in the country that have extra-ordinary needs that are not captured by the allocation formula (even after taking into account the recommended changes to the formula above). If MOH&SW can agree with other government stakeholders on a short list of councils with (objectively measured) extra-ordinary health needs, it is recommended that these councils receive an additional allocation of up to 2% of the grant pool.

***Recommendations regarding equity and performance.*** Our analysis and stakeholder discussions dealt extensively with the possibility of focusing the health allocation formula towards greater equity. On important concern acknowledged by most (if not all) stakeholders is the inequitable allocation of health PE resources, and the fact the certain geographical areas are under-served as a result. However, there are arguments both in favor and against trying to achieve greater "equity" by providing greater OC/HBF resources where local staffing or PE resources are inadequate. Instead of provide greater funding to areas that are "under-served", we suggest that it would be possible to include into the formula the number of residents that are "hard to serve" based on objective indicators of remoteness, lack of access, and current infrastructure. Depending on (a) the exact number of hard-to-serve residents (which would have to be determined in an analytical exercise) and (b) the additional cost for reaching these hard-to-serve residents, it might be possible to combined poor resident and hard-to-serve residents in a single allocation factor. Alternatively, the number of hard-to-serve residents in each council could be introduced as a separate allocation factor.

With respect to the introduction performance-based health financing, we believe that the P4P pilot in Pwani suggests that facility-level performance can be enhanced by providing a performance-based allocation to the facility level. However, care should be taken to integrate and mainstream any lessons from this pilot into the country's local health financing system. For instance, we do not recommend changing the formula or each council's recurrent allocations in response to better performance at the facility level in terms of health service delivery. In our view, it would not be possible to devise an efficient, equitable and incentive-compatible monitoring and verification scheme that would allow the health allocations of councils to go up and down in response to the quality of health services delivered. Instead, if the Government of Tanzania opts to adopt a country-wide performance-based health financing system for front-line health facilities, it is recommended that a fixed part (e.g., 10%) of the formula-based health OC grants and the HBF allocations (as described above) is set aside at the council level for stimulating the performance of primary health facilities within each local government.

Similarly, it is further suggested that rewarding the performance of council-level health management staff is perhaps best taken on board as part of the HSDG/Capacity Building Window, rather than by adding a performance element to the main, recurrent (OC/HBF) health allocation formula.

Finally, we note that there is only so much that the revision of the health sector formula can accomplish on its own. In order to achieve improved health service delivery performance and greater inter-district and intra-district equity, additional steps need to be taken to ensure that the funds reach the CHMTs and front-line health facilities as intended; that local health staff are capacitated, empowered and held accountable; and that the available financial resources are used for their intended purposes.

## Acronyms

AIDS	Acquired Immune Deficiency Syndrome
BHSP	Basic Health Services Project
CCHP	Comprehensive Council Health Plan
CHF	Community Health Fund
CHMT	Council Health Management Team
DDH	Designated District Hospital
DH	District Hospital
DLG	Directorate of Local Government (PMO-RALG)
DMO	District Medical Officer
DP	Development Partner
DSM	Dar es Salaam
FY	Financial Year
GBS	General Budget Support
HC	Health Center
HIV	Human Immuno-deficiency virus
HMIS	Health Management Information System
HSBF	Health Sector Basket Fund
HSDG	Health Sector Development Grant
IPD	In-Patient Department
LGA	Local Government Authority
LGCDG	Local Government Capital Development Grant
LGFA	Local Government Finances Act
LGFR	Local Government Fiscal Review
LGRP	Local Government Reform Programme
MOHSW	Ministry of Health and Social Welfare
MMAM	Primary Health Services Development Programme (Swahili acronym)
MOFEA	Ministry of Finance and Economic Affairs
MSD	Medical Stores Department
MTEF	Medium Term Expenditure Framework
NBS	National Bureau for Statistics
NCAP	National Aids Control Program
NGO	Non-Governmental Organization
NHIF	National Health Insurance Fund
OC	Other Charges (non-wage recurrent spending)
OPD	Out-Patient Department
P4P	Pay for Performance
PE	Personal Emoluments (recurrent spending on wages)
PER	Public Expenditure Review
PHF	Primary Health Facility (i.e., a Dispensary of Health Center)
PHSDP	Primary Health Services Development Programme 2007-2017
PMO-RALG	Prime Minister's Office – Regional Administration and Local Government
PO-PSM	President's Office – Public Service Management
RH	Regional Hospital
RMO	Regional Medical Officer
SWAP	Sector Wide Approach
TACAIDS	Tanzania Commission on AIDS

TDHS Tanzania Demographic and Health Survey  
 TSh Tanzania Shilling  
 U5M(R) Under-five Mortality (Rate)



Map source: HDS 2010.

Note: US\$ 1 is approximately TSh. 1,550 (March 2013).

# Strengthening the Geographical Allocation of Resources within the Health Sector in Tanzania: Towards Greater Equity and Performance <sup>1</sup>

## 1. Background

### 1.1 Context and objective of the study

**Background.** The Ministry of Health and Social Welfare (MOHSW) is in the process of formulating a national strategy for sustainable health financing. The Health Financing Strategy would provide the necessary financing comprehensive framework financing health services, so that an increasing number of Tanzanians will have access to quality health services with the eventual aim of universal coverage.

Given that a preponderance of health services in Tanzania are provided by district-level hospitals and primary health facilities which fall under the remit of Local Government Authorities (LGAs), ensuring adequate funding for local health services and making sure that these resources are distributed appropriately across the national territory is a major element of any health resource allocation strategy.<sup>2</sup> In Tanzania, there are various allocation formulas in place for public sector funding at present – for the Health Basket Fund, for the Other Charges component of the GOT recurrent budget, for the MMAM funding under the Development Budget (also referred to as the Health Sector Development Grant), and for drugs and medical supplies.

Concerns have been raised over the past few years both with regard to the design of the allocation formulas being used as well as with respect to the extent that these formulas are being followed. For example, the health sector Public Expenditure Review for the Financial Year 2009/10 noted that a review of actual expenditures by Local Government Authorities (LGAs) showed little correlation with the expected allocation as per formula. In order to ensure that that the financial resources that fund health services are distributed in line with the Government’s policy objectives, MOHSW and partners have decided to review the resource allocation formulas which are currently used for the horizontal allocation of sectoral resources.<sup>3</sup>

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<sup>1</sup> This study was prepared by Jamie Boex and Selemani Omari in June 2013 on behalf of the Health Finance Technical Working Group with support from the Royal Danish Embassy.

<sup>2</sup> The distribution of funding for across central, regional and local entities is sometimes referred to as the “vertical allocation of resources”. The distribution of financial resources across the national territory entities is generally referred to as the “horizontal allocation of resources”.

<sup>3</sup> In fact, one would not expect that actual health expenditures would follow an exact formula-based pattern, as expenditures are not only a function of the (formula-based) grant allocation during the current financial year, but also of balances carried forward. Furthermore, unpredictable resource flows, institutional obstacles as well as capacity constraints may prevent LGAs from spending their total available resources. Nonetheless, one would expect to see a relatively high correlation between the formula-based transfer pattern and actual expenditures.

**Objective of the study.** As such, the objective of this study is to provide a thorough review both of the design and use of different resource allocation formulae within the health sector, in the context of broader government policy, and to recommend changes where necessary. A more detailed list of this study's objectives is contained in Box 1.1.

In accordance with the TORs, the main resource flows that will be considered as part of the analysis will include:

- Government Health Block Grant – Personal Emoluments
- Government Block Grant – Other Charges
- Health Basket Fund Grant
- Allocation of resources for drugs and medical supplies
- Health sector development expenditures (MMAM / HSDG)

Although there are other sources of local health finance that form an integral part of health sector finance, the scope of the current assignment focusses predominantly on the health sector's core intergovernmental fiscal transfer schemes. As a result, less attention is paid in the current study to the role of local health funding from user fees, local own source revenues, community health schemes and other insurance schemes. Similarly, a number of vertical programs are considered to be outside the scope of this study, including central-local funding streams in support of HIVS/AIDS programs and other vertical programs within the health sector.

#### **Box 1.1. Specific objectives of the assignment**

According to the Terms of Reference (TORs) for this assignment (Annex A), the specific objectives of the assignment are as follow:

- To review current government policy and plans in relation to geographic resource allocation and the promotion of equity – both at council and regional level.
- To assess the availability and suitability of different possible data sources as measures of local health expenditure needs and/or for the revision of the health sector's allocation formulas.
- To assess the current resource allocation patterns in relation to the current formulas.
- To identify and assess ways of further promoting equity in the allocation process (in particular to provide recommendations on the proposed amendments in the World Bank project)
- To consider the appropriateness of an enhanced role for performance-based financing through (or alongside) the allocation formulas, and to assess whether this is compatible with the equity objective
- To review, update and/or potentially remove the following factors currently used in the formulae - population estimates, poverty, disease burden and mileage - and to assess the need, appropriateness, and reliability of other potential factors.
- To model the impact of different factors which might be used in the allocation formula, by comparing the amounts allocated using the current formula (as updated) to the amounts that would be allocated using these other factors.

In order to address the objectives of this study, the authors extensively consulted with the MOHSW, PMO-RALG and MOFEA, as well as with other key stakeholders in the health sector during January 2013. In addition, available data were collected regarding health financing flows for further analysis from MOHSW, MOFEA, and other relevant sources.



**Structure of the study.** The remainder of this report is structured as follows. The rest of this first section provides a “big picture” of local public health services and local public health finances in Tanzania (Section 1.2); a short history of health sector allocations in Tanzania (Section 1.3) and an overview of the political economy of health sector allocations in Tanzania (Section 1.4).

Next, Section 2 presents a quantitative analysis of the current distribution of local health resources. Section 3 discusses the methodological approach that forms the background for considering each current and potential allocation factor included in the formulas. Section 4 discusses the issues and options raised in our stakeholder consultations for strengthening the equity and efficiency of geographic resource allocations for the health sector. Section 5 presents our recommendations for strengthening the equity and efficiency of geographic resource allocations, including Sections 5.2-5.5, which provide specific recommendations for the various funding streams (PE, OC, HBF, drugs, and MMAM).

**Limitations of the study.** The current study covers the geographic distribution of a large share of health sector expenditures in Tanzania, covering both intergovernmental fiscal transfers from the central level to the local level, as well as (in-kind) resource allocations made from central government programs to the local level (e.g., allocations for drugs and medical supplies). Due to the breadth of the scope of the study, it is almost impossible to provide a comprehensive, detailed analysis of every aspect of health sector finance. As such, to the extent possible, this study will build on existing analysis, such as the *Health Sector Public Expenditure Review 2010/11* (MOHSW, 2012a), *National Health Accounts Year 2010* (MOHSW, 2012b), and *Making Health Financing Work for Poor People in Tanzania* (Haazen, 2012).

Since the intra-district dimension of geographical allocations patterns is coming into focus as an important area of concern, this study will seek to address issues related to within-district resource utilization. However, to the extent that this concern complements (rather than forms an integral part of) our TORs, and due to the difficulty in obtaining primary data at the health facility level, we rely primarily on secondary sources (such as CAG, 2008) in our exploration of this area.

Although a number of relevant data sources will be available in the near future, an additional limitation of the current study results from its timing: the figures from the population census 2012 are as of yet unavailable, not are the results from the Household Budget Survey 2012 currently publicly available. This limits the quantitative analysis that we are able to perform. Similarly, the team had difficulty in obtaining certain budget allocation figures (such as sectoral PE allocations by council for some years).

## 1.2 The big picture of local public health services and local public health finances in Tanzania

The first step in understanding and analyzing the decentralized funding of health services in Tanzania is to consider the “big” picture of local public health services and local public health finances in Tanzania.<sup>4</sup> This includes background information on the structure of the public sector in Tanzania; the vertical organization of health services; the legal assignment of functions and expenditure responsibilities in the health sector to different levels of government; the legislative context for local health finance; and the basic intergovernmental fiscal architecture of health finance.

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<sup>4</sup> This section draws in part on RNE (2008).

***The structure of the public sector in Tanzania.*** The public sector in Tanzania Mainland is divided into two government levels: the central government level and the local government level.<sup>5</sup> The central government comprises the ministerial level as well as the regional administration level. At the ministerial level, the Ministry of Health and Social Welfare (MOHSW) is the lead ministry for the health sector. In addition, some other central government agencies exist that have responsibility for specific health services (most prominently, the Tanzania Commission on AIDS, TACAIDS). At the regional level, Tanzania is divided into 25 administrative regions.<sup>6</sup> The regional level is merely an administrative tier of the central government. As such, the Regional Medical Officers in each region are primarily accountable to the MOHSW for providing regional health services and for supervising the delivery of health services in their region.

The local government level is divided into 147 district-level (urban and rural) Local Government Authorities (LGAs).<sup>7</sup> An average LGA has approximately 300,000 residents and is led by an elected local government council. This is the main government level responsible for the delivery of decentralized services in the country, including the delivery of local health services.<sup>8</sup> The most senior local official in the health sector is the District Medical Officer (DMO). The DMO is supported in managing local health services by the Council Health Management Team (CHMT).

***The assignment of functions and expenditure responsibilities in the health sector.*** The assignment of functions and expenditure responsibilities in Tanzania generally follows the subsidiarity principle, which suggests that public functions and service delivery responsibilities should be assigned to the lowest government level that can perform the function efficiently.

The roles and responsibilities of local government authorities are clarified in the Local Government (District Authorities and Urban Authorities) Acts of 1982 (as amended). The law assigns local government authorities the responsibility to “promote the social welfare and economic wellbeing of all persons within its area of jurisdiction” and requires LGAs to take all measures “for the furtherance of and enhancement of the health, education, and the social, cultural and recreational life of the people” (Section 111). The First Schedule of the Act specifically assigns LGAs the authority to “build, equip and maintain, or grant sums of money towards the establishment, equipment and maintenance of hospitals, health centers, maternity clinics, [and] dispensaries”.

***The vertical organization of health services.*** The health sector aims to deliver health services as close as possible to the populace. As such, the National Treatment Guidelines specify what health services should be offered at which facility type, and in which cases treatment should be referred to a higher facility level. As a result of the desire to deliver health service close to the populace, most common illnesses can be treated at the dispensary-level or at local Health Centers. Tanzania has a hierarchically organized public health care system, which is fairly typical for Sub-Saharan Africa. An overview of the

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<sup>5</sup> The current study focuses on Tanzania Mainland. The United Republic of Tanzania is a federation of Tanzania Mainland (formerly Tanganyika) and Zanzibar. The delivery of health services is not a Union affair, and therefore, health service delivery in Zanzibar is organized and funded separately from the mainland.

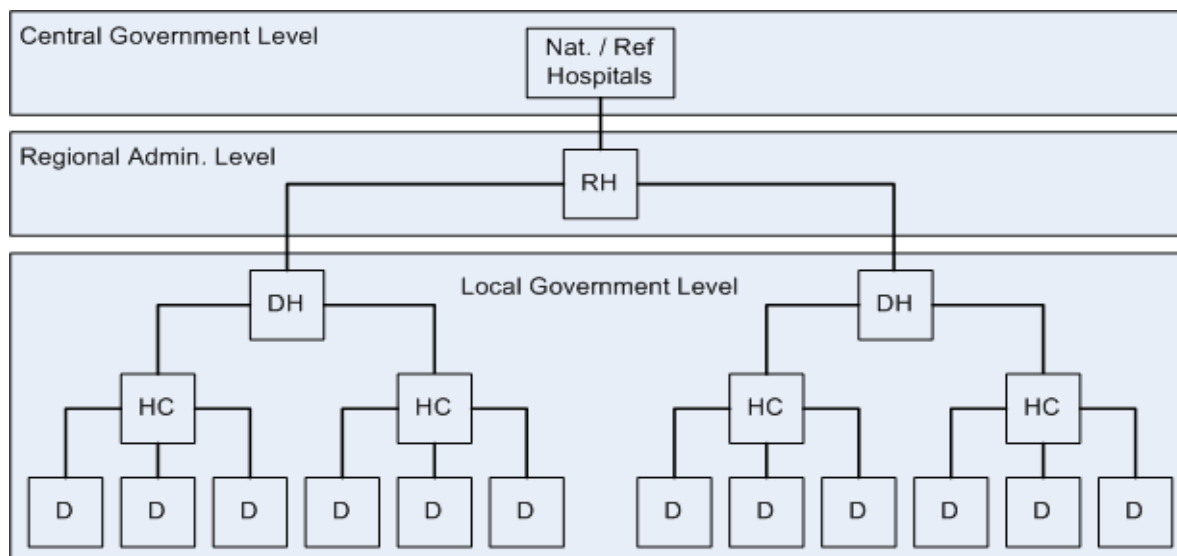
<sup>6</sup> Four new regions were created in Tanzania in 2011/12: these include Katavi Region (Vote 36); Simiyu Region (Vote 47); Njombe Region (Vote 54) and Geita Region (Vote 63).

<sup>7</sup> Until 2011/12, Tanzania Mainland had 133 LGAs.

<sup>8</sup> Although there is an elected tier of local government below the district in rural districts (comprising approximately 10,500 village councils), the village level does not have any substantive service delivery responsibilities.

organizational structure for the delivery of public health services is shown in Figure 1.1. In addition, Table 1.1 shows the distribution of health facilities by type and ownership for 2010.

**Figure 1.1**  
**Organizational structure for health service delivery in Tanzania Mainland**



**Primary health facilities (PHFs).** The two types of health facilities closest to the community in Tanzania are Dispensaries (D) and Health Centers (HC). There are currently approximately 3,250 public dispensaries in Tanzania, in comparison to 340 public Health Centers. The main distinction between Dispensaries and Health Centers is that while Dispensaries exclusively provide out-patient care, a HC should be able to provide around-the-clock care to patients; therefore, any conditions that require in-patient care are referred from dispensaries to the nearest Health Center. Health centers and dispensaries are the frontline in providing primary curative and preventative health services in Tanzania and are the main source of health services for the preponderance of the population, particularly in rural areas.

**Table 1.1: Distribution of Health Facilities in Tanzania by Ownership and Facility Type, June 2010**

	Hospital	Health Centers	Dispensaries	Total
Government	95	434	3,889	4,418
FBOs	101	134	625	860
Parastatal	8	10	168	186
Private	36	55	787	878
<b>Total</b>	<b>240</b>	<b>633</b>	<b>5,469</b>	<b>6,342</b>

Source: HMIS (2011)

Although these facilities operate with some degree of autonomy on a day-to-day basis, they report to – and are officially supervised in all aspects of their operations by- the District Medical Officer (DMO) of the local authority in which they are located.

Since primary health facilities –as well as the District Hospital- fall under the responsibility of the DMO, this has resulted in a relatively decentralized assignment of functional responsibilities to the local government level. While the DMO plays an important role in coordinating the delivery of local health

services in a council, he/she is supported by the CHMT and guided in this task by several key processes. In order to assure the coordinated delivery of health services at the local level, the DMO/CHMT is required to prepare a Comprehensive Council Health Plan (CCHP) which guides the delivery and development of health services. Furthermore, a system of committees (at the district level, but also facility-level) has been set up to assure participation, oversight and accountability over local health services.

The local government health budget is broken down into six cost centers: (a) Office of DMO; (b) Council Hospital; (c) Voluntary Agency Hospitals (VAH) / Service Agreement (SA); (d) Health Centers (public and VA owned); (e) Dispensaries (public and VA owned); and (f) Community health services. Generally, individual PHFs do not have their own sub-accounts as part of the local government's budget accounts in Epicor (i.e., resources flowing to individual health facilities are not identifiable in the budget).<sup>9</sup> In contrast, PHFs do have their own facility-level accounts with MSD for the purchase and distribution of drugs and medical supplies.

***Secondary and tertiary health services and the supply of medicines.*** Specialized health services within a district are provided by the District Hospital (DH). By their nature and location in the district town, District Hospitals tend to serve a more urban clientele. The District Hospital in each region's main urban center (city or town) is classified as a Regional Hospital, and serves as the regional referral hospital for the region. As such, in addition to its function as the district hospital, it also provides more specialized health services generally unavailable at the district level. In contrast to regular District Hospitals (which are funded through the district budget under the DMO), Regional Hospitals (RH) receive direct budget allocations from the central government budget through the budget of the Regional Administrative Secretary.<sup>10</sup> In addition, the council in which the Regional Hospital is located typically contributes a proportion of its budget for district-type health services when the RH also serves as the District Hospital.

The most advanced medical treatment within the public health system in Tanzania is provided by eight national, referral and/or specialized hospitals. These hospitals include Muhimbili National Hospital; Bugando Medical Centre; KCMC; Mbeya Referral Hospital; Muhimbili Orthopedic Institute; Ocean Road Cancer Institute; Mirembe Hospital (Dodoma) and Kibong'oto Hospital (Hai). These institutions operate as parastatals and receive their main budgetary resources as grants from the central government through the MOHSW budget.

In principle, all drugs and medical supplies –those funded by the Government, as well as those funded by external resources- are to be purchased through the Medical Stores Department (MSD). MSD is classified as an autonomous government department under MOHSW. As an autonomous operating unit, MSD has its own financial accounts and its operations are supervised by a Board which includes representatives from the MOHSW, other ministries and health agencies. In recent years, health facilities have been permitted to purchase some drugs from private-sector suppliers in case of MSD stock-outs. However, procurement obstacles in doing so have meant that the procurement of drugs outside of MSD has only taken place on a limited scale.

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<sup>9</sup> Primary Health Facilities are authorized to have a facility level account for the receipt of user fees and Community Health funds. CCHP Guidelines (July 2011) note that "Allocation of the Health Block grants and Basket funds for LGAs and VAs Health Centres and Dispensaries are mainly not in cash terms. For Health Centres and dispensaries that have no bank accounts, should maintain a vote book."

<sup>10</sup> In addition to the RHs themselves, a new group of upgraded FBO hospitals was recently established which are expected to function at the regional level as referral facilities.

**Private and faith-based health services.** While health services are predominantly provided through the local public sector in Tanzania, roughly a quarter of all health facilities are operated by the private sector, NGOs or faith-based organizations. For instance, while most districts have a government-run District Hospital, thirteen NGO hospitals operate as Designated District Hospitals (DDHs) in districts without a public hospital. In addition to an allocation from the local government council, these DDHs receive transfers from the MOHSW as well as allocations for drugs and medical supplies. Since this study focuses on publicly funded health provision, its focus will include private and faith-based health facilities to the extent that these health facilities receive resources or funding from the allocation mechanisms that are the focus of this study.

**Funding of local health services (legal framework).** The funding of local public services is guided by the Local Government Finances Act (Act 9, 1982, as amended). This law defines the own local revenue sources (including tax and non-tax revenues) that LGAs are allowed to collect and specifies the intergovernmental fiscal transfers that ought to be provided to local authorities. Although Tanzania lacks a local government finance policy,<sup>11</sup> as a general rule, local own source revenues are intended to be used for LGAs own priorities and exclusively local public services, such as solid waste management. In contrast, key social sector services such as basic education and public health services –which are national priorities but are delivered locally- are expected to be funded by sectoral “block grants” provided from the central government. Section 10A of the Local Government Finances Act states that:

“[T]here shall be paid annually to [each local] authority by way of block grants from the public revenue of the United Republic the following amounts, for which payment there shall be no further authorization other than this section, such sum as the Minister [responsible for local government] may after consultation with the Minister responsible for finance, determined as being the cost to be incurred by the [local] authority for development and maintenance of services particularly education, health, water, roads and agriculture... Payment of block grants ... may vary from one local authority to another depending on the grades and standards as may be prescribed by the Minister [responsible for local government].”

In other words, the Local Government Finances Act requires that the central government provide each LGA with a block grant which is determined as being the cost to be incurred by the local authority for the delivery of public health services.<sup>12</sup> The law further requires a formula-based approach to be used in determining the relative level of need for health services in each local government area. It is the legal responsibility of the Minister responsible for local government (i.e., PMO-RALG) to determine the block grant formulas (the “grades and standards”).

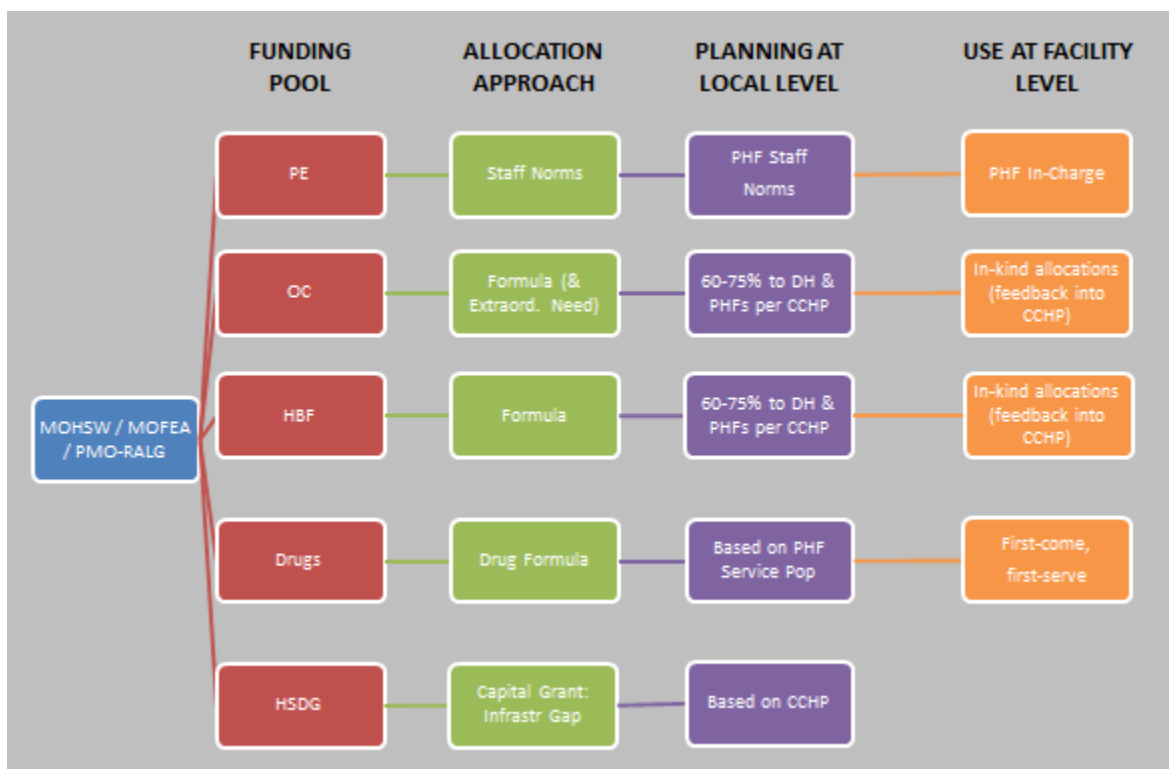
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<sup>11</sup> See Boex and Martinez-Vazquez (2006) for an overview of the local government finance system in Tanzania.

<sup>12</sup> The LGFA is unclear whether each council should be provided with a single block grant covering all (grant-aided) local public services, or whether a separate block grant is provided for each sector. As noted below, in practice, LGAs have been provided separate block grants for different sectors (and in fact, separate grants for PE, OC and development).

**Key resource flows flowing to the local level.** Figure 1.2 (below) captures the five main funding flows from the central level to the local level for the delivery of local health services.<sup>13</sup> Each of these funding flows is distinct and can be identified and traced separately in the budget process.

**Figure 1.2**  
**An overview of main resource flows for local public health services**



For each funding stream, four decisions connect the funding pool to the delivery of front-line services. First, the size of the resource pool (determined by the central government) determines overall resource availability. Second, the (formula-based or non-formula-based) allocation approach for each of the five main resource pools determines the horizontal distribution of resources among LGAs. Third, the planning process at the local (council) level determines the use of resources at the local level, including the share of resources that gets passed on the local health facilities and the intra-district allocation of resources. Finally, decisions are made at the facility-level that impact the effectiveness with which financial resources are used at the facility level. Whereas the geographical allocation of local health resources predominantly focusses on the allocation stage, this part of the funding process cannot be discussed separately from the other stages in the resources allocation chain.

<sup>13</sup> As noted earlier, this is not a comprehensive overview of local health resources. For instance, not included in the analysis are vertical programs, such as centrally implemented programs for HIV/AIDS through TACAIDS or other programs (e.g., Global Fund). Other local financial resources are not reflected either, such as user fees, own (local) revenue sources, or spending from community health funds and insurance funds.

### 1.3 A short history of the geographic distribution of health sector allocations in Tanzania

**Health allocations before 2004.** Prior to 2004, health resources were predominantly allocated on a discretionary or *ad hoc* basis. Staffing norms for existing health infrastructure guided the intended assignment of new local health staff and the associated wage expenditures (PE). In practice, however, staffing decisions (and PE allocations) were considerably influenced by the unwillingness of health sector staff to be posted to undesirable and remote locations (particularly in the absence of allowances incentivizing remote postings). Similarly, the allocation of drugs and medical supplies was based on a push system, where every dispensary and health center received a fixed supply kit, respectively, regardless of the service population of the facility (Boex and Msemu, 2007).

Prior to 2004, the only “formula-based” allocation of public resources in Tanzania was the Health Basket Fund Grant to LGAs. At the time, the HBF allocated \$0.50 per person to each LGAs. Compared to discretionary allocations, this allocation approach had many of the features of a good allocation approach: albeit simple, the allocation approach was objective, efficient, equitable, stable and transparent.

In contrast, Government OC resources were distributed in a discretionary manner. An analysis of health OC allocations for 2002/2003 indicated that only about half of the regional variation in per capita OC allocations could be explained by quantitative analysis (Georgia State University, 2003: 57). To the extent that variations in per capita allocations were non-random, the analysis revealed that a negative relationship existed between per capita health allocations and a district’s population size – this result is typical when some portion of financial resources is allocated as a fixed lump sum.<sup>14</sup> At the same time, per capita health allocations were found to be lower in local governments with a higher population density, although this result was not found to be statistically significant. Health allocations per person were further higher in regions where household incomes levels were higher, which suggested that resources were being funneled to more urban regions and regions with a higher demand for health services. In addition, it appears some efforts were made to allocate health resources in a pro-poor manner, as health resources were greater in districts where poverty rates were higher.<sup>15</sup>

**Introduction of the health sector formula (2004).** During FY 2004/05, the allocation of the Health Basket Fund and Government’s health sector block grants was switched to a formula basis. The health sector allocation formula (the so-called “70/10/10/10” formula) has remained unchanged since then, with four allocation factor used to allocate these resources:

- 70% in proportion to population
- 10% in proportion to poverty
- 10% in proportion to Under Five Mortality
- 10% in proportion to medical vehicle route

This formula was agreed by the MOHSW, PMO-RALG and MOFEA in September 2003 after extensive consultations with stakeholder ministries, local government authorities, civil society organizations and development partners in a process that was jointly led by the Ministry of Health and PMO-RALG. The allocation formula was decided after a careful study of the universal principles of sound grant design and after an analysis of potential data sources available as allocation factors.

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<sup>14</sup> It should be noted that in Tanzania, with the exception of the Dar es Salaam municipalities, the most populous local authorities are often rural districts.

<sup>15</sup> Also see Boex (2003).

In recognition of the individual as the main client-recipient of health care services, it was decided that 70 percent of the local health block grant would be distributed in proportion to the population of each district. In addition to the overall population, the formula allocates additional resources for three “special needs categories” namely the special needs of poor populations (10% of the grant resources),<sup>16</sup> the special needs of rural population (10%) and the needs of local governments with a higher Burden of Disease.

The formula recognizes the higher expenditure needs of rural areas by including the mileage of the route regularly travelled by medical vehicles. As such, the formula takes into account the higher operational cost of delivering health services to a rural population and to scarcely populated areas; including higher costs faced in drug distribution, immunization and supervision. The formula also aims at directing resources (10%) to places with high burden of diseases. The under-five mortality rate (U5M) is considered an appropriate proxy for burden of diseases. According to the Burden of Disease Profile the U5M takes up more than 75% of total years of life lost.<sup>17</sup>

***Implementation/adherence to the health formula.*** During the introduction of the formula-based recurrent grant system, the sectoral formula for health was not implemented as intended in the distribution of sectoral block grants. Whereas the original intention was to apply the allocation formula to PE and OC within each sector together, in practice, the sectoral formula was never applied to PE allocations, as human resource allocations continued to be determined independent from the OC allocation during the budget formulation process. In the absence of incentives or mechanisms to force (or incentivizing) qualified health workers to move to underserved rural areas, geographical health staff allocations have shown consistent deviations.

During the first few years after the (official) introduction of the formula-based grant scheme, an attempt was made to apply formula-based allocations to PE and OC together (see Box 1.2). Since PE resources were not distributed evenly across councils, health OC was not distributed strictly in accordance with the formula: instead, councils with less-than-their-fair-share of PE actually received a greater allocation of OC. Once unintended consequence of this arrangement was that some of the more remote and underserved LGAs accumulated considerable OC resources without having adequate administrative mechanisms to spend these resources.

By 2009, however, it was argued that the sectoral allocations for PE and OC should be separated and the sectoral formula should be applied exclusively to the OC portion of the government grants (Boex, 2009). In practice, it appears that subsequent to 2009, the health sector formula has been only followed partially in determining the allocation of local health OC resources; discretionary adjustments have been made to the allocations on a case-by-case basis to account for the extra-ordinary needs of some councils outside of the allocation formula. Similarly, some councils have been allocated less than their formula-based share. In 2010, adherence to the health sector allocation formula for government OC was

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<sup>16</sup> No district-level poverty counts were (or are currently) available in Tanzania. The allocation factor for poverty is therefore an estimate of the number of individuals within a district that live under the basic needs poverty line. The district poverty estimate is computed based on the Household Budget Survey 2000/01, which presents average urban and rural poverty rates, by region.

<sup>17</sup> No district level U5M data were available in 2004. Therefore, local U5M estimates included in the formula are based on the Reproductive and Child Health Survey from 1999, which presents U5M estimates for urban and rural areas.



approximately at 93% (based on the Index of Deviation). In contrast, the health sector formula seems to have been adhered to consistently in determining the distribution of the Health Sector Basket Fund grant to LGAs. A more detailed analysis of adherence to the allocation formulas for different grant windows is discussed in Section 2.

**Box 1.2 Recurrent block grants - ensuring equity by allocating PE and OC together**

As approved by Cabinet in February 2004, the original recurrent sectoral block grant formulas –including the Health Sector Block Grant formula- were to be applied to the allocation PE and OC resources together. By applying the formula to the total amount of local recurrent resources (PE and OC together), this would ensure an equitable distribution of recurrent sectoral resources.

Because PE allocations were already fixed by existing staffing levels, in practice, this would have meant that the OC allocation for each council was supposed to be determined as the balance between the total formula-based grant and each council’s PE allocation.

This automatically meant that ‘understaffed’ councils would receive a greater OC allocation. It was the explicit intention of the ‘surplus’ portion of the OC allocation to be used to strengthen local service delivery by providing incentive bonuses for hardship postings as well as for alternative service delivery approaches (for instance, see Boex/LGRP 2007, pages 9-10).

Although special holding-harmless and phasing-in rules were applied during the first few years after the (official) introduction of the formula-based grant scheme, health OC was generally distributed in an “equalizing” manner in the years following the introduction of formula-based grants in 2004.

**Reforms of drug allocations and capital development allocations.** Although the distribution of drugs is executed by MSD (as noted above), the allocation of drug resources is determined by the Chief Pharmacist. In 2007, the Chief Pharmacist moved to improve the allocation of drugs and medical supplies across local governments and local health facilities (Boex and Msemo, 2007). Previous to 2007, drugs (medicines) were generally allocated through a push-system which allocated primary health facilities the same drug kit, regardless of the facility’s service population. This resulted in major disparities in per-person drug allocations across local governments.

A formula-based approach to the allocation of drugs to local (primary) health facilities was introduced in 2010, as part of a two-step allocation process. As a first step, the resources for PHF drugs and medical supplies are now distributed across districts on a formula basis. The drug formula divides the PHF medicines resources among councils based on their population, poverty rate and under five mortality, weighted 70%, 15% and 15% respectively. Because in most cases MSD delivers the drugs and medical supplies directly to the local health facilities (and thus, the distribution cost of drugs is already included in the pricing structure of drugs), the medical vehicle route indicator was dropped from the drug equation.<sup>18</sup>

As a second step, these drug resources should now be distributed within each district (roughly) in accordance with each facility’s service delivery population. Guidance on how to do so is provided by MOHSW (MOHSW, 2010). The introduction of a formula-based allocation of drugs was a major

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<sup>18</sup> The allocation of drug resources is discussed in greater detail in Section 5.4.

improvement over the kit-based push system, which provided a dispensary with a service population of 30,000 with exactly the same amount of drugs as a dispensary with a service population of 3,000.<sup>19</sup>

In parallel to the development of a formula-based recurrent grant system, a formula-based development grant system was also put in place in 2004. Although the Local Government (Capital) Development Grant (LGDG) system originally only provided councils with a cross-sectoral allocation, in subsequent years, sectoral development grant windows were added to the LGDG system. In 2010/11, a Health Sector Development Grant (MMAM) window was added to the LGDG system. Ostensibly, the main health sector allocation formula (70% distributed in proportion to population, and 10% each in proportion to poverty, U5M, and DMO vehicle route mileage) was applied to this development grant window.

As will be discussed further in Section 4, this formula may not be appropriate to determine the allocation of health infrastructure resources, since the need for additional health infrastructure (relative to needs) depends as much on the need for health services as it does on the location of existing health infrastructure. While the main health sector formula attempts to measure the relative need for health services, this formula does not take into account the existing stock of health infrastructure.

***Run-up to the current review of the health formula.*** It was initially envisioned that each sectoral allocation formula would be reviewed (and revised as needed) every three years. Although no formula review of the health sector allocation formula took place in 2007, it was generally viewed that the health sector formula –to the extent that it was being applied to OC resources- was allocating resources in a satisfactory manner. Over the past few years, several public expenditure analyses have raised concerns with regard to the horizontal allocation of local health resources.<sup>20</sup> Although it is generally noted that the main problems with respect to geographical resource allocations pertains to the PE portion of the local health budget, persistent questions are being raised with regard to the equity of sectoral resource distributions.

During the initial stakeholder consultations that preceded the preparation of this report, different views were expressed with regard to the existing health sector allocation formula(s). Strong points of the existing formulas that were noted include the fact that the health sector formula has been objective, transparent and stable over time. Among its weaknesses, it was noted that the data on which the formula relies are increasingly outdated. Another concern shared by many stakeholders is the degree to which the formula is actually adhered to, both during budget formulation and budget execution. Issues of equity and the urban/rural balance of the current allocation formula were also raised by different stakeholders. Finally, the desire to review/revise the formula consistent with a performance-based system of health sector finance was also an important factor that many thought should be taken on board.

In other words, it was felt that both focus of Tanzania's health policy as well as the underlying economic fundamentals were changing over time, and that the time was right for a thorough review of the formula. While the team was cautioned not to pursue revision of the formula for revision's sake, the

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<sup>19</sup> See Boex and Msemu (2007); *New Resource Allocation Formula For Medicines And Health Supplies In Primary Health Care Facilities* (MOHSW, 2010); and *Resource allocation scheme for medicines and medical supplies for Hospitals - Proposal* (MOHSW, January 2012).

<sup>20</sup> For instance, see Boex (2009); Public Expenditure Review 2011 (PER Macro Group); Rapid Budget analysis 2012 (PER Macro Group); and Health Sector PER 2010/11 (MOHSW, 2012).

team was also advised not to unnecessarily stick to the existing formula merely for the benefit of stability and continuity.

#### 1.4 The brief synopsis of the political economy of local health sector allocations in Tanzania

The way in which budget allocations are made is reflected of not only technical considerations, but also, of prevailing political and institutional forces. In this regard it should be noted that the initial adoption of formula-based allocations took place during the final years of the President Mkapa's second term, who was a champion of a stronger, more transparent local public sector. As such, the 2003-04 period was characterized by strong institutional cooperation between the line ministries, PMO-RALG and MOFEA during the formulation and implementation of formula-based grants. This period was further characterized by positive, constructive relationship between the Government and the donor community at large.

As noted above, the original (70/10/10/10) health sector formula was agreed in 2003 after extensive dialogue between MOHSW, MOFEA and PMO-RALG, and was applied in FY 2004/05 to Health OC (in modified form, as part of the gradual introduction of the formula based recurrent grant system) as well as to the Health Basket Fund allocations to the LGAs.

Since FY2004/05, the distribution of HBF allocations has been prepared annually by PMO-RALG in consultation with MOHSW according to the same formula. The formula continues to rely on the same allocation factors and measures that were used in 2004; none of these allocation factors have been updated.<sup>21</sup> The only change made to the allocation process since 2004 has been the inclusion of several new districts that were established since 2004. The HBF may have been shielded from further political economy influences due to the fact that it is donor-funded, and the mechanism by which it is managed and flows to the local level has been stable and is widely accepted by all stakeholders.

The regular local budget formulation process has witnessed considerably more changes due to political economy forces. Prior to 2008/09, there was a division of responsibilities between the key stakeholders in the local budget formulation processes that resulted in a series of checks and balances. In this approach, the sector ministry had the technical responsibility to determine the allocation formula and the data sources for the relevant allocation factors; PMO-RALG applied the sectoral formula to the relevant data (to prevent any *ad hoc* allocations or any manipulation of data); and MOFEA executed the resource distributions. During this period, PMO-RALG prepared annual LGA Budget Guidelines. These LGA Budget Guidelines were released after the national budget guidelines were issued (typically in January/February of each year), and contained sectoral resource ceilings for each LGA, including formula-based allocations for Health OC, HBF allocations, and formula-based LGDG allocations (including formula-based MMAM allocations in later years). These LGA Budget Guidelines also sought to advise

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<sup>21</sup> As agreed by the key stakeholder ministries during the Coordinating Block Grant Implementation Team meeting of September 18, 2003, all demographic variables will be inflated uniformly across all LGAs by 2.9 % per annum. This will not alter the relative allocation of resources under the formula between councils, while recognizing that the overall number of clients served by the resource envelope increase from year to year. This decision was taken in order to maintain uniformity in the population estimates, and to prevent different line ministries from coming up with their own (potentially biased) population estimates.

LGAs of their PE allocations.<sup>22</sup> In this system, there were always two stakeholders verifying that the third stakeholder was fulfilling its part as agreed. This system remained in place until 2008/09.

This system shifted considerably in FY 2009/10. In this year, MOFEA sought to streamline the budget formulation process and decided to integrate the LGA Budget Guidelines into the national Budget Guidelines. This shift reflected a relative shift in the relationship between the various stakeholder ministries, with the role of PMO-RALG substantially weakened, and a decline in the transparency of the resource allocation process. In the new budget formulation process, MOFEA/ACB/RALG prepares the local resource allocations for all OC grants (including Health OC) as well as domestically funded development expenditures. While it continues to use the formula-based allocations as a guide, there are no formal or informal processes of consultation or verification that the formula is being followed before the LGA resource ceilings are issued to the councils. On the development side of the budget, consistent with the MOU between the Government and its development partners, PMO-RALG continues to prepare the resource ceilings for the Local Government Development Grant (LGDG) system, including the MMAM window. Similarly, MOFEA continues to count on the input from PMO-RALG in order to determine the allocation of other DP-supported grant schemes, including the allocation of local HBF allocations, which continue to be determined by PMO-RALG in collaboration with MOHSW.

**Box 1.3 The absence of a formal coordination mechanism between PMO-RALG, MOFEA and sector ministries with regard to formula-based block grant allocations**

One of the reasons why the initial implementation of the formula-based recurrent grant system in 2003/04 (and the introduction of the current health sector block grant formula for the HBF) was the institutional cooperation between PMO-RALG, MOFEA and the various sector ministries, including the Ministry of Health. This cooperation was structured through an inter-ministerial Coordinating Block Grant Implementation Team, as well as a sector-specific Block Grant Implementation Team.

This coordinating mechanism stopped functioning effectively around 2006, resulting in a reduction of the coordination between different institutional stakeholders. The absence of a formal coordination mechanism between PMO-RALG, MOFEA and sector ministries with regard to formula-based block grant allocations means that there is no formal, systemic mechanism to discuss and resolve issues related to the health sector formula, such as:

- How often, when and how should recurrent / development allocation formulas be updated?
- When / how should population data and other demographic allocation factors be updated?
- When / how should other allocation factors be updated? For instance, why did under-five mortality estimates or poverty estimates not get updated since 2004?
- Through what mechanism do transfer allocation factors get updated when new districts or new town authorities are created?
- How is information shared about formula-based sectoral block grants and other (formula-based) grant allocations during the budget formulation process? Similarly, what mechanism is available for sectors to learn about the distribution of actual transfers during the budget year, to make sure that sectoral grant allocation are made during the budget year in a timely, complete, and consistent manner (in accordance with the allocation formula).

Re-establishing a platform for inter-ministerial coordination and cooperation surrounding the financing (and delivery) of services should be a major priority for the revitalization of dwindling local government reform efforts.

<sup>22</sup> Local PE allocations are prepared by PO-PSM outside the regular local budget process. Local PE disbursements are managed by MOFEA/ACB/Payroll instead of MOFEA/ACB/RALG.

## 2. An analysis of the distribution of local health resources

The main resource flows for local public health services that are highlighted in Figure 1.2 include Health PE, Health OC, Health Sector Basket allocations, allocations for drugs and medical supplies, and Health Sector Development Grant (HSDG) allocations. The vertical and horizontal (geographical) distribution of four of these five funding flows can be tracked through central budget formulation and execution processes. The only funding flow for which the vertical and horizontal distribution cannot be tracked through the regular budget process is drugs and medical supplies, as the distribution of these resources among LGAs and local health facilities is made by MSD (based on instructions from the Chief Pharmacist).

This section will provide an overview of the vertical and horizontal allocation of the other four funding flows. This section is not intended to provide a comprehensive analysis of local health financing flows in Tanzania over the past several years. Instead, the intent of this background analysis is to provide a general analytical background to the discussion of the geographical distribution of intergovernmental funding flows. For instance, what is the variation in (per capita) allocations for each of the funding streams? Are the various local budget allocations “fair” in terms of adhering to the formula basis? And are the formula-based allocation patterns followed during budget execution? Naturally, the depth with which these questions can be answered is limited by the availability of data.<sup>23</sup>

### 2.1 An overview of local health resources

The starting point for the analysis of the geographic allocation of local health resources is provided in Table 2.1. The table summarizes the MTEF budget allocations for local health transfers for FY 2012/2013, and reveals a considerable degree of variation in the per capita allocations of health resources between LGAs.

**Table 2.1 Descriptive statistics: MTEF Budget Allocations for local health transfers, FY 2012/13**

	PE	OC	HBF	HSDG	Other
Total (TSh bn)	303.2	32.3	89.3	20.0	20.8
Per Capita Average (TSh)	8,099	846	2,117	475	631
<i>Per Capita Avg - Urban</i>	<i>10,293</i>	<i>908</i>	<i>1,894</i>	<i>424</i>	<i>911</i>
<i>Per Capita Avg - Rural</i>	<i>7,560</i>	<i>831</i>	<i>2,172</i>	<i>488</i>	<i>562</i>
St Deviation	4,246	392	245	70	763
Coefficient of Variation	0.524	0.464	0.116	0.147	1.209
Minimum	2,252	385	1,763	209	288
Maximum	29,124	2,991	3,915	892	7,374
Max/Min	12.9	7.8	2.2	4.3	25.6

Note: The category ‘other’ includes HIV & AIDS allocations to the local level, grants from the USAID WAJIBIKA project; Global Fund allocations; and local development grant for hospital construction. Source: Budget data provided by MOFEA.

The table clearly reveals different levels of geographic variation for different funding streams, however. For instance, of the four main funding streams, the allocation of Health PE displays the greatest degree

<sup>23</sup> One notable limitation is the absence of up-to-date population data (which should be forthcoming from the Population Census 2012). Inaccurate population data has considerable potential to distort the per-capita transfer analysis.

of variability across districts, followed by Health OC. The variation across districts for HBF and MMAM is considerably lower. Another notable pattern is that whereas urban LGAs are budgeted to receive greater PE and OC allocation per person on average, this tendency is reversed for the HBF and MMAM. Both trends are indicative of a failure to follow formula-based or norm-based allocations for the government's recurrent sectoral allocation, whereas it appears that the formula is more carefully followed for the HBF and MMAM. The more detailed analysis below will confirm this observation.

## 2.2 The horizontal distribution of local health PE resources

The descriptive statistics in in Table 2.1 show that there is considerable variation among local health PE resources: whereas an average LGA receives a grant for health PE equivalent to TSh 8,099 per capita, the range of grants received in fact ranges from a minimum of TSh 2,252 per capita (Njombe Rural) to a maximum grant of TSh 29,124 per person (Pangani). Even without further analysis, it is evident that Pangani's expenditure needs for health staffing are not ten times greater per person than Njombe District. Instead, the variations in PE allocations instead are driven by a variety of other factors, including historical patterns, political and institutional decision-making processes, and a high degree of discretionary variation that cannot easily be attributed to any single factor.

However, comparing the extreme values (the minimum and maximum) of the range of per capita grants does not give an accurate picture of the overall horizontal distribution of local health PE resources. By definition, this measure is driven by outliers. For instance, the sizeable maximum-minimum ratio hides the fact that out of 135 LGAs, 114 councils (84%) receive per capita grants that fall in the range of TSh 4,000-16,000 (which reflects the range between half of the average per capita grant to twice of the average grant).

It is in fact not easy to tell how equitable or inequitable a resource distribution is based on descriptive statistics alone. Indeed, we do not expect health expenditures per person to be exactly the same in every LGA. We would expect that places with higher expenditure needs in the delivery of health services receive greater transfers, whereas LGAs with relatively smaller needs receive fewer transfers. The current health formula presumes that councils with greater poverty, burden of disease and DMO route mileage, have greater health needs. In fact, under the current formula-based health sector grant (if fully adhered to), the council deemed to have the highest needs (Pangani) would receive an allocation that is 2.2 times greater than the council that –according to the allocation formula- is deemed to have the lowest per capita grant allocation (Kinondoni). This means that if the formula-based allocation were adhered to, we should expect to observe health PE grants a range roughly from TSh 5,000 – Tsh 11,000 per capita (based on an average per capita grant of TSh 8000).

In order to better understand the horizontal distribution of resources, we are forced to move beyond the descriptive statistics in Table 2.1 to see whether the LGAs that receive greater transfers are in fact those councils that have higher needs. This requires us to compute a special measure in order to quantify how closely the budgeted grant allocations match the “ideal” formula-based allocation pattern. This measure of convergence is known as the Index of Fit (IOF), which is explained in greater detail in Box 2.1 below.<sup>24</sup> The IOF ranges from zero (completely imperfect fit; 100% redistribution needed to attain same pattern) to one (100% fit; no redistribution necessary to attain perfect fit).

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<sup>24</sup> As part of the analysis worksheet that is contained in the Excel-based Simulation Model that accompanies this report, the simulation model computes the IOF for any of the allocation patterns included in the model.

### Box 2.1: Comparing two different allocation patterns using the Index of Deviation / Index of Fit

The first step in computing an Index of Fit is to compute its inverse, the Index of Deviation (IOD). The Index of Deviation is defined as half of the sum of absolute deviations for each observation between one allocation pattern (for instance, the formula-based grant amount) and another allocation pattern (for instance, a non-formula based allocation), expressed as a share of the total grant pool allocated. (In case the analysis is comparing distribution patterns that do not allocate the same total grant pool, one of the allocation patterns would have to be adjusted so that the total grant amount between the two scenarios is the same.) The interpretation of the IOD allows for comparisons across grant schemes, as the measure indicates the share of the grant pool that would have to be re-allocated from one group of local governments (i.e., those that received “too much” according to the formula) to another group of local governments (those that received “too little”) in order to achieve perfect adherence with the formula-based pattern. As a result, the IOD varies in its extremes between zero (indicating no divergence from the formula-based pattern) and unity (indicating complete divergence from the formula-based pattern). The Index of Fit (IOF) can then be defined as 1 minus IOD. An example may be useful in illustrating the use of the Index of Deviation / Index of Fit.

The table below shows 3 districts (District A, B, and C), each of which ought to receive a certain formula-based grant amount (Column I), and each of which in reality receive an actual grant amount different from the formula-based amount (Column II). The total grant pool distributed in this example (both in Columns I and II) equals TSh. 1000. Column III shows the absolute difference between the grants received by each district and the formula-based grant; for example, the absolute difference for District A is 220-200=20. Next, we compute the sum of this the absolute differences. In the example, the sum of the absolute differences is 240 (bottom Column III). When the totals of Column I and II are the same, 50 percent of the sum of the absolute differences (the number 120 in this example) has a practical interpretation: you would have to take 120 Shillings away from some local bodies and distribute it to other local bodies in order to achieve the same grant incidence pattern (or fit) between the two grant patterns.

Example of Index of Fit					
Districts	I. Formula	II. Actual	III. Absolute Difference	IV. Received too much	V. Received too little
A	220	200	20		20
B	600	500	100		100
C	180	300	120	120	
<b>Total</b>	<b>1,000</b>	<b>1,000</b>	<b>240</b>	<b>120</b>	<b>120</b>
<b>IOD</b>			<b>0.120</b>		
<b>IOF</b>			<b>0.880</b>		

Next, the Index of Deviation (IOD) is computed by dividing 50% of the sum of absolute differences (50% \* 240 =120) by the total grant pool (1000) in order to express the IOD as a percentage. In the example, the IOD of 0.120 suggests that 12% of the grant pool would have to be redistributed from one set of councils to another in order to achieve an identical “fit”. In the most extreme cases, the IOD would range from zero (no difference between the two patterns) to one (completely imperfect fit; redistribution of all resources is necessary to achieve fit). Finally, the Index of Fit (IOF) is defined as 1-IOD. The IOF ranges from zero (completely imperfect fit; 100% redistribution needed to attain same pattern) to one (100% fit; no redistribution necessary to attain perfect fit).

If we were to assume that the current health sector formula (70/10/10/10) would be a reasonably fair way of allocating Health PE resources across LGAs, the IOF would be able to tell us how closely the actual distribution of local PE resources matches this formula-based “ideal” allocation pattern. Based

on the budget estimates for local Health PE for FY 2012/13, computations reveal that the Index of Deviation is 0.180 and the Index of Fit is 0.820. In other words, 18% of the TSh 300 billion PE grant pool (TSh 54 billion) would have to be shifted away from one set of councils towards another set of councils in order to exactly achieve the formula-based allocation pattern. Table 2.2 shows that the Index of Fit for Health PE has been slowly but steadily declining since 2005/06, although the degree of variation seems to have (hopefully) bottomed out.

**Table 2.2 Index of Fit for Health PE allocation: 2004/05 – 2012/13**

Financial Year	IOF
2004/05	0.849
2005/06	0.859
2006/07	0.844
2007/08	0.834
2008/09	0.833
2009/10	0.829
2010/11	N/A
2011/12	N/A
2012/13	0.820

*Source: PMO-RALG (2009) and computed by author based on MOFEA data.*

### 2.3 The horizontal distribution of local Health OC, Health Basket Fund and MMAM resources

Compared to PE, how are OC, HBF and MMAM resources distributed across the national territory? Index of Fit analysis based on budget estimates for FY 2012/13 is presented in Table 2.3 below. The patterns confirm the initial conclusions already made based on Table 2.1 above: whereas there is some divergence between the formula-based allocation pattern and Health OC (with a deviation of 7.4%), both the Health Basket Fund as well as the MMAM allocations confirm either perfectly or very closely to the formula.

**Table 2.3 Index of Fit for budgeted health sector allocation: 2012/13**

Funding source	IOF
PE	0.820
OC	0.926
HBF	1.000
MMAM	0.983

*Source: Computed by author based on MOFEA data.*

For budgeted Health OC allocations, comparable historical data are available for previous years, which are presented in Table 2.4. The Index of Fit values shown in the table suggest that the degree of adherence of Health OC to the current health sector allocation formula (70/10/10/10) has been more or less static over the past five years, with only minor fluctuations. Budgeted Health OC figures over the last few years have been largely static, with some minor incremental adjustments taking place from year to year for a handful of LGAs.



**Table 2.4 Index of Fit for budgeted Health OC: 2009/10 -2012/13**

<b>Financial Year</b>	<b>IOF</b>
2008/09	0.919
2009/10	0.928
2010/11	0.915
2011/12	0.925
2012/13	0.926

*Source: Computed by author based on MOFEA data.*

Limitations on data availability have made it difficult for us to conduct a comprehensive analysis as to whether each funding window is implemented strictly in accordance with the budget. In particular, irregular reporting by MOFEA on transfer releases to LGAs has meant that the necessary data are unavailable to verify that HBF allocations and MMAM allocations have been implemented strictly in accordance with the allocation formula. Anecdotal evidence, however, suggests that the HBF and MMAM funding flows tend to be disbursed consistent with the health sector allocation formula.

Budget data were available, however, to look at the execution of Health OC releases for FY 2010/11 and FY 2011/12. The results of the Index of Fit analysis for these two years are presented in Table 2.5 below. As shown in the table, disbursement patterns in FY 2010/11 appear to have been disrupted due the fiscal crisis of that year. It appears formula-based allocations were abandoned during budget execution, resulting in a reduction in the IOF during budget execution from 0.915 to 0.883. Not shown in the table is the severity of the disruption caused by the fiscal crisis: of the budgeted TSh 32.9 billion in Health OC transfers for the year, only TSh 19.3 billion was ultimately released.

**Table 2.5 Index of Fit for Health OC: 2010/11 -2011/12**

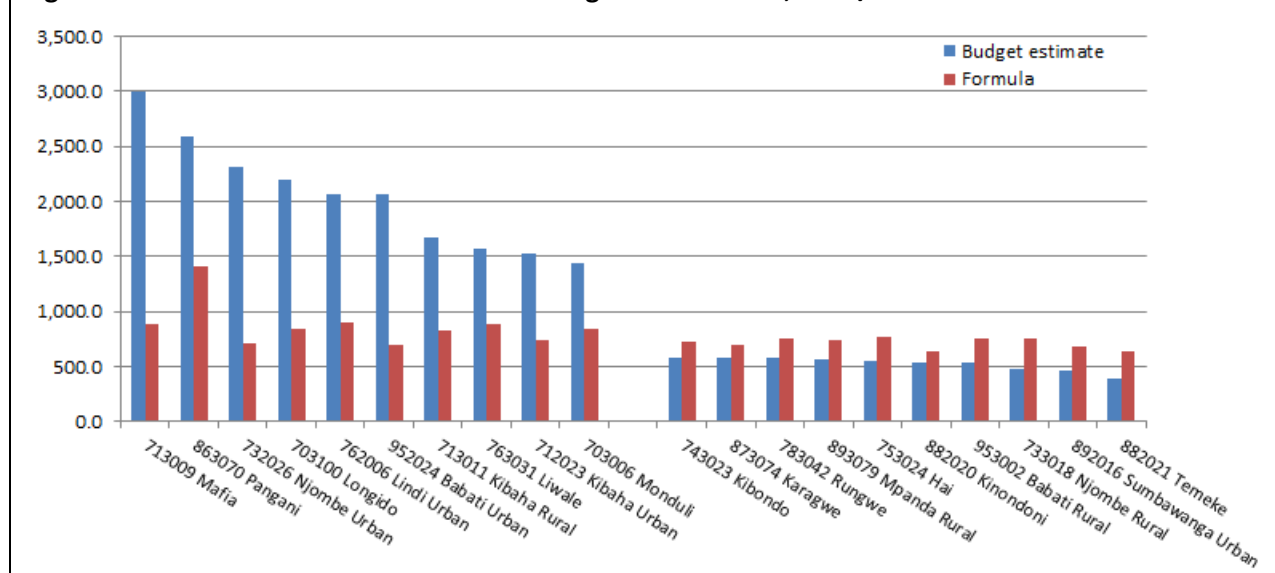
<b>Financial Year</b>	<b>IOF – Budget</b>	<b>IOF - Releases</b>
2010/11	0.915	0.883
2011/12	0.925	0.925

*Source: Computed by author based on MOFEA data.*

The disbursement pattern for FY 2011/12 was completely different, as public sector finances had recovered from the fiscal crisis of the previous year. Although budget plans called for a Health OC grant pool of TSh 32.3 billion, in reality TSh 36.3 billion was disbursed in 2011/12. Furthermore, these allocations were made consistent with the budgeted distribution pattern. As a result, the IOF for the Health OC releases is the same as the IOF for the budget estimates.

A final indication of the geographic distribution of Health OC resources is presented in Figure 2.1, which shows the ten “best-off” and “worst-off” councils in terms of per capita Health OC, along with the level of their formula-based allocation.

**Figure 2.1 Best-off and worst-off councils: budgeted Health OC, 2012/13**



Arguably, MOFEA uses the health sector allocation formula to determine sectoral allocations, but then departs from the formula for councils that have extra-ordinary needs. In this regard, Mafia is often cited due to its unusual status as an island district, which arguably raises its overhead and transportation costs. This is consistent with the graph showing Mafia DC as the best-off council in terms of per capita Health OC.

However, it is unclear whether the discretionary “top-up” allocations that appear to have been made by MOFEA are indeed reflective of higher relative needs. Only four of the ten highest grant recipients are also noted by MOFEA as having extra-ordinary needs in Box 4.8 (notably: Longido, Mafia, Liwale and Pangani). It should be noted that five of the ten best-off councils fall in two regions (Arusha and Coast), with Kibaha DC and Monduli DC *not* being noted by MOFEA as having extra-ordinary needs. Other councils that are expected to have extra-ordinary needs do not appear among the best-off councils. For instance, Ukerewe DC –which is an island in Lake Victoria with higher transportation needs, like Mafia– does not only fail to qualify among the better-off councils, in reality, Ukerewe actually receives *less* per capita Health OC than its formula-based allocation requires (TSh 702 versus a formula-based allocation of TSh 756 per person).

Furthermore, four out of these ten best-off councils are in fact urban councils, not generally believed to be among those with highest “special needs”. In particular, the presence of Kibaha Urban in the top-ten list raises the suspicion that discretionary allocations are partially motivated by considerations other than service delivery needs. The list may also be indicative of the incremental nature of budget decisions in Tanzania – once the formula-based approach is abandoned and some councils receive greater allocation than others in one year, such adjustments tend to carry forward into subsequent years as the grant allocation to each council is simply inflated by the increase in the available resource pool.<sup>25</sup>

<sup>25</sup> This pattern is very evident in the allocation for FY 2010/11, where every council –with the exception of only a handful of councils– was given a 3.43% increase versus their allocation from the previous year.

Similarly, the ten “worst-off” councils show a somewhat disconcerting pattern. All worst-off councils receive less (typically, between 20-35% less) when compared to their formula-based allocation. Whereas one may expect urban areas to be judged as being among the lowest-needs councils in terms of health resources, all but three of the worst-off councils are in fact rural councils. Furthermore, out of the three urban councils included on the list, two of the urban councils are Dar es Salaam LGAs.<sup>26</sup> In other words, it is unclear by what metric the majority of these councils should be considered to have “low needs”.

A final observation with regard to the spatial distribution of Health OC resources is that there is a positive (albeit moderate) correlation between per capita PE allocations and per capita OC allocation ( $r = 0.562$ ). This means may reveal the belief that –in the mind of MOFEA- PE and OC are complements so that when a council has higher PE (indicative of more staff), it requires more OC.

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<sup>26</sup> It should be noted that in addition to the three DSM LGAs, the DSM City Council also receives an (earmarked) Health OC allocation.

### 3. Methodological approach

The report up to this point (Sections 1 and 2) has provided a basic descriptive review and analysis of the current horizontal (or geographical) allocations of local health resources for each of the main funding streams displayed in Figure 1.2. From this point forward, the discussion and analysis will focus on possible revisions of the formula in a forward-looking manner.

In order to provide the necessary structure to this discussion, the current section (Section 3) provides some methodological background on the process that we followed in discussing the appropriateness of the current formulas and in considering whether potential allocation factors should be included in the formulas. Next, Section 4 provides a list of potential allocation factors (raised in our stakeholder consultations) that ought to be discussed and/or actively considered for inclusion in a revised health sector allocation formula. This section will further discuss (and quantitatively analyze, where relevant) how inclusion of each allocation factor would impact the overall distribution of health resources. Section 5 presents our overall recommendations for strengthening the equity and efficiency of geographic resource allocations.<sup>27</sup>

#### 3.1 Formula-based allocations: the preferred approach to the allocation of local resources

In our consultations, the general logic of the current allocation formula –that resources should be distributed in accordance with the relative need for health services of each jurisdiction- was generally accepted by all parties that were consulted. This means that the main focus of our efforts is not on coming up with a completely new approach to allocating health resources, but rather, to consider how best to measure the relative need for local health expenditures.<sup>28</sup> In the discussions in the following sections, therefore, the starting point for any potential revisions in the allocation patterns is formed by the existing formula. In other words, the existing formula is treated as the counterfactual against which the impact of any revisions to the formula is considered.

This starting point presupposes that having an objective formula-based allocation mechanism is preferable over an *ad hoc* allocation of sectoral resources, which would be determined by central government officials in a discretionary or arbitrary manner, which would reduce the transparency of the allocation process and that would leave the allocation process open to the whim of individual government officers or political interference. Our consultations revealed broad consensus in support of the use of sectoral allocation formulas, and the need to continue to rely on formula-based allocations (and to improve adherence to the formula) was accepted by all consulted.

However, the flipside of the reliance on formula-based allocations is the recognition that allocation formulas are a rather blunt policy instrument. Even when the very best allocation formula is used, it is impossible to capture all the nuanced drivers of local expenditure needs. As a consequence, the resulting formula-based allocation pattern only provides “rough justice” which may not address every particular special need of each local jurisdiction. However, the logic of formula-based allocations suggests that as long as the formula comes “close enough” to an objective, transparent, efficient and

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<sup>27</sup> Sections 5.2- 5.5 provide specific recommendations for the five main funding streams (PE, OC and HBF, drugs, and MMAM).

<sup>28</sup> It should be noted that the discussion on the measurement of local health needs takes on board issues such as equity and performance.

equitable allocation of resources, then the resulting resource allocation pattern will be preferable to a discretionary, non-formula-based allocation approach that risks subjecting the horizontal allocation of resources to whim, bias, and political interference.

### 3.2 Limits to the role of the horizontal allocation formula

In this same line of thought, it should be recognized that the horizontal allocation formula (the inter-jurisdictional allocation of resources) is only a small part of the central, local, and intergovernmental and planning and budgeting processes that are required to make sure that public financial resources are used optimally to provide effective public services at the frontlines of service delivery. Whereas the allocation formula may marginally improve the allocation of sectoral resources across local governments, other issues –such as local planning approaches, human resource management practices, procurement techniques, staff oversight and incentive structures, and health reporting systems- form critical and inextricable parts of an effective sectoral funding and service delivery apparatus.<sup>29</sup>

Since the geographic allocation of local health sector financing is not a stand-alone issue, it cannot be treated as such in this report. As a result, when a discussion of administrative or budgetary practices is relevant to the policy objectives that the health sector is trying to achieve (and when the issue is tangentially relevant to the design of the intergovernmental transfer system), we will seek to flag such relevant issues in text boxes contained in this report.

### 3.3 Universal principles of transfer design

With this background and with these caveats in mind, the following sections will pursue the improvement of the relevant health sector allocation formulas in accordance with the universal principles of sound transfer design, which are discussed in greater detail in Annex B. These principles suggest that a well-designed and implemented intergovernmental fiscal transfer scheme follows the following principles:

- Provides revenue adequacy
- Preserves budget autonomy
- Enhances equity and fairness
- Stability
- Simplicity and transparency
- Incentive compatibility
- Focuses on needs or demand (clients or outputs) rather than supply (inputs and infrastructure)
- Avoids “equal shares” as a major allocation factor
- Avoids sudden large changes

### 3.4 Issues of special consideration: equity and performance

As per our TORs and per the stakeholder discussions, two issues are given special consideration in the review and revision of the allocation formulas in the following sections.

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<sup>29</sup> In fact, a skeptic could argue that the most important element of the formula-based allocation mechanism is not to arrive at a perfect formula, but rather to avoid providing perverse incentives that would give local officials incentives to reduce the effectiveness of local service delivery.

The first topic that is given special consideration is the equity of horizontal allocations. The discussions and analysis will identify and assess ways of further promoting equity in the allocation process, particularly in the context of the revisions to the horizontal allocation of resources that has been proposed by the World Bank.<sup>30</sup>

The second topic that is given special consideration in this report is the desire of the health sector to incentivize the performance of local health services. To some degree, encouraging better provision of local health services will require incentivizing the effectiveness of CHMTs to better manage the front-line delivery of health services. At the same time, however, the most direct way in which to improve health services is by empowering and incentivizing the performance of front-line providers of local health services, in order to reduce absenteeism among local health workers and to improve the performance of existing health staff. These are two separate –albeit closely related– challenges. For instance, if the health sector wanted to roll out (a modified version of) the Pay for Performance (P4P) pilot experiment in Pwani Region through regular government processes and funding streams, what implications would this have for the health sector grants and for the horizontal allocation of resources?

At the intersection of these two topics, we should note that achieving an equitable and effective geographic allocation of resources requires us not only to look at the inter-district allocation of resources (which results from the horizontal allocation formula), but also by the use of resources within districts (i.e., the distribution of local health resources between health facilities). Although the main focus of this report is on improving inter-district resource allocations, whenever relevant, the report will flag where there is need to also carefully consider the role of intra-district resource allocations.

### 3.5 The preliminary nature of our initial recommendations

Based on the latest available data and the discussions in this report, an Excel-based grant simulation model was prepared that accompanies this report. The simulation model allows the user to simulate the impact of various changes to the grant scheme.

A final caveat, however, should be raised with regard to the preliminary nature of the initial recommendations contained in this report.

First of all, the timing of the current report prevented us from taking on board two data sets which would be tremendously helpful in updating the health allocation formulas, namely the Census of Population 2012 and the Household Budget Survey 2012. Rather than revising the health sector formulas two years in a row (due to incomplete data and analysis during the first round of revisions), it may be wise to await the release of these data sources before finalizing the revision of the allocation formulas.<sup>31</sup>

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<sup>30</sup> The World Bank's Basic Health Services Project (BHSP) seeks to assist the Government of the United Republic of Tanzania in improving the equity of geographic access and use of basic health services across districts and enhancing the quality of health services being delivered. In March 2012, the World Bank proposed the introduction of "equity norm" based on the number of clinical workers (per 10,000 residents) for each district in order to provide greater resources to districts with inadequate clinical staff.

<sup>31</sup> The 2012 population counts per districts were released after the preparation of the draft report, but prior to finalization of this report. However, additional population census data (e.g., population by age-group or broken down by urban versus rural places) was still unavailable at the time of finalization of this report.

Second, the discussions and analysis in the current document provide initial policy recommendations based exclusively on technical discussions of the topic. However, nothing is more intensely political in any country than determining the allocation of the public sector's financial resources. It is therefore critically important for the way forward to be discussed, agreed upon and owned by the critical stakeholders on the government's side (MOHSW, PMO RALG and MOFEA). This may require a second stage of analysis and decision-making informed by the initial recommendations contained in the current report.

#### **4. Issues and options for strengthening the equity and efficiency of geographic resource allocations for the health sector**

During stakeholder discussions (and as part of the review of our Terms of Reference), approximately ten distinct issues were raised for consideration as part of the discussion on how to strengthen the equity and efficiency of geographic resource allocations for the health sector. These issues include the following topics or questions:

- Individuals are the main client-recipients of health care services, and thus population should be an important element in the allocation formula. To what extent do census population and service population capture the need (or demand) for local health services? (Section 4.1)
- To the extent that the size of a local government's total population does not capture the relative demand for health services of different segments of the population, how do poverty, burden of disease, and population density (rural populations) impact local health needs? (Section 4.2)
- What are the drivers of cost variations in health service delivery? (Section 4.3)
- Is there a way to improve the provision of basic health services in under-staffed councils and achieve greater equity in the overall allocation of health resources? (Section 4.4)
- How should the design of the grant system (and the horizontal allocation formulas for health resources) be changed in order to incentivize performance of local health staff at the facility-level in delivering better quality services and providing greater access? (Section 4.5)
- Can the allocation formula or the grant system be used to reward council-level performance? (Section 4.6)
- How can we best measure the health sector's local infrastructure needs? (Section 4.7)
- Does the current allocation formula take into account the need for financial resources for local health administration overhead expenses? (Section 4.8)
- To what extent can councils with extra-ordinary service delivery needs be accommodated in the allocation formula? (Section 4.9)
- Should councils that have greater access to own source revenues and other health funding sources receive a smaller allocation? (Section 4.10)

##### 4.1 Attendances, service population, and census population

In order to achieve an efficient and equitable allocation of resources, a horizontal allocation formula should allocate more resources where service delivery needs are greater. Service delivery needs are typically driven by two types of factors: (1) greater demand for public services (for instance, due to a greater number of clients/patients), and (2) due to higher cost levels. One of the first and biggest challenges in the design of any allocation formula is to select a number of allocation factors that reflect the need or demand for public services—rather than the supply of the public service.

For instance, in 2010, health facilities in Tanzania recorded approximately 40 million out-patient department attendances (HMIS 2011). It is tempting to argue that the number of (inpatient and/or outpatient) attendances in each local authority reflect the need or demand for health services. In reality, however, the number of attendances in an area is determined by a combination of demand as well as supply factors. Consider two local authorities, each with the same size population: a peri-urban district with good road access and a population of 300,000 and a remote, geographically large rural district with the same population size (and for the sake of argument, the same health conditions).



However, due to its more remote nature, the more remote district likely has fewer health facilities and up to half of the facilities may lack qualified on-site clinical staff. In this example, we would expect the number of outpatient attendances in the more remote, rural district to be considerably lower than the other district, not because the need or demand for health services is lower, but rather, because the supply of health services is inadequate. As discussed in greater detail in Annex B, sound allocation formulas should focus as much as possible on the need or demand for services, and stay away from allocation factors such as the number of attendance, the number of existing clinical staff, or the number of health facilities, since these are all measures of the supply of health services, rather than measures of the need or demand for public health services.

An important and related problem to the use of attendance figures in the design of health sector grants (or the use of the self-reported size of service populations) is that there is an incentive to over-report. If each district or facility knows that its resource allocation is determined by the reported number of attendance or the reported size of the service population, every district and every health facility will have an incentive to substantially over-report its attendances or the size of its service population. Even though the scale of the over-reporting can be limited by monitoring and oversight mechanisms, there is considerable evidence to suggest that it is virtually impossible to eliminate such incentives – even in highly industrialized economies with strong public administration systems (such as in the United States) over-reporting of utilization in front-line service delivery is not uncommon. In other words, in the foreseeable future, **we should not expect the HMIS system to produce the type of attendance data (either at the council level or at the facility level) that would be useable as part of a resource allocation process in Tanzania.**

Although there are some reasons to be concerned about the reliance on census population as a measure of the need (or demand) for health services (most importantly, the data are updated only once every ten years),<sup>32</sup> census population figures are a good starting point for measuring the demand for local public health services. Indeed, until 2003, the Health Basket Fund used a simple formula which exclusively relied on population estimates, thus distributing the HBF grant resources 100 percent in proportion to population. Likewise, based on the recognition that the individual is the main client-recipient of health care services, it was decided that 70 percent of the current local health block grant would be distributed in proportion to the population of each district.

One question to ask at this stage is whether a health sector allocation formula should rely on a local government's total population count (e.g., based on census population), or whether it would be appropriate to allocate health resources based on the (estimated) service population of each local jurisdiction? There are pros and cons to each approach. Since the service population for local health facilities is likely to be self-reported, one could argue that the census figures provide a more objective measure of the need (or service population) for local health services. Alternatively, one could argue that census estimates are too static, as a population census is only undertaken every ten years.<sup>33</sup>

Several aspects of health service delivery should be taken into account in this regard. First, one could argue that to the extent that rural residents seek health care in urban health facilities whenever possible (based on the perception that facilities in urban areas provide better services), the service population of

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<sup>32</sup> Although a population census is undertaken only once every five year, the NBS releases formal inter-census population estimates every five years (between two census years).

<sup>33</sup> Please note that differences in attendance rates due to differential disease patterns and cost differences are accounted for by different allocation factors already.

urban areas is under-estimated relative to rural local governments when using census data. Second, an opposing argument could be made: because urban residents are wealthier and have access to private health facilities, the service population of public health facilities in urban local governments is likely over-estimated when relying on census figures.

It is difficult to sort out to what extent these arguments actually cancel each other out.<sup>34</sup> Table 4.1 (drawn from Household Budget Survey,2007: Table 4.13) indicates that reliance on public versus private facilities differs considerably based on type of local government. The available statistics show that households in the Dar es Salaam relies heavily on private health facilities and national (non-local) hospitals, with approximately 43-47 percent of the population relying on private dispensaries, health centers or hospitals. In other urban areas (which are typically regional centers), households appear to rely much more heavily on regional hospitals, with 47 percent of the population in these urban areas consulting a public hospital in 2007. In these urban areas outside of Dar es Salaam, only around 28 percent of the population relies on private health facilities. Finally, outside of the urban areas, public dispensaries and health centers are the main mode of health service provision, with around 50 percent of health consultations taking place at these facilities. In rural areas, only around 20 percent of health consultations are provided by private health facilities.

**Table 4.1 Main Sources of Consultation for Individuals who Consulted any Health-care Provider**

	Dar es Salaam	Other urban areas	Rural areas	Total
<b>2000/01</b>				
Public dispensary/hospital	40.0	37.9	42.3	41.6
Regional hospital	2.9	12.2	1.7	3.1
Public community health center	6.6	8.3	10.9	10.4
Private dispensary/ hospital	47.4	31.8	19.3	22.3
<i>Consulted multiple providers</i>	6.9	10.3	11.4	11.0
<i>Consulted any gov't source</i>	49.5	57.7	53.8	54.1
<b>2007</b>				
Public health center/ hospital	29.8	47.3	23.2	28.0
Public dispensary	26.3	17.1	43.0	37.1
Private health center/hospital	8.8	5.7	2.6	3.6
Private dispensary	34.1	22.6	16.8	19.0
<i>Consulted multiple providers</i>	3.7	8.0	12.8	11.3
<i>Consulted any gov't source</i>	55.5	63.4	63.6	63.0

Note: See original tabulation for reliance on other health practitioners or providers.

Source: Household Budget Survey 2007, Table 4.13.

This partial evidence suggests that it may indeed be appropriate to adjust the estimated service population downward for urban local governments, particularly in Dar es Salaam. However, the trends are not necessarily clear-cut: although the utilization of private health facilities tend to be higher in DSM and urban areas compared to rural areas (at a rough proportion of 40% and 30% versus 20%, respectively), it appears that urban residents do not necessarily rely any *less* on public health facilities. Furthermore, these figures do not necessarily take on board the argument that rural residents often also may rely on health facilities in urban areas.

<sup>34</sup> The Household Budget Survey 2012 should provide more detailed data to resolve this issue with some degree of accuracy.

For analytical purposes, it might be helpful to look at actual (reported) urban and rural out-patient and in-patient attendance patterns, keeping in mind the caveat noted above that attendance reflect the demand as well as the supply of health services. The attendance patterns captured in Table 4.2 reveal a much higher-than-average out-patient attendance rate in DSM: this could simply be due to the better access to health services in DSM (and a better-educated, wealthier population, which relies more heavily on formal health services), or this could be a result of the “daytime” population estimate for the DSM LGAs under-estimates the service population of the DSM municipalities. We note that the outpatient attendance rate in other urban LGAs is considerably lower (close to average) and the outpatient attendance rate is below average in rural areas. Unfortunately, since HMIS does not report attendances by type of facility (private or public), we cannot conclude anything with certainty about the relative out-patient service population of public health facilities in each of these three types of LGAs. Nor can we conclude with certainty whether the differences in attendance are due to differences in the demand for health services or due to difference in the supply.

**Table 4.2 Urban and Rural OPD and IPD Attendances, 2010**

	Population (MOHSW Est.)	Out-patient (OPD) attendances	In-Patient (IPD) attendance	OPD / Population	IPD / Population
DSM LGAs	3,114,132	4,235,952	78,853	1.360	0.025
Other Urban LGAs	5,295,762	5,426,907	342,786	1.025	0.065
Rural LGAs	33,580,395	30,460,712	1,169,994	0.907	0.035
Total	41,990,289	40,123,571	1,591,633	0.956	0.038

Source: Calculated by others based on HMIS (2011).

Likewise, we note a high reliance on regional hospitals for in-patient services in urban LGAs outside of DSM. This probably mostly reflects the fact that the Regional Hospital serves both as the district hospital for the urban areas as well as the referral facility for the entire region. This point notwithstanding, the higher IPD rate in other urban areas may also reflect rural populations simply by-passing District Hospitals in favor of the Regional Hospitals.<sup>35,36,37</sup>

Tables 4.1 and 4.2 do reveal some things about the relative success of the current allocation formula and the likely service delivery impact of changes to the health allocation formula with regard to population. For instance, despite considerable problems with health service delivery in rural and remote areas (which have been recorded both anecdotally and captured in quantifiable form), the OPD/population ratio for rural LGAs and urban LGAs (outside of DSM) is relatively close (0.907 OPD attendances per person in rural areas versus 1.025 OPD attendances per person in urban areas, respectively). It is likely that –in aggregate at least- the pro-poor, pro-rural nature of HBF and health OC allocations may have contributed to more equitable access to health services in more remote, rural areas.

<sup>35</sup> The urban/rural disparity would be fully explained if half of the patients in RHs are urban residents and half of the RH IPD attendances are referral patients from across the region.

<sup>36</sup> We note the low IPD rate for DSM, and speculate that this may be due to reporting problems in HMIS with national and specialized hospitals.

<sup>37</sup> It would be appropriate to give more consideration to these issues in terms of how the CCHPG guides councils to distribute resources between the DH and PHFs.

Another implication of Table 4.2 is that there will likely be an important downside if one were to attempt to shift drastic amounts of resources away from the DSM municipalities (or by extension, other urban LGAs). Since DSM accounts for only about 7 percent of the national population, shifting away significant resources away from the DSM LGAs (i.e., reducing their allocations by, say, more than 50 percent) and shifting these resources towards the LGAs outside of DSM is unlikely to result in major health improvements in the LGAs outside of DSM. At the same time, the decreasing of resources in DSM is likely to be felt quite hard by the residents of these municipalities, especially given their already higher-than-average utilization of health facilities.

#### **Box 4.1: Population Census 2012**

Initial Population Census 2012 figures for LGAs were released after this report was drafted, but before the final draft was finalized. As such, although detailed demographic figures were still unavailable, some basic analysis based on the latest census population counts was possible. However, by and large, the computations in this report were based on the best population estimates available prior to the release of the 2012 Population Census.

Although the data quality of the HMIS is gradually improving, the reader should be cautioned that local population estimates prepared by local (health) statisticians are not a good source of population estimates for the purpose of allocating health resources (i.e., for inclusion in an allocation formula), to the extent that their estimates might be biased if higher population estimates would result in higher resource allocations. The Population Census 2012 is likely to provide the best (most accurate and objective) source of data regarding the (underlying) service population of local health facilities across LGAs. As such, it is recommended to update the population figures used for the allocation of all health resources with these new census figures. The census data will hopefully also provide accurate population counts for the newly created councils.

In addition to updating the data used for the allocation factor, it is recommended to perform a retrospective analysis to determine the degree of the misallocation of resources that was caused by relying on 2001 population census figures up to now (which were inflated annual by 2.9 percent for each LGA) versus the actual 2012 population figures. This analysis should guide future decisions about how to best prepare inter-census estimates for health resource allocations.

A preliminary analysis of the population growth patterns suggest that the population of Dar es Salaam municipalities was under-estimated to the tune of 25% (therefore being significantly under-resourced as a result), In contrast, LGAs in Lindi, Iringa, and Mtwara regions have all benefitted, as their relative population was over-estimated (in the range of 15-18%). Although the population estimate for urban areas outside of DSM were under-estimated, the pattern is not consistent: the population of 14 urban LGAs was under-estimated, while the population of 9 other urban LGAs was over-estimated by the approach relied on for calculating formula based grants.<sup>38</sup>

Another dimension that should be explored based on the 2012 population census figures (as they become available) is the under-five population. In particular, is the under-five population distributed evenly across space (in proportion to the rest of the population), or are there clear demographic trends across space that would cause substantial variations in health expenditure needs across LGAs? (Note that the under-five population accounted for 41 percent of OPD visits (HMIS, 2011).

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<sup>38</sup> Although it would be prudent to seek the advice of NBS in this matter, one can imagine updating the annual population projections for LGAs (for the purpose of computing grant allocations) not based on an average national growth rate, but rather, based on projected regional growth rates, which are grounded in historical trends.

The statistical analysis above does not provide conclusive guidance on the question whether it would be prudent to try to estimate the service population of different LGAs as part of the review and revision of the health sector allocation formula. Given the shifting health provision choices over time, it would be difficult to make any firm conclusions, especially in the absence of more updated information which will most likely be contained in the HBS 2012 about the relative utilization of public versus private health facilities. Furthermore, the exact impact of size of the local (service) population on the distribution of local health resources is likely to play a different role as part of the different funding streams:

- With regard to the allocation of drugs and medical supplies, an argument could be made that relying on the total population as an allocation factor (unadjusted for urban/rural or other utilization patterns) is appropriate, as urban jurisdictions have higher OPD utilization rates than rural jurisdictions (Table 4.2), and therefore should not be 'penalized' in terms of lower drug resources. However, to the degree that a greater share of the urban population (versus rural populations) opts out of public health provision by choosing private health providers (and by choosing private dispensaries or pharmacies fully outside the public health system), one might consider adjusting the service population of urban authorities downward by a uniform share of 10-20% for the purpose of allocating drug resources.<sup>39</sup>
- With regard to the allocation to Health OC and the HBF, one should recognize that the administrative and non-wage recurrent cost of local health services are not only a function of the population's size and characteristics itself, but also of the differences in the organizational structures of health facilities within different types of local authorities. In this regard, we should take on board the fact that health services in urban councils rely considerably less on dispensaries and health centers, as the population relies more heavily on the Regional Hospital (in case of regional headquarters) or the District Hospital for health services.<sup>40</sup> Also, urban populations are arguably easier to serve (beyond the issues already taken into account by the other allocation factors in the formula) as fewer incentives are needed to provide staff performance in urban areas. Again, an adjustment that places a discount on the expenditure needs for the provision of primary health services in urban areas would not be unwarranted.
- With regard to the allocation to health infrastructure resources under the HSDG/MMAM, Section 4.7 and Section 5.5 reveal that there are considerable variations in the distribution of health infrastructure across Mainland Tanzania in terms of PHFs and the availability of staff housing. However, the health infrastructure resources available are wholly insufficient to fill the main infrastructure gaps. Instead, the available HSDG/MMAM resources suffice to provide investments in smaller scale capital goods. As argued in the sections below, the need for such investments is likely disproportionately larger in more rural and remote districts. Section 5.5 suggests that for the design of the HSDG/MMAM formula (in addition to the inclusion of other allocation factors), a measure of Service Population that is biased towards the needs of rural residents may be appropriate.

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<sup>39</sup> An alternate interpretation would be that the greater reliance on private providers in urban areas is already captured by other allocation factors included in the formula (poverty and U5MR), so that no further adjustment is needed.

<sup>40</sup> While according to the CCHPG, urban local councils that are regional headquarters are required to direct the resources which are set aside for the operation of the District Hospital toward the Regional Hospital (when there is no DH). However, it does not appear that there are adequate mechanisms in place to make sure that urban residents rely on the available PHFs..

#### 4.2 Other factors impacting the need or demand for health services: Poverty, burden of disease, rural populations

It is acknowledged that although the population is the primary client for public health services, the population of an LGA is an incomplete measure for the need (or demand) for health services. In the development of the current allocation formula, it was recognized that poor residents, residents in rural areas and residents in areas with higher burden of disease have a higher demand for health services for a number of reasons. This is why the current allocation formula takes into account poverty, under-five mortality and the DMO vehicle-route mileage, respectively, as supplementary indicators of health needs.

There are considerable concerns about data availability and robustness at the local level for these variables, as a result of which the allocation factors for poverty and under-five mortality (morbidity) has to be estimated based on aggregate statistics. The allocation factor for poverty is an estimate of the number of individuals within a council that live under the basic needs poverty line, calculated from average urban and rural poverty level, by region (drawn from the HBS 2001), multiplied by council population. The estimates for each Council's under-five morbidity are computed based on the national urban or rural U5MR as applicable (again, based on HBS 2001), multiplied by the council's estimated population.

**Poverty.** Poor households or residents tend to have worse access to clean water sources, live under poor housing conditions, tend to have a poor nutrition status, and/or may have a lower education status- all of these factors are associated with negative health behaviors and outcomes that result in a lower health status. As such, poorer households or residents tend to have a greater need for public health services.

In addition, the concept of payment of fees for service is an underlying principle in the health sector. This means that a significant share of health expenditures is directly borne by households directly; in fact, the National Health Accounts suggests that households are the funding source for roughly one-third (32.3 percent) of all health expenditures (MOHSW, 2012b). This share is up from 25 percent in 2005/06, as a transition is underway in local health finance in Tanzania, with increasing emphasis being placed on funding from health insurance and community health funding schemes. For those with formal sector employment, health insurance schemes offer a practical way to address the inter-temporal and moral hazard problems associated with health expenditures. However, for those who are informally employed, work in subsistence agriculture, or are income-poor, health insurance and even community health funding schemes offer a less effective financing solution.

Even though basic health services at public health facilities are offered at highly subsidized prices, poor households who are not able to afford even the small co-pay are supposed to be provided fee waivers and exemptions, as our children under five and seniors over 60 (Mubyazi, 2004). It is unsurprisingly, however, that front-line health workers prefer to collect user fees, even from patients who should qualify for fee waivers and exemptions (Laterveer, Munga and Schwerzel, 2004). In the absence of being able to collect user fees from poor households, the net financial burden (cost minus user fee) for a health facility to provide health services to a poor resident or household is proportionately higher. In this light, Haazen (2012: 53) concludes that "special efforts are required to reach the poor because they cannot afford [fee-for-service health] services and often cannot afford prepaid health insurance [either]."

Besides these “technical” arguments, a health sector allocation formula without a poverty allocation factor is not likely to be politically acceptable.

However, as was the case in 2003 (when the current allocation formula was developed), there are currently no district-level poverty estimates available for LGAs in Tanzania. This means that –to the extent that poverty should remain in the updated allocation formula–, the allocation formula will have to continue to rely on a local poverty estimate. Given the (continued) estimated nature of the poverty count, it would most likely not be prudent to increase the relative weight on the poverty factor beyond the current 10 percent.

Based on the current relative population and poverty levels, however, we can compute the financial implications for health service provision that result from including poverty as an allocation factor in the formula with a 10 percent weight (relative to a 70 percent weight for population). Computations reveal that despite the relatively small factor-weight, the nominal impact is considerable: for every TSh 1,000 that the allocation formula provides every LGA for each resident (through the population ‘window’), the poverty window will provide the LGA an additional Tsh 400 per (estimated) poor resident.<sup>41</sup> If we consider the formula-based OC block grant plus the Health Basket Fund grant allocation budgeted for 20012/13 (TSh 32 billion plus TSh 89 billion), based on the current allocation formula, each LGA would receive TSh 2,000 per resident (based on the population factor), plus TSh 800 per (estimated) poor resident (based on the poverty factor).

In order to properly to update the poverty estimates to be included in the health allocation formula, it would be prudent to await the new regional poverty estimates from the NBS which will be produced as part of the HBS 2012 to update the formula in this regard.<sup>42</sup> In order to achieve updated poverty estimates, these regional poverty rates (separately for urban and rural areas) would have to be multiplied by each council’s population (to be drawn from the 2012 Population Census). Unfortunately, these data were unavailable for analysis at the time of the preparation of this report.

Even when HBS 2012 becomes available, we should recognize that the quality of the poverty estimate (which is based on regional poverty data) limits the ability of the formula to allocate resources in a more targeted pro-poor fashion. In addition, consideration should be given to how health resources can be allocated in a more pro-poor fashion within LGAs.

#### **Box 4.2 The use and allocation of “pro-poor” health resources within districts**

The current relative weighting of the health sector formula results in an allocation so that for every TSh 1000 that a council per resident, the council receives an addition TSh 400 per (estimated) poor resident. Relatively speaking, this is a considerable pro-poor “top-up” when we consider an average OPD attendance of 1 visit per person per year.

<sup>41</sup> On average, for each TSh 1000 that is provided through the population window, the “poverty top-up” amount (in per-person terms, rather than per estimated poor person) amounts to TSh 140 per person, although this additional pro-poor ranges between councils roughly from TSh 70 per person (in the best-off councils, with the lowest regional poverty rates) to TSh 280 (in the worst-off councils, with the highest regional poverty rates).

<sup>42</sup> The sample for the HBS 2007 was too small to include regional poverty estimates (HBS 2007; Table 3.7). The Demographic and Health Survey 2010 does include estimates of regional wealth quintiles, but it would not be prudent to use these estimates as an indicator of poverty due to the methodology used to estimate wealth quintiles.

However, little or no evidence is available to suggest that these additional resources are actually used for providing health services exclusively (or even predominantly) to poor residents. Achieving a pro-poor inter-district allocation of health resources would be meaningless if these resources remain unspent due to local capacity constraints, are somehow captured prior to reaching the front-line service level; and unless these resources are indeed used in a way that achieved for better health services for poor households.

Although this question falls beyond the scope of the current assignment, the within-district distribution of health resources is an important concern as the health sector seeks to improve equitable access to health services. This is especially true to the extent that the government and its development partners seek to pursue universal access to health services (as opposed to merely an improvement in the access to health services).<sup>43</sup> An analysis to determine whether health resources are distributed and used in a pro-poor manner within local governments would require substantial additional data collection about within-district resource flows. It is recommended that the health sector engage in a targeted study to analyze the obstacles that prevent poor and non-poor residents face in accessing health services. For instance, if a health facility exists nearby, do all residents have equal access to the facility, or are there differences in utilization patterns? Furthermore, are primary health facilities located equitable across the district jurisdiction, or does the way in which facilities are located exclude certain disadvantaged group?

***Burden of disease / under-five mortality.*** The inclusion of the under-five mortality rate (or more accurately, the estimated under-five morbidity count) as an allocation factor continues to be a (conceptually) reasonable indicator of regional differences in the health status and burden of disease across the national territory. It should be noted in this regard that under-five inpatient and outpatient attendances account for 40-45 percent of all health attendance. In addition, the U5MR should be seen as an indicator for the health status (or Burden of Disease) impacting the over-five population as well.

In reality, we should recognize that the under-five mortality rate is actually not only an indicator of underlying variations in demand for health services or disease burden, but also reveals the deficient supply of health services: after all, U5MR will be higher where access to (and quality of) health services are weakest. This is important to recognize as we assess the need to further target the formula to populations who are under-served (in terms of their access to health facilities managed by qualified health staff).

Previously, only measures for rural and urban U5MR were available in Tanzania, meaning that this allocation factor was an extremely blunt instrument, simply providing rural councils a marginally greater allocation per person than urban councils. Going forward, it would be prudent to use the latest and most detailed U5MR data available, drawing on the DHS 2010, which presents U5MR not only by urban and rural, but also by zone (Table 4.3).<sup>44</sup> Using the updated data source will improve the targeting of resources to LGAs to zones where U5MR is considerably higher.<sup>45</sup> Based on the updated data, we would expect that in nominal terms, for every TSh 1000 received on a per capita basis through the population

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<sup>43</sup> The discussions surrounding the post-2015 global development agenda seem to be moving in this direction. For instance, one possible health target might be to provide universal access to maternal and child health services by 2030.

<sup>44</sup> It should be noted that zonal estimates were available since 2006 (TDHS 2004/05). It is a concern that these were not used to update the formula much earlier.

<sup>45</sup> This will have the effect of marginally steering some of the health resources away from Northern Zone, where the Burden of Disease appears to be lower and health outcomes appear to be better.



window, LGAs would receive an additional TSh 100-180 per person, depending on the Burden of Disease faced within their zone (as measured by the U5MR).

Of course, more information is contained in the zonal U5MR-estimates than in the previous estimates, which only provided estimates for urban versus rural jurisdictions. Yet, due to the aggregated nature of the U5MR-estimates at the zonal level, we ought to recognize that these estimates are still not terribly nuanced.<sup>46</sup> Therefore, it would not be advisable to increase the relative weight assigned to this allocation factor beyond 10 percent.

Table 4.3 Early childhood mortality rate (for the ten year period preceding DHS 2010), Tanzania 2010

	Infant mortality	Under-five mortality
<b>Mainland</b>	<b>60</b>	<b>93</b>
<i>Mainland - Urban</i>	63	96
<i>Mainland – Rural</i>	60	92
By Zone:		
Western Zone	56	98
Northern	40	58
Central	57	84
Southern highland	70	102
Lake	64	109
Eastern	70	94
Southern	68	94

Source: DHS 2010 Table 8.3

**Rural populations.** Like poverty, living in a rural area tends to impose hardships on people that tend to have a negative impact on health outcomes: all else equal, rural residents often have worse access to clean water sources, tend to have lower incomes, may (in some cases) have a poorer nutrition status, and/or may have a lower education status. As such, it is reasonable to allocate greater health resources to LGA in proportion to some measure of their rural or remote nature. This is especially true to the extent that other allocation factors (such as poverty and burden of disease) are limited in detecting variations in health needs between LGAs due to data availability. In addition, as discussed in Section 4.3 below, it is costlier to provide the same level of health services to rural populations.

#### 4.3 Cost variations in health service delivery

A third consideration for the review and revision of the health sector allocation formula is whether the relative health needs of LGAs are driven by cost variations across Mainland Tanzania. It is worth considering possible drivers of cost variations by expenditure type (wage expenditure, goods and services, and capital expenditures).

**Wage expenditures: salaries and allowances.** There are two reasons why certain LGA might have higher health expenditure needs when it comes to wage expenditures. First, it might be the case that –all else equal- certain LGAs have a higher need for health staffing (for instance, rural areas may require a higher staff/population ratio in order to deliver equal access to health services). Second, it might be the case that the competitive wage needed to retain staff in certain areas (say, very remote areas) is higher than

<sup>46</sup> It is unclear at this stage whether the Household Budget Survey 2012 will provide U5MR at the zonal and/or regional level.

in other places. If either of these of these issues is relevant, then we should consider providing greater wage allocations to these respective LGAs.

Unfortunately, the rigidities imposed by the President's Office - Public Service Management (PO-PSM) has meant that local health staff (as is the case for all other government staff) are not compensated differently in remote or undesirable areas than in accessible and urban areas: the pay grade for every health worker is determined depending on things such as staff position, related pay grade and years of experience, regardless of location. Naturally, this ignores that health workers have locational preferences, with a considerable bias towards posts in urban areas, where housing amenities, living conditions and access to public services, employment opportunities for spouses, access to family and social contacts, as well as professional contacts and career opportunities are more readily available.<sup>47</sup>

As has been extensively documented elsewhere,<sup>48</sup> this has resulted in a situation where in remote and rural jurisdictions (with potentially the highest health needs per resident) the supply of health staff (and related wage expenditures) is in fact the lowest, whereas in urban jurisdictions (with lower relative health needs per resident), the supply of staff and wage expenditures is in fact much higher. A discussion of the possibility to pay hardship allowances for remote postings –and other interventions that could restore a degree of geographical balance- are presented in greater detail below in Section 4.4 (ensuring the provision of basic health services in under-staffed councils).

**Goods and services.** Do the costs of the goods and services that form inputs into health services (i.e., non-wage recurrent expenditure items) vary across space? This is a difficult issue to answer, and an even more difficult question to quantify. To the extent that inputs are procured through MSD, prices are constant across geographical space, as the cost of delivery (to the council headquarters, if not to the health facility itself) is already subsumed in the price of the drugs and medical supplies.<sup>49</sup> To the degree that intermediate inputs are not procured through MSD, any inter-regional variations and within-region variations in input prices in Tanzania are mostly related to the cost of transportation. Although general price levels vary somewhat between regions (largely based on distance from Dar es Salaam), this transportation cost within the district was considered an important cost factor, particularly to the extent that the district itself is responsible for within-district distribution of drugs and medical supplies (which was the case in 2004). This is an important reason why in the 2004 health formula, the DMO vehicle route mileage was taken on board as one of the allocation factors.

One practical advantage of DMO vehicle route mileage as an indicator of remoteness is that the allocation factor is tied directly to the cost of transportation, and therefore, the cost implication can be expressed in per-kilometer terms. Of course, this interpretation is particularly helpful to the extent that the higher costs of rural service provision are directly tied to increased transportation costs. (Conversely, this approach is less useful in 'visualizing' or interpreting the higher service needs of rural populations to the extent that these needs are not explicitly linked to higher transportation costs). The total aggregate DMO vehicle road mileage (across all LGAs) is approximately 484,000 kilometers per month (or 5.8

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<sup>47</sup> It should be noted that there is a close relationship between the degree of professional (clinical) mentoring, oversight, and contacts that medical doctors and clinical officers have, and their self-motivation to deliver health services in a professional manner. See, for instance, the work by Leonard and Masatu (2009).

<sup>48</sup> For instance, see the discussion on (local) health finances in the Public Expenditure Review 2011 (PER Macro group, 2012).

<sup>49</sup> This may change slightly if MSD decides to increase a recovery charge for transportation costs. See the discussion in Section 5.4.

million km per year). When 10 percent of the HBF is allocated in proportion to this allocation factor (say, 10% of US\$ 55 million), this translates into an additional allocation for each council of almost US\$1 per kilometer. This amount may be considered somewhat high, even when this additional grant amount is understood to cover not only the cost of fuel, but also the cost of vehicle maintenance as well as other related travel costs (such as within-district travel allowances).<sup>50</sup>

**Box 4.3: Access to health care facilities: the choice between DMO route mileage and land area (2003)**

“Two factors could be potentially included in the health care formula to account for the impact of geography on the provision of health care services: the mileage of health care routes and land area.

Recurrent transportation costs (gasoline and vehicle maintenance) account for a non-trivial portion of the local health care budget, particularly in inaccessible rural areas. In response, the Ministry of Health team would be inclined to include the exact mileage that district health care staff needs to travel (in order to visit each health care facility once per month) as an allocation factor in the local health care formula.

A second and potentially more comprehensive measure of access to health care would be a local government’s land area. Obviously, this measure would likely be highly correlated to the mileage of health care service routes, and there are pros and cons to relying on land areas instead of mileage. On the negative side, land area may overstate the need for health care resources of districts that contain large unpopulated swathes of land. On the positive side, land area is arguably a more objective, transparent measure of access and is more directly related to the government’s policy objective of assuring the provision of health care services in close geographical proximity to the population. In addition, land area may in fact be a better measure of the challenges faced by rural districts in providing health care services, which not only includes the logistical issues of access, but also the challenges of hiring quality medical personnel in rural areas, and the social, economic, and cultural differences found in rural environments.

*Source: GSU (2003).*

The disadvantage of the use of vehicle road mileage as an allocation factor in the health formula (both conceptually as well as practically) is that road distance is only a partial indicator of the added cost of providing health services in a rural area.<sup>51</sup> As already noted above, rural and more remote areas are likely to suffer from other drivers or higher health care needs and other cost-disadvantages as well. As such, in the process of assessing which allocation factors might best account for the added expenditure needs for health services, a range of other allocation factors should be (re-)considered, including:

- DMO vehicle route mileage, multiplied by regional fuel price index. Using this indicator as an allocation factor would account for both the impact of the size of a district, but also adjust for the relative distance or isolation from major market centers.<sup>52</sup>

<sup>50</sup> Although great care should be taken in making international comparisons of this sort, by comparison, the privately owned vehicle mileage reimbursement rate in the United States, as authorized by the General Services Administration, is US\$ 0.535 per mile, or about US\$ 0.35 per kilometer for fuel, maintenance and depreciation.

<sup>51</sup> The potential inaccuracy of the administrative data (and the potential for bias or manipulation) could be considered an additional disadvantage.

<sup>52</sup> See GSU (2003), Box 2.1 for an analysis and discussion of regional fuel prices. Even in the absence of a regularly updated regional fuel price index, it would be possible to band regions into several categories, for instance, representing regions with high, medium and low fuel prices .

- Land area, or capped land area. Land area is a common measure included in allocation formulas to account for the relative greater expenditure needs of more rural areas. In 2003, it was decided by the health sector to use route mileage over land area, since it was argued that route mileage provided a better measure of (lack of) access. At the time, it was argued that there are some districts that have a large land area without a proportionately larger need in health expenditures, especially where there are national parks and other large tracts of relatively empty land. To address this concern (and prevent these outliers from receiving an excessive share of grant resources), the Local Government Development Grant (LGDG), however, adopted the use of “capped land area”. While a share of the LGDG is distributed in proportion to land area, for districts that have a population density below 20 persons per square kilometer, the land area is adjusted or “capped” at a land area consistent with a population density equal to 20 persons per square kilometer.
- Land area (or capped land area), multiplied by a regional fuel price index.
- Alternatively, the number of rural residents (as reported by the census) could be used as an indicator for the relative increase in cost for serving rural populations.

**Other cost considerations.** There are several other issues that should be taken into account with regard to cost variations in health service delivery. First, it has been raised that districts that are located further away from the regional headquarters face higher costs due to the more costly travel up and down to the regional headquarters. This issue is dealt with in greater detail in Section 4.8 (below).

Second, it should be noted that the allocation factor for DMO vehicle road mileage was excluded from the drug allocation formula since the cost of drugs was expected to include the cost of MSD delivering drug down to each health facility. However, MSD is now considering changing its costing practices, which would require councils to pay MSD extra for the delivery of drugs directly to the facility level, or alternative, to deliver drugs itself from the council headquarters down to the facility level. The impact of this change should be taken into account in the review of the drug allocation formula.<sup>53</sup>

Third, special consideration might be given in the MMAM/HSDG window to cost variations for the inputs into infrastructure construction. While in some countries (such as Nepal or Indonesia) the input prices of construction materials vary multifold between jurisdictions, Tanzania’s geography is unlikely to contribute to price variations of equivalent scale. Although it is likely that cement, steel, and other construction materials are more expensive in more remote districts due to higher transportation costs, it is also likely that land and (unskilled) labor costs are likely to be lower outside of the main urban areas. It is argued further below that instead of focusing on construction cost variations, it is quite likely that a more important determinant in the variation of health infrastructure needs is -first- the uneven distribution of in the number of primary health facilities across local jurisdictions and -second- variations in the need for staff housing and other ancillary capital goods (such as latrines, solar panels, and so on) in more remote locations.

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<sup>53</sup> For instance, if MSD were to introduce a distance-based delivery premium, this may argue for the re-introduction of the distance factor into the drug allocation formula. Alternative, if MSD were to revert to the practice of delivering drugs to each council headquarters only (or if councils would choose this option), then this would have an impact on the OC/HBF formula, rather than on the drug formula.

#### 4.4 Ensuring the provision of basic health services in under-staffed councils (“equity”)

As discussed earlier in Section 2, one of the main drivers –if not, the main driver- of inequitable access to health services in Tanzania is the under-staffing of health facilities in rural areas. According to HMIS 2010, out of a total of 5,848 health facilities, 24 percent (or 1,422) lack a qualified clinician. The absence of qualified health staff is arguably greatest in the most remote locations, which offer the least desirable residential and professional opportunities.

However, the pattern of which local government is “under-served” depends a lot on the exact measure that is used. For instance, it is interesting to note that the LGAs that are under-served in terms of clinical staff (as measured by the share of inadequately staffed facilities) are not systematically under-served in terms of facilities (as measured by the average service population of facilities per council). Similarly, there is only a relatively weak correlation (0.53) between health salary spending per person (as measured by PE grants per capita) and the number of professional staff per 1000 residents. Furthermore, serious concerns exist about the quality of the HMIS data with regard to staffing. The definition of who should exactly be counted as qualified clinical staff could have a major impact on the incidence of which district would be considered to be “understaffed”. If one were to include an equity factor in the allocation formula based on reported staffing figures, the distributional impact would thus depend to a large extent on the exact allocation factor chosen.

***Including equity in the allocation formula: the initial BHSP proposal.*** In recognition of the fact that staffing shortfalls form a major obstacle to effective and equitable health service delivery, the World Bank (under its Basic Health Services Project) has been advocating that, in order to enhance the equity and efficiency of health services, councils with fewer clinical staff (relative to its service population) should receive a greater Health Basket Fund allocation in order to be more fair.<sup>54</sup> Conceptually, the argument being made is a strong one: the additional HBF/OC resources that would be provided to under-served councils (those who receive less than their fair share of PE) could be used to attract workers in remote or undesirable places, or alternatively these resources could be used to compensate for the shortfall in PE resources by providing resources to fund alternative health interventions (as a substitute for the absence of traditional public health services). In fact, as noted in Box 1.2., the original recurrent sectoral block grant formulas –including the Health Sector Block Grant formula- were supposed to be applied to the allocation PE and OC resources together, which would have provided off-setting (equalizing) OC allocations.

Preliminary simulation analysis shows that the current proposal for incorporating a 10% “equity” window as part of the OC/HBF formula in fact would have a relatively minor impact on the “fairness” of OC/HBF resource distributions. In part this is by design, as the approach proposed by the World Bank would not only focus on the districts that are most disadvantaged in terms of staffing (or that have above-average under-staffing), but rather, the proposed approach provides every council with an “equity” allocation. The proposed “equity allocation” window (as proposed by BHSP) would thus result in relative small increases in allocations for “under-served” councils when compared to the current allocation formula: 16 councils would receive a net increase in their allocation in excess of TSh 100 per capita, of which seven councils would receive a net increase exceeding TSh 200 per capita.

***Technical concerns.*** There does not appear to be universal support for the argument that the inclusion of poverty, under-five mortality and remoteness (as measured by DMO vehicle road mileage) is not

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<sup>54</sup> For instance, see the power point presentation “Preliminary Proposal: Equity Factor for FY13”.

enough for the distribution of OC resources to be 'fair'. One counter-argument which we heard during our consultations (arguing against the inclusion of an "equity/understaffing" allocation factor) was that by adhering to the existing formula-based allocation approach, under-served councils (whether in terms of staff or infrastructure) would already receive their "fair share" and would likely have considerably more access to OC/HBF resources per clinical staff or per facility when compared to a discretionary grant allocation approach. As such, a council that is under-staffed (or that faces a relative shortfall of health infrastructure) will automatically have a proportionately greater OC/HBF allocation available per clinical officer or per dispensary in order to improve services.

A related argument which was raised during our consultations was that by providing even more financial resources to councils where staffing is the weakest, this may in fact result in weak budget execution and inefficient spending –rather than in better service delivery.

To a large extent, the answer to the question where OC grants that counter-equalize deficits in health staffing or wage spending can successfully improve health services depends on whether OC is a complement or substitute to PE. In the absence of additional (HRM) reforms, a strong argument can be made that OC is not an effective substitute for PE, as additional OC cannot be used to hire temporary health care workers. Similarly, there is little or no convincing evidence that merely topping up salaries of existing staff (in the absence of additional steps, such as better performance monitoring) will improve public health services. However, in combination with other interventions, additional resources might improve health services in locations that are currently underserved.

***Political economy considerations.*** Another concern that should be taken into account is that there may be political obstacles to adopting a stand-alone "equity" component that offsets shortfalls in staffing and PE. As already noted in Section 1 (Box 1.2), objections arose to applying the formula-based block grant system to PE and OC together, which would have meant that understaffed councils would have received a compensatory OC allocation. In fact, the very concept of formula-based grants is not fully embraced by all government stakeholders: this is particularly true for MOFEA officials who are consistently confronted by the unmet needs of politicians and local government leaders. Although the first few years after the introduction of formula-based block grants in 2004 saw an improvement in the equity of local health resources, there was substantial backsliding in adherence to the formula from 2006/07 forward for PE and OC allocations (Boex, 2007). This concern is confirmed by the analysis in Section 2. More recently, a proposal was tabled to provide offsetting development allocations to understaffed councils that received below-average PE.<sup>55</sup>

It is unclear what motivates the weak support for formula-based, equalizing OC allocations by MOFEA, but concerns about weak budget execution for OC in understaffed councils; the view that OC is a complement to PE (rather than a substitute); a belief that the current formula is already sufficiently 'fair'; and political economy factors all seemed to have played a role. Indicative of the sensitivity about 'second-guessing' the PE allocations made by PO-PSM was a comment made by a MOFEA budget officer who advised "to leave [the PE allocation] as it is because employees remunerations are controlled centrally and the government has invested much in developing the Human Capital Management Information System (Lawson version 9). Since the system has shown big achievement in controlling

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<sup>55</sup> A review of the 2009/10 LGA Budget Guidelines uncovered that TSh 43 billion –which was intended to be allocated across 36 of the neediest, most under-served councils- was instead distributed by MOFEA across all LGAs in an arbitrary manner. At this stage, it was proposed to distribute these TSh 43 billion in proportion to the "Service Delivery Gap" as measured by the relative under-allocation in PE (see Boex, 2009: Annex 6).

ghost workers, the government shall continue allocating resources to all employees based on number and scales of those available on monthly payroll.”<sup>56</sup>

A related concern about the equity approach currently under consideration is the desire for cross-sectoral consistency. If the health sector formula would adopt an equity component, this could potentially raise concerns for other sectoral allocation formulas as well. It is not likely that this is a discussion that PMO-RALG is able to lead at this stage, nor is this a discussion that either the Ministry of Finance or PO-PSM would be keen to have in the near term. To the extent that this is an important policy issue nonetheless, and to the extent that policy makers (and potentially development partners) wish to engage with the government on this issue, it would be prudent to pick a more opportune time to have this discussion.

***Alternative approaches to achieving equity (reaching under-served residents).*** The pros and cons of adopting an “equity” allocation factor that seeks to offset shortfalls in health staffing or PE distributions should be largely measured in political terms and in terms of the increased complexity of the formula. As such, it might be worth exploring whether it would be possible to achieve greater equity through alternative means, for instance, by modifying one of the existing allocation factors to incorporate the notion of being under-served. Options to be considered should include modifying the poverty allocation factor to become a measure for “poor and hard-to-serve residents” or alternatively, for the U5MR allocation factor to be designated as a measure of both burden of disease in combination with inadequate service delivery.

One concrete (and most likely politically more palatable) alternative would be to tackle not the inequitable distribution of local health staff and/or PE directly, but rather, to focus an alternative “equity factor” on the underlying causes why certain geographic areas are currently underserved. In particular, it is likely that remoteness (distance from urban areas and transportation networks), the lack of access (the distance from the health facility to the catchment population), and possibly the difficulty of serving certain catchment populations (e.g., traditional or nomadic peoples)—beyond what is already captured by the other allocation factors—are major contributing factors to certain areas being under-served by local health staff. In fact, it is likely that the labels “remote” or “under-served” more often than not apply to only part of a district, rather than to the district as a whole. As such, one could probably come up with an objective measure of the number of residents within each district that is “hard to serve” based on pre-specified criteria.<sup>57</sup>

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<sup>56</sup> The authors of this report do not necessarily agree with the veracity of the arguments being made. In fact, it could be argued that providing LGAs greater discretion over managing their work force alongside the appropriate financial incentives (which was the intention of the original formula-based block grant system) would be much more effective in achieving the efficient use of human resources, and would be much more effective in detecting and controlling ghost workers than central controls. The intention of including the quote here is to show the extreme hesitance and caution within MOFEA to question the staffing and resulting PE allocation decisions made by PO-PSM together with the respective line ministries. As such, attempts to allocate OC resources explicitly in accordance with “staffing gaps” left by PO-PSM are most likely not only seen as distasteful by MOFEA, but more likely will be considered by MOFEA as overstepping the bounds of its institutional mandate, as it would put MOFEA on a collision course with PO-PSM by being openly critical of the shortcomings of PO-PSM staff allocation decisions.

<sup>57</sup> It is likely that population and land area data from Population Census 2012—at the level of the Enumeration Area—as well as facility-level data from HMIS would be quite helpful in identify these hard-to-serve geographical areas and populations.

The best way to incorporate the needs of hard-to-serve (or under-served) residents as an equity factor into an allocation formula would depend on the aggregate number of “hard to serve” residents that are identified across the Mainland Tanzania, and on the additional cost required to equitably serve these residents. For instance, if the cost of reaching hard-to-serve residents is in the same range as the additional cost of serving poor residents (between OC and HBF, a poor resident attracts approximately TSh 800 per person in additional grant resources), then it makes sense to combine poor residents and the hard-to-serve in a single allocation factor, especially if the aggregate number of hard-to-serve is limited.<sup>58</sup> However, if an enumeration of the number of hard-to-serve households and residents is considerable and/or if the cost of serving them is disproportionately high, the health sector ought to consider introducing a separate allocation factor for difficult-to-serve populations.<sup>59</sup>

It is important to consider that this approach would have to be closely tied to efforts to improve the equity of the within-district use of health resources (which is unlike to run into political economy objections at the central level) and for incentivizing the performance of health sector staff in such a way that clinical staff will be motivated and rewarded to work in more remote facilities. The positive impact of linking additional resources to better local service delivery performance is discussed in Section 4.6 below and is likely to have a considerable impact on improving the equitable access to adequate health services.

#### 4.5 Incentivizing the performance of the facility-level in delivering services

Increasing attention has been paid in recent years to the need to improve the performance of health staff in the delivery of front-line health services in Tanzania, including by rewarding the performance of health facilities and health workers. In particular, the “Pay for Performance” (P4P) pilot in Pwani Region appears to be achieving (potentially replicable) improvements in the performance of health facilities and front-line health staff (see Box 4.3). The Ministry of Health and Social Welfare has clearly expressed its intention to mainstream the lessons from this P4P experiment in order to improve the performance of local health facilities across the country.

Although some of the aspects of the development of a performance-based health financing system fall beyond the scope of the current study, it is important to achieve a common vision of how to fund and manage performance incentives at the local level as part of a mainstreamed local health finance system. In doing so, it should be recognized that if one were to simply upscale the pilot experience from Pwani to the rest of the country (Mainland), it is unlikely that similar improvements in health services and health outcomes would be achieved: although some of the aspects of the P4P mimic a mainstreamed performance-based health finance system, the manner in which the performance of local health officials is monitored (both at the council level and at the facility level) is quite centralized and top-down, in a

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<sup>58</sup> For instance, if there are 2 million hard-to-serve resident in Tanzania Mainland, then combining the number of hard-to-serve residents together with the estimated number of poor residents (currently about 15 million), would mean that, all else equal, districts would receive an additional TSh 700 for each poor or hard-to-serve resident (OC and HBF combined). Assuming that 40% of these grants gets used at the facility-level, this would translate into approximately TSh 2 million or US\$ 1250 in additional resources per primary health facility (with a catchment population of 7000) in a hard-to-serve area. The base grant for a health facility (based on the population window alone) is TSh 5.5 million (or US\$ 3500).

<sup>59</sup> For example, setting aside 5 percent of the total health grant pool (for OC plus HBF combined) for difficult-to-serve areas, based on the same assumptions as noted in the previous footnote, would result in an additional allocation of TSh 3000 per resident, or approximately TSh 8.5 million (US\$ 5,300) per health facility in a remote or difficult-to-serve location.



way that cannot be replicated nationally. The up-scaling and mainstreaming of the Pwani experience into the local health financing system should recognize that how one chooses to provide performance incentives can have a major impact of the equity and efficiency with which health services are funded and delivered.

**Box 4.3: Basic features of the Pay for Performance pilot in Pwani Region**

The Pay for Performance pilot project in Pwani Region provides financial incentives for improved coverage and quality performance on predetermined service delivery targets and indicators in reproductive and child health, as well as on data collection and data use. The project involves all health facilities providing Reproductive and Child Health (RCH) services in the Pwani Region, comprising seven (7) Hospitals, nineteen (19) Health Centers and one hundred eighty three (183) Dispensaries.

P4P may be applied to all dispensaries, health centers and hospitals, whether government, private or faith-based, that perform any category of reproductive or child health service, including family planning, antenatal care, labor and delivery, postnatal, and child follow-up. P4P indicators cover each of these areas to provide incentives for proxies that represent the full continuity of care.

Full achievement of indicators by health facilities earns a fixed indicator payment amount; while 75%-99% achievements earn half (1/2) of this payment amount; and achievements of less than 75% earn no payment on that particular indicator. For each six month period, maximum facility payouts (beginning in January 2013) are fixed as: TZS 1,300,000 per Dispensary, TZS 5,000,000 per Health Centre, 6,800,000 per Up-Graded Health Centre, and 10,600,000 per Hospital. Out of the total amount of payments earned per cycle, facilities are directed under the P4P scheme to split incentive payments between facility improvements and staff bonuses.

In addition to the facility-level performance indicators, there are several performance indicators for Council Health Management Teams (CHMT) and Regional Health Management Teams.

*Source: MOHSW 2012. National Expansion of the P4P Pilot. Pay-for-Performance (P4P) Pilot Management Team, October 2012.*

**Promoting equity and performance should go hand in hand.** While achieving a more equitable allocation and promoting the performance of health workers and health facilities could be considered as two separate objectives of a revised health sector finance allocation mechanism, these objectives actually cannot be dealt with in isolation, as both of these objectives seek to improve the access and quality of health services received by residents across the country. As such, rather than creating parallel funding mechanisms for each of these objectives, it would be preferable to address these concerns together in the overall design of the system of local health financing rather than treating these issues as stand-alone objectives. How would one go about designing a funding mechanism that provides incentives for improving the performance of health facilities while still ensuring that resources are allocated in an equitable manner?

Part of the answer is that there is a need to strictly separate the measurement and reward of the performance of front-line health service delivery on one hand, and the measurement and reward of the performance of council level health officials in managing, overseeing and backstopping the delivery of health services on the other hand.

#### **Box 4.4. Retention of health workers in rural areas should be a key factor in the allocation formula**

One comment received during our stakeholder consultations was that “the retention of health workers in rural areas should be a key factor in the allocation formula”. We concur that the horizontal allocation formula should focus on improving service delivery quality across the national territory, with a particular focus on ensuring that adequate resources are available to ensure the adequate health services in rural areas. However, in our view, this requires not only the retention of health worker in rural areas, but in fact, requires us to incentivize the effective performance of health worker in rural areas. Absenteeism and absconding of health workers in rural areas is high. Care should be taken in the design of the allocation formulas (as well as in the subsequent guidance that is provided to the local level) to reward the delivery of adequate health services rather than rewarding the mere physical presence of health staff in un-desirable locations.

The state of knowledge on how to achieve adequate health services –particularly in the more remote rural areas in Tanzania, and in countries that are similar to Tanzania- is incomplete. There is no convincing empirical evidence in the health finance literature that merely topping up salaries of existing staff will improve health services in remote and underserved areas (i.e., “achieve equity”). Nor is there evidence that any other solution or intervention (such as the construction of staff housing) on its own accord has the power to retain health workers in rural areas and to ensure adequate service delivery. In fact, in our view, achieving equity cannot be accomplished separately from ensuring that resources are used in an accountable and effective manner at the local level. (In line with this argument, in Section 4.6 below, we argue that performance and equity go hand in hand). As such, providing top-up allowances for health workers in rural areas without ensuring improved service performance is thus unlikely to improve current imbalances in access to adequate health services.

Although the detailed answer to this question is explored in a more comprehensive manner in Section 5.1, an important part of the answer to this question—based on extensive experience in the design and implementation of intergovernmental fiscal grants in developing countries around the world—is quite counter-intuitive: do not increase a council’s overall grant allocation based on the performance of its health facilities. This implies that the Pwani experience should be significantly modified as it is up-scaled and mainstreamed: after all, under the current scenario, the aggregate (total) size of the health facility performance bonuses for each council is determined by the number of facilities (of each type) that meet their performance criteria, multiplied by the performance bonus to be received by each facility type (which is fixed in nominal terms).

There are two reasons for this counter-intuitive advice, but the main concern relates to the questionable quality of self-reported health facility attendance data, which would become even less reliable if greater payments would result from better (self-reported) performance indicators:

- First, in a nationwide, integrated performance incentive system, the CHMT will have to be the primary monitor of health facility-level performance. Whereas in the context of a limited pilot experiment, it is possible to assign the monitoring function to regional-level health officials, ministry officials and third-party monitors it would be nearly impossible to achieve a consistently high degree of external supervision in a nationwide roll-out, especially in rural and more remote parts of the country. As such, we need CHMTs to be honest brokers and reporters of front-line health service performance. However, if the council receives greater resources because the health facilities within the local jurisdiction perform better, both council level-officials and facility staff would have an

incentive to over-report the performance of local health facilities.<sup>60</sup> In contrast, when the size of council allocations does not depend on the performance of health facilities, council-level officials have no financial incentive to over-report the performance of local health facilities (see Box 4.5).

- Second, if the size of council grants would be determined by the performance of local health facilities, it is quite likely that –if reported fairly- remote councils with difficult-to-serve populations would receive fewer –rather than greater- resources. As such, a performance incentive scheme that is not carefully designed is likely to make the distribution of health funding less equitable rather than more equitable.

#### **Box 4.5 Incentive-compatible reporting of performance of primary health facilities**

Ergo and Paina (2012) discuss who should carry out verification in performance-based incentive schemes. Their discussion includes a summary of common verification actors and the types of verification activities they usually engage in. They consider the independence of the various possible verification actors (including Ministry officials, NGO partners, local external entities, and so on), as well as the degree of the integration of the verification process, cost, and stakeholder engagement.

In order for a nationally integrated performance incentive to succeed, the structure of the performance system itself will have to provide incentives for systematic and unbiased monitoring of performance indicators: while PHFs might wish to over-report attendance data (and similar indicators) in order to gain their performance rewards, the incentive system would have to be designed to ensure that council-level officials would gain little from colluding with the front-line health staff. In fact, under the proposed design, the CHMT would risk losing their council-level performance incentives if it failed to ensure compliance with facility-level reporting standards. In turn, the CHMT would be monitored by the regional level, possibly back-stopped by zonal teams, in order to ensure the performance on their own performance indicators (tracking oversight and backstopping).

Instead, it would be appropriate to provide each council with a formula-based recurrent grant allocation that does not depend on any facility-level performance measures or health outcome measures. Rather than providing a separate performance-based allocation, each council could be instructed to set aside a minimum fixed share (say, 10%) of its HBF allocation (or OC allocations, or both) for the purpose of rewarding performance at the primary health facility level (e.g., dispensaries and health centers). This approach would, first, maintain council-level health officials as unbiased monitors of facility-level performance, and second, would ensure an equitable allocation of health resources based on the allocation formula (rather than placing councils with remote facilities that are typically understaffed and serve hard-to-reach populations at a disadvantage).

As a second stage of an incentive-compatible system of performance-based allocations to primary health facilities (PHFs), the maximum performance allocation for each individual PHF within a district would be determined by distributing the total amount set aside for facility-level performance award (i.e., the 10% of the HBF grant) in proportion to each facility's estimated service population. While this is again a departure from the Pwani P4P experience, this step would again ensure both equity and incentive compatibility: both within and between districts, a dispensary serving 6000 people would be

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<sup>60</sup> There is extensive evidence –anecdotal, case evidence, and empirical evidence- that such over-reporting occurs. Such over-reporting is universal, and takes place whenever the incentives exist and external supervision is imperfect. As such, this phenomenon takes place in low-income countries such as Tanzania, as well as in industrialized countries such as the United States.

given twice the performance incentive compared to a dispensary serving 3000 people.<sup>61</sup> This provides a greater financial incentive for clinical workers and other health staff to work at facilities where their skills are more urgently needed, as reflected by the greater service population. In addition, because the overall performance bonus pool is specified as a share of the formula-based grant, the financial reward for well-performing health facilities is greater in districts that face greater poverty, remoteness, and burden of disease (or any other allocation factor contained in the health sector allocation formula).

To the extent that some districts (or parts of districts) are under-served (either in terms of infrastructure or staff), the equity and incentive effects that result from the proposed allocation approach are even more pronounced when considered per doctor or clinical officer (or per facility), as this allocation approach *automatically* rewards health staff in districts with clinical staff shortages. After all, under the proposed scheme, the potential performance bonus per doctor or clinical officer is inversely proportional to the staff shortage: if there is only half the necessary qualified staff in a council, the potential performance bonus per officer is twice greater. This gives a major incentive for staff to gravitate towards under-served councils and understaffed or under-staffed health facilities, and thus providing an automatic or self-correcting incentive, rather than relying on top-down measures to be developed to identify which districts or facilities are under-served.

#### **Box 4.6: Absenteeism, performance incentives, and motivation of professional health staff**

Like many developing countries, the health sector in Tanzania faces considerable challenges with absenteeism among public health workers, and motivating performance. PO-PSM (2012; p 10) notes that the results of survey of staffing problems in underserved areas in Tanzania conducted in 2008 indicated that the major factors influencing staff attraction and retention in those areas are related to finance, amenities and governance. These included the lack of special incentives; lack of supplementary income opportunities; lack of suitable quality housing; lack of adequate access to communication services; lack of adequate access to water and electricity, management and organization practices.

As noted in Section 2.2, Tanzania spends roughly TSh 300 billion (approximately US\$ 200 million) annually in salaries for local health staff; international experiences suggest that under-performance and absenteeism may represent 30-40% of this amount. This means that absenteeism and under-performance of local health workers is a major public sector management and development finance issue, which raises the question: how does the health sector motivate under-performing health workers to perform according to their capability, including in more remote areas?

One aspect noted by the PO-PSM (2012) and dealt with in this section is to improve pay through a Pay for Performance mechanism, which (as already noted) will provide bigger incentives for health staff to work where fewer staff are already posted.

Another aspect to motivate worker is to ensure adequate living and working conditions. This will require a focus on properly equipping existing health facilities and upgrading staff housing, as well as properly equipping existing facilities in terms of solar panels, basic transportation, and so on (rather than focusing on the construction of new health facilities). However, the value-for-money from such expenditures should be carefully considered on a case-by-case basis: for instance, if the construction of staff houses were done in isolation (e.g., without better

<sup>61</sup> Naturally, it is harder for a single clinical officer to achieve the facility's performance standards when the service population is twice higher compared to another health facility. It was anecdotally observed that the Pwani scheme may be giving clinical workers an incentive to transfer away from facilities with larger service populations or facilities with harder-to-reach service populations that were unable to attain their performance standards.

monitoring), it is likely that this would result in unused staff housing and continued absenteeism. Financial performance incentives and infrastructure upgrading should go hand-in-hand with better performance monitoring (administrative supervision, as –to some extent- “people don’t do what you expect, rather, they do what you inspect”).

Neither higher bonuses nor better facilities will counteract one of the key concerns of health care staff in remote places – the (social and) professional isolation that is typically associated with staff postings outside the main urban areas. Breaking this pattern of professional isolation should be an important strand of a comprehensive performance improvement / motivation / in-line capacity development strategy, and is perhaps the most overlooked yet the most cost-effective way to improve health services in Tanzania available (Leonard and Masatu. 2009; Leonard, 2012). A comprehensive system of continued medical education (CME) and regular (monthly or quarterly) clinical mentoring and supervision (including day-long supervision visits by mentors) should ensure that health staff on the front-line improve their professional standards; are service delivery and patient-focused; and apply the latest standards in medical practice. Such supervision will give local health staff regular access to professional mentors who can be advocates for their careers, thereby providing greater visibility and better promotion opportunities for effective health staff.

***Do health facility-level performance indicators feed back into the allocation formula?*** Just like the current Pwani P4P experience, under a nationwide performance funding scheme for PHFs, the performance of health facilities would be formally evaluated on a regular basis (primarily by CHMT) based on a number of pre-specified performance indicators. Those PHFs that meet their performance standards would receive the cash performance grant. Those who do not meet their performance standards are not awarded their performance grant by the CHMT; instead, these failing facilities are enrolled in a remedial action plan.

In the scheme outlined above, performance indicators do not enter into the allocation formula which is used to distribute financial resources between districts. In fact, as noted above, including performance indicators into the formula would most likely lead to biased reporting, which would be impossible to monitor rigorously from the central level for 4000+ health facilities. While facility-level performance indicators do not enter into the allocation formula, it is nonetheless important that the PHF performance indicators are carefully reviewed in order to provide appropriate (and equitable) performance incentives across the national territory.

Another lesson from grant design is to keep the performance standards simple. There is a desire for M&E systems insist on front-line staff to prepare a wide range of detailed reports, rather focusing on the main indicators, such as the quantity of health services provided and a handful of indicators on compliance with processes and procedures. Since it is very hard to monitor the quality aspects of health services through administrative monitoring, it is better to deal with these issues indirectly or through alternative monitoring systems, rather than by building over-complicated reporting systems. For instance, whereas the quality of health services that is provided by a PHF is difficult to observe, it is much easier to indirectly observe that residents avoid going to a specific health facilities as a result of poor service delivery quality (since attendance will be low, as reflected by certain indicators). In addition, administrative reporting mechanisms cannot be expected to substitute for regular clinical mentoring and supervision visits, which allows clinical mentors/supervisors not only to observe the quality of health care being provided during day-long supervision visits, but also allows clinical mentors/supervisors to train clinical workers in a hands-on fashion on specific practices and techniques that conform to best medical practices expected from front-line health workers.

Finally, it may be appropriate to set lower performance (utilization/attendance) standards for facilities in selected cases (typically in more remote or hard to serve areas) in order not to unfairly punish the staff working in these facilities for factors beyond their control. However, such lowering of performance expectations should be the exception and not the rule, and should never be pursued frivolously in order to reward facilities and staff that are not living up to expectations. Instead, such lower alternative standards should only be pursued in exceptional cases –and only with Ministry approval- after several years, after all remedial actions have been tried and failed to bring up the performance indicators despite the full efforts by the council and the facility’s staff.

**Remedial action for failing facilities.** Although much of the attention is showered on facilities that achieve their performance targets, in reality, the improvement of health services requires that the majority of attention (as well as additional resources) should flow to those facilities that fail to achieve their performance targets.

Because in the proposed approach discussed above the pool of performance incentives for PHFs is determined by a formula-based process (rather than being driven by the number of facilities meeting their performance targets, as is the case in Pwani), councils get to retain the balance of unused performance incentives. This means that the performance funds that were initially set aside as performance rewards for the PHFs that ultimately failed their performance targets automatically becomes available for use by the CHMT to develop and implement a performance improvement plan for these failing facilities.<sup>62</sup>

**Box 4.7: Capturing facility-level OPD and IPD attendance data and other facility-level indicators**

One of the weaker links in the management of local health services in Tanzania appears to be the vertical management and supervision of Primary Health Facilities by the DMO and the CHMT. On average, each district supervises roughly 30-35 Dispensaries and Health Centers. Proper management techniques require that the management and supervision of such a large number of facilities requires the use of certain management metrics. However, it is unlikely the DMOs and CHMTs regularly use quantitative measures to assess the service delivery performance or the efficiency of PHFs in their jurisdiction. The introduction of such techniques requires (a) setting up the necessary systems to collect relevant facility-level data and (b) building the capacity of district-level health staff to compute and use relevant service delivery indicators.

While facility-level tabulation of patient load and other attendance information is needed in order to achieve proper managerial supervision, mechanisms should be put in place by central and local authorities that minimize the reporting burden of health officers at the front-line level. Manual tabulation of health records is tedious, wastes time, and results in many inaccuracies. Improved facility-level reporting of attendance data –which is currently one of the weakest links in health sector’s reporting system- could be greatly strengthened by replacing the paper-based IPD and OPD registers at the health-facility level and provide PHFs with the tools to electronically capture their IPD and OPD registers.

<sup>62</sup> The details of how to develop and implement these remedial service delivery improvement plans falls beyond the scope of the current study. However, it would be prudent to ensure regional involvement in this process to make sure that the unspent balance of performance funds is fully used to improve the delivery of health services of the specific facility (of course, without providing cash bonuses or cash incentives to the facility staff). In the absence of careful higher-level involvement and supervision, there may be an incentive for councils to treat these freed-up resources for the CHMT’s own benefit, rather than for the remedial actions needed to improve health services at the facility level.

There is no reason to believe that a one-size-fits-all approach would offer a solution to the diverse conditions faced at health facilities across the country. As such, the health sector is encouraged to support the development of a range of options that would allow health officers to capture attendance records in a computerized format, and that would automatically (or as automatically as possible) transform the patient attendance and treatment registered into the necessary statistics that have to be reported upward.

Possibly one of the most universally available technologies would be to develop an Excel spreadsheet that automatically prepares reporting forms based on attendance details entered into Excel (mirroring the patient registers). Similar basic systems could track facility-level financial records and facility-level drug utilization. Of course, this solution would require providing clinical officers with a low-wattage laptop computer or tablet computer.

Other tailored solutions –for instance, using computer tablets and even smart-phone technology- could be developed in parallel, as different levels of access to electricity and internet connectivity may allow for different levels of computerization. Although the systems to electronically capture and transmit of basic utilization and performance data from primary health facilities to district officials would have to ensure patient privacy, such systems would not only enhance the quality of health statistics and reduce the time of clinical officers spent in data tabulation, the additional information contained in the detailed facility-level data should also assist the CHMT in providing more targeted support and backstopping to primary health facilities.

#### 4.6 Council-level performance in managing the delivery of local health services

The foregoing sub-section has exclusively focused on how the (distribution of intergovernmental grants within the health sector can stimulate and incentivize the performance of front-line health facilities and their staff. However, the same question is relevant district-level health staff: how can the health financing system be used to incentivize the performance of council-level health management teams?

There are two aspects to the council performance discussion, and figuring out how the performance of council-level health staff could be incentivized. First, how should council-level performance be measured? Council performance in the health sector could be measured through its budget performance (or budget execution), or alternatively, council performance could be measured by an performance assessment process which verifies whether certain policies and procedures are being followed at the local level. Second, once you have defined and measured the performance of a council health management team, how does one go about structuring performance grants for council-level performance?

***Stimulating health sector budget performance?*** With regard to budget performance, arguments can be made in favor and against incorporating a performance incentive into the council's health allocation. This discussion largely boils down to an argument of efficiency versus equity. On balance, however, we would not recommend stimulating council-level performance in the health sector on the basis of budget execution performance in the health sector.

Proponents of the efficiency argument might suggest that councils that are unable to spend their previous year's budget (for either OC or development expenditures) should receive a smaller grant allocation the subsequent year, thereby arguable providing an incentive for greater spending, rewarding better budget performance, or at least, ensuring that a higher share of aggregate grant resources is spent quickly at the local government level.

One expected disadvantage of incentivizing budget performance is that this approach will most likely reduce the resources available to councils that are already disadvantaged, whether in terms of staffing levels and/or remoteness. Other concerns would include the effectiveness of the approach and the perverse incentive that might be provided. After all, a high budget execution ratio does not necessarily mean that resources are spent well at the local government level. In fact, incentivizing budget performance could result in councils inefficiently spending their remaining resources at year's end on goods that are easy to procure, rather than carrying forward their resources to the next budget year and spending their remaining resources in an efficient manner in line with the council's service delivery needs. Indeed, weak budget performance is likely indicative of other administrative problems at the local level (weak capacity to procure; staff motivation problems; problems with procurement mechanism, and so on), and it would be overly simplistic to believe that these obstacles would be resolved simply by providing a financial incentive to do what comes naturally to most operating units: spend money. As such, although there is a need to support stronger budget execution at the local level (and avoid the accumulation of large balances), it is unlikely that introducing a performance incentive by itself will produce the desired results.

In addition, it is important to recognize that the failure to fully execute budgets (whether from quarter to quarter, or before the end of the budget year) reflects prudent and rational behavior on the part of local government officials. For instance, maintaining large HBF balances is a rational response to the delayed and irregular flow of HBF, and the need to use OC first. In addition, there are also delays and inaccuracy in the reporting of health expenditures, which would complicate relying on budget execution data for the purpose of stimulating local health expenditures.

***Measuring the performance of council-level health management.*** A more subtle or nuanced approach to incentivizing council performance to the grant system would be on the basis of a non-budget related measure of performance. The performance of council-level health management could be measured through a single council-level performance indicator, or through a more involved annual health sector performance assessment process.

One of the suggestions that has been made by the World Bank in the context of BHSP has been to incorporate a measure of district-level performance into the HBF (and presumably, Health OC) based on the number of out-patient attendances per clinical health worker. The idea behind proposing this indicator was that the chosen measure should be independent of the level of funding or the level of staff that each council was provided (as this is beyond the control of the council). The proposed indicator further appears to be based on the implicit assumption that the number of outpatient attendances per clinical health worker reflects the quality of council-level management, rather than the impact of exogenous factors.

During our consultations, it was noted by stakeholders within the health sector that the data needed for the proposed indicator would be rather unreliable and potentially quite inaccurate. As was already noted in sub-section 4.1 above, there is no guarantee that OPD attendances (by necessity, self-reported by local health staff) are reported reliably by the HMIS system, and should not be used as a basis for grant allocations. In addition, there are numerous concerns about how one would define the set of clinical health workers that would be relevant for this measure). Furthermore, it is likely that the number of OPD attendances is heavily influenced by exogenous factors beyond the control of local health staff, such as population density, the size of the geographic catchment area, and so on. Furthermore, the indicator actually does not tell us much about the performance of the council health



team, but rather, is much more driven (in addition to exogenous factors) by the performance of front-line (facility-level) health staff.<sup>63</sup>

Given the weaknesses identified with the proposed measure, what indicator(s) would be suitable to measure the performance of council-level health staff? Two sources of inspiration are available.

First, Tanzania has built up considerable experience with performance-based grants through its experience with the Local Government Development Grant system (LGDG), including some experience in the performance-based allocation of HSDG allocations. The basic annual performance grant process requires an annual performance assessment to take place at the beginning of the budget formulation cycle, where the performance of the council is determined by an external examiner on a number of good governance- administration- and financial management practices. Councils who perform well on the annual assessment (based on their assessment score) may receive a greater grant allocation than councils who perform poorly. For instance, councils who perform well may receive 100% of their formula-based grant allocation, whereas councils performing adequate or poor may receive only 80% or 50% of their formula-based allocation, respectively.

Second, in addition to the experience with performance-based grants under LGDG, the P4P experience in Pwani is also providing useful experiences with performance-based health sector grants. As part of the P4P process, the RHMT and CHMTs have to validate the data reports prepared by PHFs. In addition, they are also required to report on partogram evaluations at all hospitals and up-graded health centers and death audit evaluations for all maternal and perinatal deaths. The RHMT and CHMTs receive a performance bonus if they perform above their performance threshold.

Based on these experiences, MOHSW has to carefully explore what behaviors or processes it might wish to incentivize at the council level. Under a possible council-level performance scheme, CHMTs could be rewarded for their performance in four concrete areas that are measurable and that are critical for the effective functioning of Tanzania's health system, notably:

- (i) ensuring consistent on-spending of health resources to the facility-level as required by existing CCHP Guidelines, and achieving a within-district equitable distribution of resources at the facility-level (i.e., limiting spending on council-level overhead, ensuring that the resources reach the facility level, and making sure facility-level staff have the necessary discretion over these resources );
- (ii) ensuring the provision of clinical mentoring, support and strengthening of front-line service staff (e.g., ensure one or more full days of face-to-face clinical mentoring/supervision per months at each local health facility);
- (iii) ensuring appropriate clinical oversight is provided over health services, for instance, by properly following up and investigating deaths at local health facilities and reviewing other clinical documentation (for instance, as currently required under P4P/Pwani); and
- (iv) ensuring that the council and all PHFs within the council area meet all HMIS and other sectoral reporting requirements.

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<sup>63</sup> As noted above, an important design recommendation for performance-based financing at the local level in Tanzania is to clearly separate the measures of performance of front-line health staff and the performance of council-level health staff.

In principle, regional-level and zonally-based officials (backstopped by MOH&WS and PMO-RALG) should be able to annually assess and verify the degree to which council-level officials have achieved the performance standards set out for them. The verification process should involve facility-level health staff as well as input from health facility user groups, who have an incentive to accurately report on the quality of back-stopping they receive from the district-level. Other performance elements can be verified in a more top-down manner.

***Structuring performance grants for council-level performance.*** One question which has not been addressed so far is how any council-level performance measure should be applied. For instance, should the recurrent health sector grant allocation for a council (either from OC or HBF) be adjusted based on the performance of the CHMT? Or alternatively, should such a performance incentive be applied on the development side of the budget?

Although it is attractive to think that better council performance could be spurred by a monetary performance incentive on the recurrent side of the budget, from an intergovernmental transfer design view point, it is probably best not to apply a performance condition on Health OC or on the availability of the HBF. Since OC and HBF resources are used for the recurrent operation and provision for health services, reducing the OC resources for poorly-performing councils could possibly undermine the ability of the district to effectively support the delivery of health services.<sup>64</sup> Introducing performance-based recurrent grants (especially in an environment of stagnant or declining health resources) could thus potentially result in greater inequity and poorer service delivery.

Furthermore, monetary performance-bonuses might play a less prominent role in motivating council-level health staff vis-à-vis providing monetary incentives to front-line health staff. Council health management teams are by definition posted at council headquarters, where their day-to-day performance is much more easily observed and monitored by their direct superiors, whether they are generally much less isolated than front-line health staff.

Instead, there is a stronger argument to be made to provide councils with a performance incentive when it comes to their development budget.<sup>65</sup> For instance, it would be worth exploring whether (or more accurately: how) a performance assessment process at the council level could meaningfully be structured in order to guide part of the allocation of health sector development grants, where an annual performance assessment mechanism is in principle already in place as part of the LGDG.<sup>66</sup> Section 5.5 recommends that it might be possible to funnel a council-level performance grant to local authorities in the form of a capacity building grant that is part of the Health Sector Development Grant.

Finally, the point should be restated that—to the maximum extent possible—the performance scheme to enhance the performance of CHMTs should be funded through a separate mechanism from the performance incentive scheme for PHFs. Although it would be possible for regional health authorities to

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<sup>64</sup> This is especially to the extent that poorly-performing councils (which fail to secure their top-up bonus) may divert OC/HBF resources away from local health facilities to make up for their “loss”.

<sup>65</sup> It should be noted that funneling council-level performance incentives through the development side of the budget does not necessarily preclude top-up grants for CHMT staff.

<sup>66</sup> It should be noted that unlike in previous years, the annual performance assessment in Tanzania is no longer conducted by an external party. External performance assessments have been replaced by an assessment process internal to PMO-RALG, relying heavily on regional staff. This reform now gives rise to potential bias in the assessment process, as a poor assessment could reflect poorly on the performance on regional staff itself and could result in a smaller budget allocation for subordinates of the assessor in the region.

monitor and validate the performance of council-level health officials in a more-or-less consistent manner, it would be (nearly) impossible for national or regional health officials to validate the performance of PHFs within each council. Therefore, if councils' performance would be judged based on the quality of health services delivered by PHFs, councils would be given an incentive to over-report the quality of health services at the facility level in a way that cannot be externally verified.

#### 4.7 Local health infrastructure needs

Health infrastructure is divided quite unequally across Tanzania Mainland. An average district in Tanzania has a service population of 6100 residents per primary health facility.<sup>67</sup> The best-served district (Mwanga DC) has an average service population of 2,235 residents, while the least-served district (Bukombe DC) has an average service population per facility of 15,361 residents.

With regard to this larger-scale primary health facility infrastructure (DHs, PHFs, and staff housing), we would not expect health infrastructure needs of every local authority to be strictly proportionate to its population. On one hand, we would expect geographically larger and less densely populated districts to require a greater number of health facilities (for the same number of residents) in order to provide an equitable degree of access.<sup>68</sup> On the other hand, it is not likely that it would be efficient (neither in terms of capital infrastructure overhead, nor in terms of staffing) to provide the same level of access to health facilities across the entire country, either in terms of having a dispensary in every village, or in terms of having a health facility within, say, no more than 5 kilometers of each household. However, it is not probable that the need for health infrastructure in Mwanga DC is seven times larger than in Bukombo DC. The current distribution of health infrastructure across the national territory appears to reflect historical patterns rather than being a reflection of an optimal (efficient and equitable) geographic allocation of health infrastructure.

To the degree that resources are available for this larger-scale health infrastructure development – either from domestic or international resources- some measure of the “health infrastructure gap” could be used as an important guide to determine which local authorities are in the greatest need of additional infrastructure. To the extent that the health sector is keen to provide access to health services for under-served residents in the country, it would have to focus its efforts on constructing new facilities in areas that are currently most under-served in terms basic health facilities. If the health sector sets its “minimum infrastructure norm” too high, all LGAs will have a substantial infrastructure gap, which would be impossible to fund given the limited available health development resources.

Health development grants could also be used for a range of smaller-scale development activities, such as rehabilitating existing health facilities, constructing latrines, perimeter walls, and even furniture. It is likely that the need for smaller-scale health development spending is distributed somewhat more evenly across the national territory (although we would still expect traditionally disadvantaged areas (both in terms of infrastructure as well as staffing) to have somewhat higher needs when compared to traditionally better-off LGAs.

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<sup>67</sup> This computation aggregates all PHFs, counting Health Centers as 2.5 Dispensaries. Due to the different structure of health services in urban areas, urban areas have been excluded in the computations for the current paragraph.

<sup>68</sup> It should be noted that access to physical health facility is not necessarily the same as effective access to health services. Mobile clinics, localized outreach, community health workers as first line providers may be alternatives to expanded physical infrastructure in the health sector.

#### 4.8 Resources for the fixed costs of local health administration

A common practice in the design of recurrent transfer schemes is to provide each local government authority with a small fixed amount or lump sum before distributing the remainder of the grant pool on a formula basis, recognizing the fact that every council has some minimum fixed needs for administrative overhead expenditures. Even though this element was not included in the previous health sector formula, it would not be unreasonable (based on its conceptual merit) to include such a lump sum as part of revision of the formula. For instance, it would be quite reasonable to allocate a fixed lump sum in the range of TSh 10 million – Tsh 25 million to each council to cover the cost of fixed administrative expenses prior to distributing the remainder of the HBF pool (or the OC block grant pool) in accordance with the formula.<sup>69</sup>

It should be noted that the introduction of this change to the formula will only have a very marginal impact on resource allocations, with only 17 councils receiving an increase in allocations of more than Tsh 100 per capita (and only 7 councils receiving an increase of more than TSh 200 per capita). The majority of beneficiaries from this reform would be town councils, which typically have a small population. In addition, a few district councils with very small population would benefit from the introduction of a fixed amount allocation as well.

A slight variation on this proposal would be to recognize that although all councils roughly face a fixed minimum level of administrative overhead, some LGAs are at a cost disadvantage due to the distance from the regional headquarters. Although the main focus of the health sector allocation formula should focus on the direct cost of providing health services to the local government's residents (rather than funding administrative costs and travel allowances for district-level health staff), it is undeniable that the requirement to attend administrative meetings coordinated at the regional level imposes an additional burden on remote councils.<sup>70</sup> Although it would be possible to include an additional allocation for each council based on its exact distance from its regional headquarters, it might be simpler to provide a supplemental fixed allocation (say, an additional lump sum allocation of TSh 10-25 million) to LGAs that are located at a road distance greater than 100 kilometers from their regional headquarters.<sup>71</sup>

#### 4.9 Councils with extra-ordinary needs

It has been correctly argued that no formula can take into account all the needs and special conditions that are encountered by LGAs. Indeed, we have argued (in Section 3) that allocation formulas are not

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<sup>69</sup> It would be prudent to specify this fixed amount in nominal terms, rather than as a percentage of the pool, since the grant pool may grow faster than inflation. As noted in Annex B, universal principles of sound transfer design require "equal shares" or a fixed lump sum to account for only a small portion of the resource allocation pool.

<sup>70</sup> For instance, it was pointed out to the study team that Loliondo village (the location of the District Headquarters for .Ngorongoro district) is situated in excess of 360 km from the regional headquarters in Arusha. This results in a considerable higher cost to access the regional headquarters compared to district councils that are located closer to the regional headquarters (e.g., Meru District), and especially compared to the urban council that is located in the urban area that forms the regional headquarters.

<sup>71</sup> An additional lump sum of TSh 25 million for a council that is 100 km away from its regional headquarter translates into an additional allocation of approximately Tsh 2 million (or roughly \$1300) per month. This is not an unreasonable amount, given the added transportation and travel costs incurred for travelling between the district and its regional headquarters.

the financial equivalent to a surgeon’s scalpel, but rather that allocation formulas are preferable over discretionary allocations as long as they provide a degree of “rough justice”. This does not take away the fact that –despite the general acceptance of formula-based allocations- central government decision-makers are faced with numerous requests for special allocations based on special circumstances. Some districts –such as Mafia- can claim to face extra-ordinary circumstances that result in special needs – some districts may only be accessible by boat, while other districts face difficult service delivery conditions due to extremely low population density, remoteness, or due to the nomadic nature of its service population. Yet other districts may face periods of insecurity or may be affected negatively by drought. None of these special circumstances are accounted for in the current allocation formula; in fact, it may be difficult to accommodate as part of any allocation formula.

**Box 4.8 : List of councils with extra-ordinary needs**

<u>Arusha Region</u>	<u>Lindi Region</u>	<u>Mtwara Region</u>	<u>Tanga Region</u>
1. Longido	10. Nachingwea	20. Newala	30. Pangani
2. Ngorongoro	11. Kilwa	21. Nanyumbu	31. Kilindi
	12. Liwale	22. Tandahimba	32. Mkinga
<u>Pwani Region</u>	13. Ruangwa		
3. Mafia		<u>Mwanza Region</u>	<u>Kagera Region</u>
4. Kisarawe	<u>Mara Region</u>	23. Ukerewe	33. Muleba
5. Rufiji	14. Rorya	24. Sengerema	34. Ngara
		25. Kwimba	
<u>Iringa Region</u>	<u>Mbeya Region</u>		<u>Rukwa Region</u>
6. Makete	15. Chunya	<u>Ruvuma Region</u>	35. Mpanda
	16. Ileje	26. Tunduru	36. Nkasi
<u>Kigoma Region</u>	17. Kyela	27. Namtumbo	
7. Kigoma	18. Mbarali	Shinyanga Region	<u>Manyara Region</u>
8. Kasulu		28. Meatu	37. Kiteto
9. Kibondo	<u>Morogoro Region</u>		38. Simanjiro
	19. Ulanga	<u>Tabora Region</u>	
		29. Sikonge	

In recognition of such special needs, the Government already allocates a share of its local development grant budget to councils with extra-ordinary needs (see Box 4.8). However, the identification of the current councils included in the budget as under-served or special needs councils is not necessarily limited to councils with extra-ordinary needs within the health sector.

How can these extra-ordinary needs be addressed while staying true to general principles of a sound formula-based allocation? The range of solutions to this challenge varies along a spectrum between two extremes. On one end of the spectrum, one could argue that a percentage of the OC block grant pool (for instance, 1 or 2 percent of the grant pool) could be set aside each year in order to address the extra-ordinary needs of a limited number of councils. PMO-RALG, together with the MOHSW and MOFEA, could determine the distribution of this “special needs pool” in a discretionary manner on a case-by-case basis. On the other end of the spectrum, PMO-RALG, together with the MOHSW and MOFEA, could identify a limited number of “special needs districts” on the basis of the relative cost impediment faced by each of these special needs districts. These councils could then be placed into one of several “special needs” categories (e.g., with special needs that are 10%, 25%, and 50% higher than their formula-based

allocation, for instance), and provided with their top-up grant allocation accordingly. This latter method would follow the spirit and the letter of the Local Government Finances Act more closely.

#### 4.10 Councils with greater own source revenues (and other health finances)

It has been suggested by some –both within government as well as outside government- that urban local authorities should receive smaller health grants, since their ability to pay for health services from own source revenues is greater. Although this is an appealing argument at first glance, on balance, the question whether to penalize urban LGAs (or potentially, rural LGAs as well) based on their ability to collect own revenue sources is a complex one. Non-trivial considerations include the difficulty to accurately measure a local government’s level of revenue potential, as well as the concern that reducing grants in response to higher own source revenue collections might reduce the incentive of local authorities to collect own revenues. Box 4.9 provides a list of additional arguments why it might not be appropriate to allocate less Health OC to councils with greater own revenue potential.

##### **Box 4.9 : Arguments why it might not be prudent to allocate less Health OC to councils with greater own revenue potential**

- The Local Government Finances Act requires the level of sectoral grants to be determined in proportion to local needs (without a legal provision for reducing the allocation for councils that collect more own source revenues)
- Local own source revenues are intended to fund urban services, such as street cleaning, solid waste management, the provision of urban sanitation, and other urban services. Unlike the grant-aided sectors (education, health, agriculture and so on), these public services do not receive ongoing funding support through the grant system.
- There is a “common pool” problem with own local revenues – numerous actors at the central government level seek to claim the common pool of local revenue for their own particular interest. There is no reason why the health sector has any stronger claim on local revenues than, say, the education sector (who wants LGAs to spend their own revenues on education activities), or any other sector.
- In the end, the pool of local revenue actually “belongs” to the local community and as such, should be prioritized by local officials. Whereas equitable health is a national policy priority, this may simply not be viewed as an equally important local priority.
- To the extent that urban health services are used by residents from outside the municipality, “forcing” urban authorities to use their own source revenues to fund health services would result in imposing an inefficient externality upon municipal residents and tax payers.
- The overwhelming majority of national (central) revenues paid to the TRA is paid by urban residents. A large share of these resources is re-distributed away from them towards the rural areas. Unless the urban areas at least get back their ‘fair share’ in public services (compared to their expenditure needs), urban areas would be penalized twice.
- It is not likely politically tenable for urban LGAs to be disproportionately targeted in terms of resource allocations. Urban local governments tend to have a higher ability to execute their available budget resources, and as shown in Section 2, urban local governments tend to be favored in terms of discretionary OC resource allocations.

These arguments notwithstanding, it is intuitive that wealthier LGAs have greater resources and therefore should be able to contribute something to the provision of health services in their own jurisdictions. In FY 2010/11, LGAs collected TSh 158 billion in own source revenues, which exceeds the

total amount of Health OC plus the local allocations from the Health Basket Fund combined.<sup>72</sup> The scale of the uneven distribution of own source revenues is reflected in Table 4.4. The figures in the table confirm that considerable variation exists in own revenue collections among LGAs, ranging from over TSh 18,000 per person (Mbeya Urban) to less than TSh 350 per person (Kilindi). As expected, the Dar es Salaam local authorities on average collect more than the other urban areas, and the other urban areas collect more than rural LGAs.

The results in Table 4.4 also suggest that local revenue collection patterns are not easily separated into clear-cut categories by their administrative status. For instance, whereas the DSM LGAs *on average* collect more than other urban authorities, the country's other larger urban jurisdictions (Arusha, Morogoro, Moshi, Mwanza, and Tanga) roughly collect the same amount in per capita revenue as the DSM LGAs (around TSh 10,000 per person). It is equally true that some of the town councils with low revenue potential collect no more revenue per person than an *average* rural local authority.

**Table 4.4 Descriptive statistics for per capita own source revenue collections (Actual, 2010/11)**

	All LGAs	DSM LGAs	Urban LGAs	Rural LGAs
Average	3,494	11,852	6,809	2,538
Standard Deviation	3,040	3,093	3,966	1,650
Coefficient of Variation	0.870	0.261	0.582	0.650
Minimum	333	9,142	2,578	333
Maximum	18,571	15,221	18,571	9,229
Max/Min Ratio	55.7	1.7	7.2	27.7

Source: Computed by authors based on PMO-RALG data.

As we contemplate whether wealthier urban areas should receive a smaller health grant allocation, it comes to mind that these councils are the same ones where residents have better access to private health services (and are in a better position to afford them). In addition, urban residents tend to be less poor and therefore are not exempted as often from paying fees for health services. A larger share of urban residents has health insurance, which provides additional funding for local health facilities. Finally, urban residents are generally more educated and wealthier and therefore may be assumed to have a better health status compared to their non-urban compatriots. However, the relatively lower need for health financing that results from these factors is already captured in the current health sector allocation formula by the other variables included in the formula: lower urban poverty rates already give urban areas a smaller piece of the pie, as do their relatively shorter DMO vehicle route mileage, and their lower under-five mortality rate.

A final observation in this regard is that the very urban areas that are deemed to be excessively advantaged by the allocation formula are in fact the very same urban areas that are already being advantaged in terms of the (largely discretionary) PE allocations. As shown in Table 2.1, an average urban area receives a 36% greater PE allocation than an average rural council (TSh 10,293 versus TSh 7,560, respectively). It is unlikely that health service delivery would be enhanced by disproportionately

<sup>72</sup> A government official (outside the health sector) consulted for this study conveyed that "rich LGAs have managed to motivate employees including those from health sector, creating a conducive working environment, recruiting temporary workers, support rehabilitation and construction and procurement of medical supplies/drugs/reagents as opposed to LGA with less revenues." This assertion was not supported by evidence. It is more likely that the accessibility location and amenities of urban districts is a major factor in the preference for urban postings for health workers. In addition, better supervision and mentoring (which is possible in urban settings) and a more educated catchment population likely contribute to a more motivating work environment.

reducing OC in these same areas. Instead of adjusting the formula applied to Health OC and HBF to give less money to wealthier urban areas than they would otherwise be due under an objective allocation formula, it would perhaps be more appropriate to ensure that the excessive, discretionary PE allocations to these urban councils is kept under control.



## **5. Preliminary recommendations for strengthening the equity and efficiency of geographic resource allocations**

Before making (preliminary) recommendations about the resource allocation formula for each individual funding stream, it is important to consider the system of local government finances and intergovernmental fiscal flows as a whole. In this context, Section 5.1 looks at the overall local health financing system (with an emphasis on the public funding streams), and proposes preliminary recommendations for the strengthening the overall equity and efficiency of health resource allocations. Subsequently, Sections 5.2 through 5.5 make detailed recommendations with regard to the allocation formulas to be used for individual funding streams. Some concluding remarks are made in Section 5.6.

### **5.1 Overall recommendations for strengthening the equity and efficiency of geographic resource allocations**

Overall, the intergovernmental grant system in support of local health services (as presented in Table 1.2) provides a sensible and pragmatic structure to fund the delivery of health services at the local government level in Tanzania, consistent with the country's overall PFM structures.

One potential concern—on its face—is the fact that the system consistent of five major funding flows to the local level run parallel to each other, which need to be carefully coordinated in order to ensure a comprehensive local health financing and service delivery strategy.<sup>73</sup> After all, effective health services can only be delivered when there is an (appropriately equipped) health facility; adequate trained (and motivated) health staff; operation and maintenance resources; and drugs and medical supplies. There are certainly reasons for concern in this regards: in particular, the divergence between the discretionary allocation of PE resources across councils (funding the salaries of health staff) on one hand and the (generally formula-based) allocation of other financial resources on the other hand is a concern. Similarly, the lack of harmonization between the presence of health infrastructure (including newly constructed health facilities) and health staffing is another obvious concern: for instance, DEGE (20??) reports numerous instances where new health facilities are sitting empty months after construction has been completed.<sup>74</sup>

An argument has been made for several years that it would be appropriate to disburse the PE and OC components of the health sector block grant jointly, on a formula basis. However, this is currently not an institutionally viable option. Therefore, it would be appropriate for PE and OC to flow as separate grant schemes, as is currently the case, which allows for the possibility to make sure that the Health OC grant is fully disbursed on a formula basis.<sup>75</sup>

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<sup>73</sup> Note that Figure 1.2 and Figure 5.1 abstract away from a number additional funding sources, including user fees, payments from health insurance funds and community health funds. In addition, funding and resources provided directly by vertical programs and extra-budgetary health interventions are not reflected in the figures.

<sup>74</sup> A similar problem occurs with drug allocations: a dispensary that is constructed and staffed –but has no drugs or medical supplies- is not able to effectively deliver services. The mismatch between PHFs and drugs was especially a concern when drug allocations were based on the number of PHFs in each council (see Boex and Msemo, 2007).

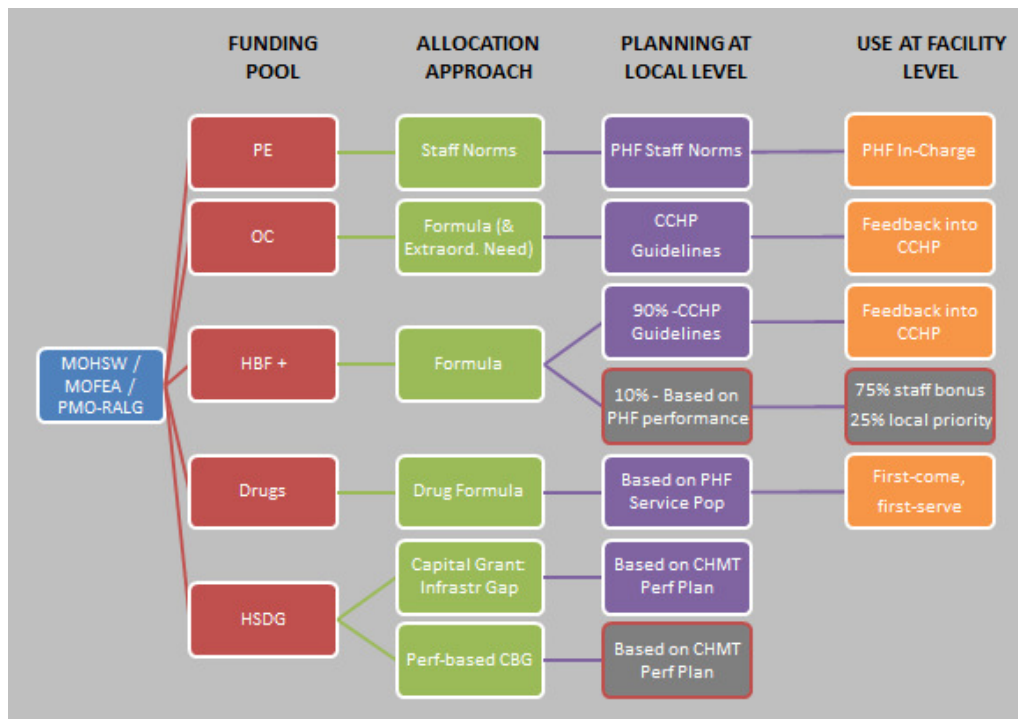
<sup>75</sup> Arguments could further be made to combine OC and HBF grants, and/or to incorporate drug resource allocations into health OC grants.

The existing complexities of the public funding structure for local health services point towards an important recommendation: going forward, care should be taken not to create new, additional funding flows. Instead, to the extent that the geographical allocation of health resources seeks to improve the equity and performance of health services, the issues of equity and performance should be integrated into the existing system whenever possible.

Based on these considerations, Figure 5.1 sketches out how a more equitable and more performance-oriented health sector grant system might be achieved. Greater equity (or more equitable access to health services) can primarily be achieved by (i) ensuring the equitable allocation between councils (the green column), and (ii) by ensuring that resources are used in an equitable manner within each local government jurisdiction (the purple column). How to achieve “equity” within each of the funding windows is discussed in greater detail below in Sections 5.2- 5.5.

Promoting better performance in the health service should not be funded through a separate funding mechanism. Instead, it was argued in Section 4 that it would be best not to vary council-level allocations based on the performance of health facilities within that council. As such, if possible, it is recommended to increasing the size of the Health Basket Fund to LGAs (for instance, by ten percent), noted as HBF+ in the graph below. In turn, ten percent of the HBF+ could then be set aside in order to provide performance incentives to PHFs. Even if financial conditions do not allow an increase in the size of Health OC and/or the HBF, it is worth considering whether setting aside a certain percentage of each council’s grant for facility-level performance incentives (in combination with other reforms) if the P4P pilot in Pwani suggest this reform has the potential to improve the quality of health services and health outcomes.

**Figure 5.1**  
**Main resource flows for local public health services: preliminary recommendations**



Separately, the Capacity Building window of the Health Sector Development Grant (the health sector window under the LGDG) could potentially be used to provide a performance incentive to the council level. Details about the proposed allocation formulas for the various grant windows are discussed in the remainder of this section.

## 5.2 Recommendations for strengthening the equity and efficiency of geographic resource allocations – Personal Emoluments

The recommendations for strengthening the equity and efficiency of geographic resource allocations for health PE is divided into two separate (but closely related) topics: (i) improving the inter-district allocation of health PE resources, and (ii) improving the intra-district allocation of health PE resources.

***The inter-district allocation of health PE resources.*** The inequitable geographic allocation of health staff and local wage resources within the health sector is flagged as one of the most significant obstacles to improving public health services. Indeed, the Public Expenditure Review 2011 (PER Macro Group, 2012: 68) notes that the management of human resources should be considered the first area for reform, as major weaknesses exist in human resources management and in the allocation of central government grants that are used mostly to pay local health workers operating in districts. The PER notes that it “is unfortunate that health sector managers have correctly identified the importance of human resources in the “HRH Crisis” but have made so little progress in improving HR management so far.”

### **Box 5.1 The role of MOHSW in determining local health staff postings**

The PER 2011 (p 69) notes that the determination of health staff posting is mainly the responsibility of PO-PSM and PMO-RALG, not the Ministry of Health. While PO-PSM holds primary decision-making authority in approving new local health positions across local government jurisdictions, it should be noted that PO-PSM does not make local sectoral staffing decisions on its own.

Once the aggregate resource envelope for staffing increases is determined for each sector, PO-PSM relies on guidance from two sources: first, it is guided by requests from LGAs themselves, and second, it relies on guidance from the sector ministries to distribute new postings across regions and LGAs.

Because local PE resources are not funneled through the line ministry itself, however, there is not terribly strong Ministry ownership over the distribution of local health PE resources across LGAs. In the absence of a strong voice from the sector ministry over the geographic distribution of new health staff, it is easiest for PO-PSM to place the new staff where they are most easily absorbed (typically in already well-served urban areas). If MOHSW had a Department for Local Health Services, the Ministry would be much better positioned to effectively engage with PO-PSM, MOFEA, and PMO-RALG on issues such as local health staff allocations.

The PER suggests that first action should focus on improving incentives for health workers to relocate, noting that the need for action to increase staffing in relatively underserved areas has been discussed for a long time, but that no conclusive actions have been taken as of yet. The analyses contained in the MOF PER 2011 shows that the distribution of resources is more than an equity issue since the misallocation of resources results in considerable inefficiencies in the delivery of health services, and the report argues that the productivity of local health funding would be substantially increased with more active management of human resources. As such, the PER 2011 argues that existing ideas to increase the incentives for workers to relocate to areas and facilities where they are needed the most should be

implemented with much greater urgency. Part of the challenge is that the policy responsibility for health staffing falls neither fully within the remit of PO-PSM (which lacks the technical know-how) nor within the remit of the health sector (which lacks the control over staffing within the sector).

Consistent with this greater urgency, the most recent Public Service Pay And Incentive Policy Implementation Strategy for 2012/13 – 2016/17 (May 2012) deals with the issue of staff inequity, and establishes –as one of its key policy objectives- to “attract staff to work in LGAs with staffing problems and ensure they are equitably distributed”. The policy document proposes two implementation strategies. First, the strategy document calls for “locally grown incentive packages/schemes specific to a local authority designed and implemented to attract staff for underserved areas”. Second, the document calls for the “Central Government to develop preferential allocation of staff to LGAs”.

PO-PSM (2012) argues that these strategies will address both the push and pull factors required to resolve the existing inequities. The pull factors are positive factors that serve as inducement, magnetically attract qualified skilled HR to work in a given location. On the other hand, the push factors are adverse factors that serve to discourage local staff from working in, and continuing to work in a location. The strategy document suggests that the focus of the implementation strategy should be on “improving living conditions through provision of government quarters and decent working environment, ensuring provision of clean water and power, improving access to training to public servants serving in underserved areas, and ensuring career geographic rotation.”

To the extent that many of these issues fall outside the remit of PO-PSM, within the health sector, it is important for the various health grant windows in the health sector to take on board these issues, and to provide greater resource to the “needier” districts in order for them to provide fund the incentives to attract the necessary levels and quality of staff.<sup>76</sup> In this regard, it is encouraging that PO-PSM implicitly recognizes the complexity and diversity of incentives that are relevant to attracting professional staff to different positions across space, and is therefore allowing local authorities to develop and implement the necessary incentive packages to attract staff for underserved areas, rather than imposing a one-size-fits-all top-down solution. For instance, the Health Sector Development Grant should prioritize basic improvements in working conditions and living conditions of health staff, as part of the broader equity and performance incentive strategy. Similarly, as discussed in Section 5.3 below, the health OC and HBF windows should place part of their resources at the service of incentive packages that result in pay for performance incentives (to be achieved in an equitable manner, both within and across districts).

***Preliminary Recommendations.*** Once incentives and funding mechanisms are in place to resolve some of the “push” factors” that keep health professionals from accepting positions in places where their skills are in short supply, while at the same time enabling LGAs to “pull” local health staff to their jurisdictions, how will we know that the equity of health staffing across districts is improving? To some extent, this progress in equity should be captured by the HMIS, which tracks primary health facilities that are not adequately staffed (by district).

In addition, MOHSW should be encouraged to take a more proactive role in the distribution of local health staff across the national territory. In line with the implementation strategy noted by PO-PSM (2012) to “develop preferential allocation of staff to LGAs”, a human resource standard should be computed by the MOHSW at the beginning of each budget formulation process by distributing the total

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<sup>76</sup> This, of course, is the purpose of having a more equitable territorial allocation of health (OC, HBF and health development) resources. The reader is reminded of the discussion of this issue in Section 4.4.

available local health PE resource pool for the next budget year in accordance with the health sector grant formula. Rather than trying to instantaneously achieve this formula-based allocation, this normative allocation should then be compared to actual PE allocations for each LGA in order to determine which councils have a relative shortfall in human resources in the health sector. MOHSW should insist that only LGAs which have a relative shortfall in health PE (i.e., LGAs that have a smaller PE allocation than the indicative formula-based allocations) should be allowed to attract additional health staff.

In principle, this incremental approach should achieve equalization in PE allocations over time. However, this approach is not likely going to be universally accepted, as over-served places (in particular, urban areas) would be prevented from hiring any additional health staff until the under-served localities have caught up.

***The intra-district allocation of health PE resources.*** Although existing staff inequalities across LGAs has received the bulk of attention in the PER process and in related budget analyses, the intra-district variation of staff resources is a closely related problem. In the absence of the right incentives among PHFs within each district, there is no guarantee that a more equitable distribution of PE resources *across* districts will result in better service delivery *within* districts. For instance, if a compensation scheme would simply top up salaries of all health workers in a district that was designated as “remote” (without any further action of performance incentives), we would simply expect a greater concentration of ineffective health staff at district headquarters. This means that the equity and performance incentive mechanisms for front-line health service delivery have to work not only *between* districts, but also *within* districts (as further discussed in the sub-sections below).

#### **Box 5.2 Improving the transparency of local health services and staffing (and health wage expenditures)**

Despite the fact that the bulk of local health expenditures is on PE, the distribution of local health PE allocations across LGAs is not very transparent. A considerable improvement in transparency can be made by requiring MOFEA/Budget Department/Payroll to make available monthly PE disbursements to each council by sector on MOFEA’s website on a monthly basis.

Another dimension of equity, performance and accountability that has not received adequate attention is council-level and facility-level transparency. Although MOH&SW has invested considerable time and effort into the strengthening of its HMIS (which in principle should contain detailed facility level data), the information system is largely used to inform centralized, top-down accountability mechanisms. No functioning information system is in place to provide local residents about basic information about facility-level health services, such as the locations of public health facilities within each LGA; the services offered at each location; the facility’s estimated service population; hours of operation; the name and basic contact information of the head of the facility; the name and contact information of the facility user group (if any); and the contact information for the district-level supervisor for the facility. Providing a nation-wide gateway for information on local health facilities would result in a considerable improvement in transparency, bottom-up accountability and improved service delivery access.

To the extent that MOH&SW’s HMIS system provides facility-level data (e.g., about utilization), it should be possible to make this data publicly available by linking this information to a health facility information gateway. Given the available information technology, it should also be possible to require LGAs (through PO-PSM’s Lawson system) to indicate the exact health facility or service location at which each local health worker is posted, and to make this information available as part of the local budget and/or on the internet. This would allow every policy analyst and every citizen to see the number of staff (by name or position title) that receive a salary at each Primary Health Facility and at each District Hospital.

### 5.3. Recommendations for strengthening the equity and efficiency of geographic resource allocations – Other Charges (Government) and the Health Sector Basket Fund

Since PE allocations are not under the exclusive control of the MOHSW, and because it takes time to encourage local health staff to move across space, it is not likely that PE allocations will change drastically from one year to the next. As a result, the most immediate change in the geographical distribution of health resources is most likely to come from the main health sector formula –the current 70/10/10/10 formula- which is applied to the Health Basket Fund as well as to Health OC (albeit somewhat more loosely in the latter case).

**Inter-district allocation of OC and HBF resources: Recommendations.** A whole range of options were discussed and explored in great detail in Section 4 of this report whether it would make sense to change the existing health resource allocation formula. In most cases, both pros and cons could be raised for any change to the formula. Without repeating all the various arguments made in Section 4, Table 5.1 summarizes some of the key options.

**Table 5.1 Summary of key options for modifying the main health sector allocation formula**

Option	Pros	Cons
<b>Population (70%)</b>		
Update data with Census 2012 (no other changes)	Up-to-date and objective	Having population as major factor seems simplistic Need better way to adjust for intra-census population growth Data not available yet (March 2013)
Replace Census Population with Estimated Service Population (to reflect higher income / Own Source Revenues/ private health provision of urban LGAs)	Reliance of urban residents on public health facilities in DSM and other urban areas is lower	Public health facilities in DSM and other urban areas are frequently used by residents from surrounding areas
<b>Poverty Count (10%)</b>		
Update estimated poverty count based on Census 2012 and Household Budget Survey 2012	Up-to-date and objective	Data is not accurate: local rural poverty has to be estimated based on regional poverty rate Data not available yet (March 2013)
Increase relative weight of poverty allocation factor	More “pro-poor” Politically popular?	Poor quality of poverty estimate reduces reliability of allocation Too pro-poor? (What about the needs of those just above the poverty line?) Does not address within-district poverty distribution
Eliminate poverty factor	Eliminates measurement issue	Public funding of health services are particularly important for the poor, who do not have access to insurance and other health resources
<b>Burden of Disease/ U5MR (10%)</b>		Data not available yet (March 2013)
Update estimated U5MR based on DHS 2010 (based on zonal U5MR)	More up-to-date and accurate than current estimate (which is based on national average for urban and rural U5MR)	Data is not accurate: local disease burden has to be estimated based on zonal U5MR

Increase relative weight U5MR	More resources would go where disease burden is higher	Poor quality of BoD estimate reduces reliability/accuracy of allocation
Use HMIS utilization data to produce “better” utilization measure	Intuitive approach	HMIS reports are not intended for this purpose; would require more detailed breakdown of utilization by facility Would result in local incentive to over-report utilization; currently incomplete
Eliminate Burden of Disease factor	Eliminates measurement issue	More resources would flow to urban LGAs, while greater perceived need is in rural areas
<b>DMO Vehicle Mileage (10%)</b>		
Update DMO Vehicle Mileage from current 2001 estimates	Up-to-date and objective	Unclear if data is still produced/ tracked by MOHSW
Replace mileage measure with (capped) land area	More objective (cannot be manipulated) More consistent with LGDG	Somewhat less intuitive; less direct link between costs and mileage/distance
<b>Equity / Hard-to-Serve residents</b>		
“Equity” (Greater OC resources to off-set fewer PE resources)	More equitable (when taking into account PE plus OC) Could provide greater incentive pool for underserved LGAs	Not embraced by MOFEA Unclear if would result in better services Could result in unused OC surpluses
Hard-to-serve resident	Allocates more funding to areas most likely to be under-served, especially in remote and	Would require constructing new allocation factor; details would have to be agreed
Extra-ordinary needs	Addresses needs that are not easily captured by regular formula	May distract from “clean” formula-based approach
<b>Other features</b>		
Fixed amount	Recognizes fixed admin costs; better match between formula and needs	Relatively small impact; mostly benefits town councils (not highest-need councils)
Distance from regional HQ (Distance > 100 km from Reg HQ)	Recognizes higher needs of more remote councils; better match between formula and needs	Relatively small impact; few councils

Note: It is recommended that a fixed part (e.g., 10%) of the formula-based health OC grants and the formula-based HBF allocations is set aside for stimulating the performance of primary health facilities within each local government. It is further recommended that council-level performance is taken on board as part of the HSDG/Capacity Building Window, rather than as part of the main, recurrent (OC/HBF) health allocation formula.

Two general recommendations should be made with respect to the strengthening of the allocation of health sector OC and the Health Sector Basket Fund:

- Given the delays in the release of up-to-date data for key allocation factors (specially, the 2012 Census and the 2012 Household Budget Survey), it is recommended not to implement any changes to the formula for FY 2013/14.
- Instead, the key stakeholders are recommended to engage in a series of consultations–informed by this report during the second half of 2013, along with any supplementary analysis, as needed), so that the formula revision can be owned and supported by all stakeholders within Government and can be taken on board for FY 2014/15 as part of a comprehensive, performance-based health sector funding strategy.

- The commitment by government and its donor partners should be for both Government OC and the HBF to rely on the same formula, and for the formula to be adhered to strictly for both of these grant windows.

Six preliminary but specific recommendations are made for consideration by MOHSW, PMO-RALG and other stakeholders in the review and revision of the health sector grant formula:

- **Recommendation 1:** Before applying the formula to the OC grant pool, every council should receive a fixed lump sum of TSh 25 million for fixed overhead expenditures. In addition, every council that is more than 100 km away from its regional headquarters (one-way) should be provided an additional lump sum of TSh 25 million. In addition, 2 percent of the total OC block grant pool ought to be set aside for councils with extra-ordinary needs (discussed under Recommendation 6 below).<sup>77</sup>
- **Recommendation 2:** It is recommended to maintain the general shape and structure of the current allocation formula, as well as the current formula allocation proportions: 70/10/10/10.
- **Recommendation 3:** It is recommended to continue relying on census population figures (based on Census 2012) as the main measure for local health needs, in recognition of the individual as the main client-recipient of local health services.<sup>78</sup> While it is tempting to adjust the estimated service population of the Dar es Salaam LGAs as well as other urban LGAs downward due to the many advantages held by urban authorities (in terms of higher household incomes, higher own source revenues, and better access to private health facilities), aggressively shifting resources away from urban areas will result in a decline in urban health services. Not only do the majority of urban residents still rely on public health facilities, but many residents from rural areas surrounding the cities and towns also rely on the health services provided in urban areas, resulting in a high out-patient utilization ratio in urban areas.<sup>79</sup>
- **Recommendation 4:** It is recommended to update the estimated poverty levels and the estimated Burden of Disease based on Census 2012 and the Household Expenditure Survey 2012. For urban councils, the Burden of Disease estimate should be based on the average urban U5MR. For rural councils, the updated Burden of Disease measure should be based on the average zonal U5MR.
- **Recommendation 5:** The health sector is advised to consider replacing the DMO vehicle route mileage with a council's (capped) land area as a more representative measure for the higher health expenditures needs in more remote and rural areas. Note that there is a correlation of 0.65 between capped land area and DMO route mileage.
- **Recommendation 6:** While recognizing that local health care needs in Tanzania are far beyond the ability of existing resources to cover them, there are some districts in the country that have extra-ordinary needs that are not captured by the allocation formula (even after taking into account the recommended changes to the formula above). It is recommended that these councils receive an additional allocation as described in Box 5.3.

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<sup>77</sup> Note that –in order to avoid duplication- these recommendations only apply to the OC block grant pool.

<sup>78</sup> In coordination with NBS, it is recommended that a more sophisticated method is used to estimate year-to-year changes in district-level population (based on historical trends in regional and urban/rural population growth). This will help to reduce the regional misallocation of resources which has particularly hurt Dar es Salaam and several other fast-growing regions.

<sup>79</sup> It should also be noted that the financial impact of all three other allocation factors currently already tends to be biased against urban areas.



### **Box 5.3 Agreeing on a set of councils with extra-ordinary needs in delivering health services**

It is recommended that MOHSW, PMO-RALG and MOFEA engage in a dialogue to determine a list of no more than 20 districts that have extra-ordinary needs. This list should identify the exact nature of the extra-ordinary circumstance (e.g., extreme low population density of part of the district, significant cross-district utilization of health facilities, hard-to-access or hard-to-serve population base). In addition, this list should indicate the relative cost (for the impacted local population in each district) of addressing the extra-ordinary need to be addressed in order to provide more equitable service. This list may have to be updated from year to year. It is recommended that the set-aside for extra-ordinary needs (e.g., 2% of the Health OC grant pool) is distributed in proportion to these extra-ordinary needs.

***Intra-district allocation of OC and HBF resources: Recommendations.*** As argued as part of the discussion of Figure 5.1 above (and as discussed in Section 4.5), it is important to integrate the funding for performance incentives into the existing funding flows, rather than creating a parallel funding mechanism.

As such, it is recommended to set aside ten percent of Health Basket Fund (HBF+) for the provision of performance incentives for Primary Health Facilities. This performance window should be apportioned among PHFs in proportion to their service population (as determined by the CHMT), and will only be awarded to each individual PHF if (and only if) it achieves its performance benchmarks, in accordance with a performance scheme similar to the P4P/Pwani pilot scheme.<sup>80</sup>

Although a review of the P4P performance indicators falls beyond the scope for the current report, it is recommended that the performance incentive structure is modified for the program's national roll-out in order to take into account the large differences in existing health services and conditions. This will be necessary to prevent creating unintended inequitable allocations across the national territory. For instance, it would be unreasonable to expect that localities that have long been neglected and under-served will instantaneously be able to meet the same standards as health facilities in better-off regions, such as Pwani Region. For most performance indicators, it would therefore be prudent to specify that a PHF should either achieve a certain indicator target (e.g., a standard of 80% or more facility-based deliveries) or the PHF should be able to achieve a certain improvement in the indicator score over the six-month period (e.g., an increase of 10% or more in the share of facility-based deliveries) in order to meet the performance standard.

Consistent with the pilot experience in Pwani, if the performance threshold is met by the health facility, up to 75% of this performance bonus could be distributed as staff bonuses, while 25% of the bonus should be programmed by the PHF staff together with the Health Facility Governing Committee for improvements to the health services provided at the facility. For those PHFs that do not meet their performance criteria, the performance bonus should remain with the CHMT budget, and should to be spent either on capacity interventions for the failing PHF or on improved service delivery at the relevant health facility, but may not be used for staff performance bonuses.

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<sup>80</sup> An average PHF has a service population of approximately 10,000. Based on a projected size of the HBF+ of \$1.45 per capita, the average performance bonus per dispensary would roughly be \$725 (TSh 1.1 million) per six months or \$1450 (TSh 2.2 million) per year. This is nearly equivalent to the bonus currently paid under P4P/Pwani.

Although the performance incentive component represents only a small portion of non-wage recurrent grants, this amount has the power to unlock under-performing health staff at the local level. However, we should not overlook the remainder of non-wage recurrent grants, including the Health OC block grant and the remainder of the HBF+.

Under existing guidelines, a large part (40-50%) of these resources should be set aside for the operations of the District Hospital and for the important backstopping and oversight functions of the DMO's office and the CHMT. However, according to CCHPG (July 2011, p 35), between 35-45% of HBF and OC block grant should be allocated for PHFs (HCs and dispensaries). It is very important to these resources actually flow down for the operation and maintenance of health facilities, and that the benefits from these resources are actually felt at the facility level by end-users in terms of better services. It is unclear to what extent the current guidelines are actually implemented as intended in this regard.<sup>81</sup> For improved, equitable health service delivery, it is important to ensure that the lion-share of these resources are actually spent at the PHF level (in terms of facilities' operation, maintenance, (non-medical) supplies, and so on), rather than being spent by the district level for or on behalf of the facility on things that do not have a direct impact on front-line service delivery (including things such as routine trainings for health workers, travel allowances, and so on). It would be appropriate to investigate whether health facility staff (and facility committees, as appropriate) are indeed integrally involved in prioritizing the needs of their facilities, and that the necessary resources flow down to the PHFs.

#### **Box 5.4: Ensuring predictability, timeliness, completeness and transparency of grant disbursements**

Local budget execution and service delivery are improved when intergovernmental fiscal transfers are received in a predictable, timely and complete fashion. As such, it is recommended that all intergovernmental grants are disbursed on a fixed disbursement schedule.

As far as Health OC, it is recommended that OC disbursements are made in equal portions (1/12<sup>th</sup>), on a monthly basis. This is possible since Government OC, by law, is disbursed by standing order. In contrast, MOHSW and DPs may want to consider release HBF grant to LGAs twice per year, say, on October 1, and March 1. This will reduce the transaction burden for releasing these funds, while at the same time allowing LGAs to plan their expenditures accordingly.

Furthermore, in order to ensure maximum transparency and predictability, MOFEA/Budget Department/RALG should be encouraged to release its control figures for all local government disbursements at the beginning of the budget year on its website by type of transfer, sector and council. Then, on a monthly basis, MOFEA could post releases by type, sector and council, so that all councils will know on a regular basis exactly how much they should have received and for what purpose.

Enhanced transparency of intergovernmental fiscal flows should be part and parcel of a broader effort to re-orient and align local governance strengthening activities more closely in support of the country's national policy objectives, such as improved health outcomes, improved education outcomes, better access to clean water, and so on as part of "improving local governance in support of improving local service delivery".

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<sup>81</sup> This sum that flows down to the PHF level is not an insignificant amount, as it should amount to approximately TSh 50 billion per year, or TSh 10 million per primary health facility. Calculation of estimate is based on 2012/13 budgeted amounts. Forty percent of this amount equals TSh 48 billion, which –in turn- divided by approximately 4500 public facilities is roughly TSh 10 million.

#### 5.4. Recommendations for strengthening the equity and efficiency of geographic resource allocations – Drugs and Medical Supplies

***The allocation of Drug & Medical Supplies resources: Current situation.*** Following a study on the allocation of drugs resources (Boex and Msemo, 2007), the MOHSW introduced a formula-based approach to distribute the resources for medicines and medical supplies. The vertical allocation rules and the horizontal allocation formulas are applied by the Chief Pharmacist in distributing the available drug resources among central and local health facilities. The allocation formula that was introduced for the allocation of drugs among local health facilities is quite similar to main health sector formula. However, since the distribution cost of drugs is already included in the pricing structure of drugs (or covered by non-wage recurrent resources), it was argued that the size of the local authority (in terms of DMO vehicle route mileage) does not result in a greater need for drugs. As a result, drug resources are allocated based on an allocation formula that relies on population (70%), poverty (15%), and UM5R (15%). As a second step in the allocation process, the drug resources available for local health facilities within each district are distributed based on “allocation units”, which are determined based on the estimated service population of each facility.

The introduction of the resource allocation formula for medicines and health supplies in primary health care facilities represents a major improvement in the allocation of drugs and medical supplies compared to the previous allocation pattern, which gave every Dispensary and Health Center across the country the same drug kit, regardless of its service population.

***Inter-district allocation of Drug & Medical Supplies resources: Recommendations.*** Two points should be considered with respect to the possible revision of the drug allocation formula. First, should this formula potentially be revised to mirror changes in OC/HSB formula? Second, should the drug allocation formula be revised to (re-)introduce the distance (or land area) factor into this formula?

With regard to the first point, yes, it is recommended that the drug allocation formula should be updated to reflect any changes in the main health sector formula. Whereas there is no need to introduce a fixed lump sum component, the other basic changes to the main allocation formula can be taken on board into the drug allocation formula, including recommended updates to the measurement of the local population (based on Population Census 2012), estimated poverty (based on Household Budget Survey 2012), and under-five mortality (based on the zonal U5MR's reflected in Table 4.3).

Second, should the drug allocation formula be revised to introduce the distance (or land area) factor into this formula? This depends on possible changes to the pricing policies of MSD. There is some indication to suggest that MSD would like to update its pricing structure to reflect the higher cost of delivering drugs to local health facilities in more remote areas. One option being considered is to allow councils to choose: either MSD can deliver the drugs for all PHFs to the District Hospital (or Council Headquarters), or councils could choose to pay a monthly or quarterly delivery charge per health facility per quarter.

Depending on the exact transportation cost structure to be introduced by MSD, the drug allocation formula might be revised accordingly. For instance, if the additional transportation cost will be a certain amount per facility, the drug allocation formula could add a “first charge” to the formula in proportion to this additional transportation cost (e.g., TSh 160,000 per PHF each the LGA). This would be similar to the allocation for remote councils suggested as part of the main formula. Alternatively, if MSD would

introduce a delivery cost structure that depends on distance or actual mileage, it would be prudent to align the current drug allocation formula (70/15/15) with the proposed new health sector formula (70/10/10/10) by introducing capped land area (or DMO vehicle route mileage).

**Box 5.5: Enabling procurement of drugs and medical supplies at the local level (though pre-qualification or framework contract)**

One set of challenges in the health sector that cannot be fixed through the horizontal allocation formula are the obstacles encountered by PHFs in the procurement of drugs and medical supplies. Currently, PHFs are bound to procure these supplies exclusively from MSD. This poses two potential supply-side disruptions. First, unless MOHSW allocates budget allotments in a regular and timely manner during the budget year to MSD for local drugs, supply disruptions may occur for local health facilities. Second, when MSD is stocked-out or has supply-chain management problems, PHFs may face a stock-out of their own. Both scenarios have major, direct ramifications for the quality of care that primary health facilities are able to provide.

One possibility that should be considered is whether local drug resources could be more effectively funneled to MSD order as (an earmarked) portion of the health sector block grant through Regional Votes. Under this arrangement, drug resources would be released on a monthly basis together with the Health OC grant, but would be withheld at source for disbursement to MSD.

Another intervention that should be considered is to permit (and in fact, encourage) multiple wholesalers to enter the field of drugs and medical supplies, allowing LGAs to source core drugs and medical supplies from a variety of competing sources. At a very minimum, PHFs –through their councils- should be allowed to procure medical devices, supplies, and (in the case of stock-outs at MSD) drugs, either from centrally pre-qualified vendors or through locally initiated framework contracts.

***Intra-district allocation of Drug & Medical Supplies resources: Recommendations.*** It would be appropriate to investigate the impact that the introduction of the new drug allocation formula – together with the revised intra-district allocation of drugs and medical supplies- has had on the medical resources available to PHFs that serve more remote areas. Since the new approach is providing drugs and medical supplies in proportion to their service population, PHFs that cover a larger catchment population should now be receiving more drugs than before, resulting in a more equitable allocation of resources and providing better access to drugs and medical supplies.

**5.5. Recommendations for strengthening the equity and efficiency of geographic resource allocations – Health Sector Development Grant**

There are two components to the Health Sector Development Grant that should be considered separately. First, there is the health infrastructure component. Second, a capacity building grant should be considered as part of the performance-based financing framework in the health sector. It might be possible to align the capacity building grant element with the capacity building efforts already being explored under BHSP Component 2.

***Health infrastructure grant.*** Chapter 6 of the Comprehensive Council Health Planning Guidelines (2011) is meant to guide each district to develop plans and budgets for a comprehensive infrastructure development plan. The main funding source for health infrastructure is the current (performance-based) health sector infrastructure grant (HSDG/MMAM) window under the local Government Development

Grant (LGDG) system. This grant provides about TSh 20 billion in local health infrastructure funding for FY 2012/13. On average, this is roughly equivalent to TSh 150 million (US\$100,000) per council or approximately TSh 4.5 million (US\$3,000) per existing public health facility. While in principle these resources are for the construction of new health facilities and new staff housing as well as for the rehabilitation and upgrading of existing facilities, in principle, the available resources are inadequate for the construction of any new structures. The CCHPG directs LGAs to consider addressing existing inequities in the distribution of health services, by giving priority to remote and underserved areas within their jurisdictions (taking into account both public and private services).

Since its inception, HSDG has been allocated in accordance with the main (70/10/10/10) health sector formula. Has this been an appropriate choice? Given the ambitions of MMAM to essentially provide universal and equitable access to health facilities (for instance, by establishing a dispensary in every village), the answer is probably 'no'.

To the degree that the HSDG/MMAM intends to fill the "infrastructure gap" noted in Section 4.7 by constructing hundreds (if not thousands) of new primary health facilities in villages that currently lack such health infrastructure, relying on the main health sector formula would be a poor choice. For instance, to the degree that resources are available for larger-scale health infrastructure development (such as new dispensaries, health centers, or staff housing), some measure of a "health infrastructure gap" could be used as a guide to determine which local authorities are in the greatest need of additional infrastructure. Such an infrastructure gap could be defined as the difference between a minimum norm for local health facilities and the actual number of such facilities. The infrastructure gap would exist only for LGAs for which the health facility requirement is greater than the existing number of facilities (otherwise, the gap is zero).<sup>82</sup>

In reality, however, due to its size, the resource allocation for the HSDG/MMAM falls short from providing a serious source for new construction funding to resolve the existing health infrastructure gaps in staff housing and PHFs. Unless the funding envelope for health infrastructure is increased significantly, the existing health development grant should thus mainly be used for major rehabilitation and upgrading of existing facilities (adding water supply, latrines, walls, medical equipment, solar panels, medical waste disposal infrastructure, a motor cycle for the clinical officer, and so on).

The need for these smaller infrastructures expenditures is likely distributed more evenly across the national territory in proportion to basic factors such as (service) population, poverty, distance or land area, and Burden of Disease. This means that –as long as the HSDG is primarily focused on funding infrastructure rehabilitation and maintenance, it would be reasonable to adhere to the main (revised) health sector allocation formula.

Possible modifications for the HSDG/MMAM funding window may be considered. To the degree that health sector infrastructure needs are higher in more rural and remote areas, one may wish to increase the relative share of the route distance or land area factor in the health infrastructure formula.

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<sup>82</sup> Of course, the (aggregate) size of the gap is determined by the normative "minimum" threshold. If the norm is set low (e.g., a minimum requirement of one dispensary for every 8,000 residents), the majority of districts will not be deemed to have any infrastructure gap, and the available resources will be focused on the highest-need districts. However, if the "minimum threshold" is set high (e.g., a dispensary in every village), then (almost) every council will have a major infrastructure gap, giving rise to an unaffordable aggregate amount of health infrastructure needs which becomes difficult (if not impossible) to achieve in an equitable manner.

Alternatively, to maintain a greater sense of uniformity in the formula (although not complete uniformity), for the purpose of the health infrastructure allocation, one could consider substituting the population factor with a measure of the service population of the LGA that is more heavily tilted towards rural users.<sup>83</sup>

Alternatively, one could consider dividing up the HSDG into two windows: one window that follows the main health sector formula, whereas the other window targets allocations to a more select set of (objectively selected) under-served councils, which could also at least bring the bottom up. It is unlikely that broad consensus could be reached within the sector to exclusively focus the HSDG on only the neediest of districts, given that this would most likely result in excluding a majority of LGAs from receiving any health development grants at all.

A final concern with regard to health infrastructure (and deficits in health infrastructure) is that the most urgent health infrastructure needs are most likely to occur at the rural fringes of the districts, rather than at the district headquarters. As already noted, the CCHPG directs LGAs to consider addressing existing inequities by prioritizing remote and underserved areas within their jurisdictions. In light of a more performance-focused and equity-focused local health financing system, it might be prudent to give DMOs/CHMTs more specific guidance not only to provide equal infrastructure support to these remote facilities, but rather, to achieve higher standards at these more remote facilities in order to increase the attractiveness of the facility as a posting.

**Capacity building grant.** One area that has received relatively little attention in the discussions surrounding performance-based local health sector financing is the need for ongoing mentoring of front-line health staff and the in-line strengthening of the capacity of clinical practitioners to provide professional, responsive and patient-focused care (Leonard, 2012). While the World Bank's BHSP incorporates capacity building as an important part of its efforts, it does not appear that a clear consensus has emerged on how to implement such capacity building going forward. To some extent, such capacity building efforts should be considered part and parcel of the recurrent cost of operating a health care system. In other cases, capacity building incentives may be used on a more temporary basis to make sure that council-level health staff play an appropriate role in the continual capacity development of their staff. This is particularly important in the health sector, as the professional ability of clinical providers has a direct bearing on the quality of health care provided.

As discussed in some more detail in Section 4.6 and Box 4.6, supporting the capacity development for improved front-line health service provision requires not only the provision of funding and support to provide continuing medical education opportunities, but also requires building the capacity of district-level clinical supervision and support systems. To the extent that a system-wide mechanism for continued medical education does not already exist (or is under-funded), MOH&SW should work with professional associations and NGOs in the health sector to develop and fund a module-based curriculum for continued medical education. Such a curriculum should provide a combination of distance-learning modules, classroom modules, and clinical practice modules that is appropriate for the state of health practice in Tanzania.

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<sup>83</sup> For instance, one might define the service population as total local population plus local rural population. This would assign a rural resident twice the level of resources as an urban resident. In doing so, the share of rural residents in an LGA would essentially be used as a measure of the differential infrastructure needs of rural health facilities, which require greater access to water, electricity, and so on.

Under a possible council-level performance scheme, CHMTs could be rewarded for (i) ensuring consistent on-spending of health resources to the facility-level (i.e., limiting spending on council-level overhead, as required by existing CCHP Guidelines); (ii) ensuring the provision of clinical mentoring, support and strengthening of front-line service staff (e.g., ensure one or more full days of face-to-face clinical mentoring/supervision per month at each local health facility); (iii) ensuring appropriate clinical oversight is provided over health services, for instance, by properly following up and investigating deaths at local health facilities and reviewing other clinical documentation (as currently required under P4P/Pwani); and (iv) ensuring that the council and all PHFs within the council area meet all HMIS and other sectoral reporting requirements. We noted in Section 5.1 that the Capacity Building window of the Health Sector Development could potentially be used to provide a performance incentive to the council level.

To the extent that clinical supervision and mentoring are currently taking place, these activities are likely being financed from Health OC and HBF resources. Indeed, it is not inconceivable that these activities are actually financed from the OC/HBF resources allocated to the cost centers for Dispensaries and Health Centers. If that is indeed the case, resources that in principle should be available for the basic operation and maintenance of primary health facilities may in fact be used for in-line capacity building activities.

In this spirit, one might consider a performance-based HSDG/MMAM Capacity Building window that will serve both as a funding source as well as a financial incentive for the CHMT to perform its functions well. Of course, the types of activities, training, equipment and supplies that could be funded through this window would have to be carefully defined upfront. It would be appropriate for this funding flow to be distributed in accordance with the same allocation formula as the main health sector grant, or a derived formula that tilts the allocation of resources in favor to (objectively defined) more remote or under-served councils.

## 5.6 Concluding remarks

Overall, the geographical allocation of health resources in Tanzania is in reasonably good shape. The area of greatest concern is the area of professional health staffing, which is currently not subject to norm-based allocations, and where until recently, the absence of effective incentives have prevented an equitable and efficient spatial distribution from arising. PO-PSM's *Public Service Pay and Incentive Policy Implementation Strategy, FY 2012/13 – 2016/17* (May 2012) seems to provide a step in the right direction in this regard.

The funding flows that are formulated and implemented in accordance with the health sector allocation formula (HBF, MMAM, and to a large extent, Health OC), are being distributed in an equitable manner across the national territory in a way that in broad lines corresponds to the relative resource needs for health services across districts. By and large, the formula is based on the notion that the population is the main client for public health services, and makes adjustments for higher expenditure needs that result from poverty, distance, and Burden of Disease. Relatively minor adjustments are recommended to update and improve the health sector allocation formula. It is recommended to finalize the revision of the formula when the latest Population Census and Household Expenditure Survey data becomes available from the National Bureau of Statistics.

In addition, it is recommended that greater attention is paid to the within-district allocation of resources in the future, to make sure that the resources that are earmarked for primary health facilities are indeed

used for the delivery of front-line health services, and are distributed equitably and effectively across PHFs.

Promoting the better performance of existing health workers will be critical to improving equitable access to adequate health services in Tanzania over the next several years. The past decade has seen a steady increase in funding for local health services, both from government side as well as from the international donor community. It is possible, however, that we are now entering a period where (both domestic as well as international) resources become increasingly constrained and where emphasis will have to be placed on improving the “value for money” in achieving better health outcomes, rather than to simply attract greater resources to the sector. As a result, the inadequate service delivery performance of local health staff is increasingly a binding constraint in the provision of local health services. As such, there is a need to set in place the systems and incentives to ensure that front-line health workers deliver adequate health services in an equitable and effective manner. The modifications to the local health transfer formula proposed in this report –along with a mainstreamed pay-for-performance system and other interventions to strengthen professionalism, accountability and oversight in the health sector- provide a solid foundation for a performance-based system of local health finance.



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## ANNEX A

### **Terms of Reference for short term technical assistance in the area of strengthening geographical resource allocation for the health sector Introduction**

The Ministry of Health & Social Welfare (MOHSW) is in the process of formulating a national strategy for sustainable health financing.<sup>84</sup> The Health Financing Strategy aims to provide the necessary framework for comprehensive and mutually reinforcing reforms in all areas of health financing, such that an increasing number of Tanzanians will have access to quality health services without facing financial risks related to health care with the eventual aim of universal coverage.

Health financing is typically viewed as comprising three elements: resource mobilisation, pooling, and purchasing. The latter includes the critical issue of how available resources are allocated within the sector. In Tanzania, there are various allocation formulas in place for public sector funding at present – for the Health Basket Fund, for the Other Charges component of the GOT recurrent budget, for the MMAM<sup>85</sup> funding under the Development Budget, and for medicines.

To meet these needs the Ministry has embarked on a number of initiatives and reforms. It has been resolved that such reforms should be done in a comprehensive and systematic way. As part of this process, MOHSW and partners have decided to review the current resource allocation formulae for which concerns have been raised over the past couple of years both in relation to the design and its application. For example, the health sector Public Expenditure Review for the Financial Year 2009/10 noted that a review of actual expenditures by Local Government Authorities (LGAs) showed little correlation with the expected allocation as per formula.

The new World Bank (WB)-supported project, the Basic Health Service Project, includes the strengthening of the allocation formula in respect of equity promotion, and also to incorporate performance incentives. The WB has proposed that an “equity” adjustment be made based on variations in the per capita availability of health staff at council level. Issues for clarification include: a) availability and quality of data on Human Resources for Health; b) decision on which staff might be included since, for example, a health attendant is not equivalent to a Clinical officer; and c) relationship between staffing availability and needs for recurrent, non-salary funding. The WB has further proposed a performance criterion which uses an index of attendances per health worker. Similar issues apply here. The expectation is that such modifications this might ultimately result in a better allocation formula, the principles of which could be incorporated into the developing Local Government Grant System as a service delivery component, with possible application across sectors. This review is therefore expected to feed into this process.

In addition, both the Local Government Reform Programme and the Public Financial Management Reform Programme include activities to review sectoral allocation formulae. While their timeframe is somewhat later, possibly due to the desire to incorporate 2012 Census population data, this assignment is expected to provide useful input to the broader exercise, and to improve health sector allocations in the interim period. It will be critical, however, to involve Ministry of Finance (MOF), Prime Minister’s

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<sup>84</sup> J. Kutzin (2001). A descriptive framework for country-level analysis of health care financing arrangements. Health Policy 56 (June 2001): pp171-204

<sup>85</sup> Kiswahili acronym for the Primary Health Services Development Plan 2007-2017.

Office – Regional Administration and Local Government (PMO-RALG) and MOHSW in the process in order to ensure synergies.

### 1.0 Objectives of the consultancy

The objective of the consultancy is to undertake a thorough review both of the design and use of different resource allocation formulae within the health sector,<sup>86</sup> in the context of broader government policy, and to recommend changes where necessary.

The specific objectives of the assignment are as follow:

- To review current government policy and plans in relation to geographic resource allocation and the promotion of equity<sup>87</sup> – both at council and regional level
- To assess the availability and suitability of different possible data sources as measures of local health expenditure needs and/or for the revision of the health sector’s allocation formulae
- To assess the current resource allocation patterns in relation to the current formulae
- To identify and assess ways of further promoting equity in the allocation process, in particular to provide recommendations on the proposed amendments in the World Bank project
- To consider the appropriateness of an enhanced role for performance-based financing through (or alongside) the allocation formulae, and to assess whether this is compatible with the equity objective
- To review, update and/or potentially remove the following factors currently used in the formulae - population estimates, poverty, disease burden and mileage - and to assess the need, appropriateness, and reliability of other potential factors
- To model the impact of different factors which might be used in the allocation formula, by comparing the amounts allocated using the current formula (as updated) to the amounts that would be allocated using these other factors

### 3.0 Scope of the assignment

The following section lays out in detail what is expected from the consultants as part of this assignment:

- **Literature review:** brief review of existing literature in this area, both international and Tanzanian, in order to provide an update on current thinking
- **Desk review and analysis:** The consultant will review the design, use and impact of existing resource allocation formulae in the sector, specifically those of the Health Basket Fund Local Government Authorities grant, Government of Tanzania block grant for Other Charges, and

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<sup>86</sup> For the purposes of this assignment, these are the formulae for: Health Basket Fund (HBF); The Government of Tanzania allocation for Other Charges (OC); Health Sector Development Grant; medicines; and Regional Health Management Team (RHMT) allocations from the HBF. The HIV&AIDS allocation formula uses many of the same elements but does not fall under MOHSW. It is intended that findings would be shared with TACAIDS and other stakeholders.

<sup>87</sup> Equity is defined in the HSSP III as “a fair distribution of services, whereby all citizens enjoy similar rights of access, independent of income, gender, religion, geographic location etc”, although other definitions may be discussed as part of this assignment. HSSP III refers explicitly both to geographic equity for underserved areas, and equity for vulnerable population groups (HSSP III, p47).

Medicines, together with the formula used for capital investment under MMAM.<sup>88</sup> The formula for allocation of RHMT resources will also be reviewed.

The allocation of local Personnel Emoluments resources within the health sector will also be analyzed. As noted in the previous section, the current factors used in the allocation formula will be updated to the extent possible, and potential factors which could be added to the formula would be analyzed and the data for these factors would be collected if it is determined that the factor could potentially be included. Further, a number of variations to the current allocation formula including the identified factors would be developed, and the impact of including these factors or making other changes to the current formula (such as changing the weightings of the current factors), would be modeled. The factors to be included and the formulae to be modeled would be agreed with the Working Group. The modeling (in Excel) would compare the allocation using updated data and the current formula to the allocation using the agreed options.

- **Field visits and interviews:** A limited number of field visits will be required in order to allow for discussion with LGA (and possibly regional) officials on their perceptions of the formula, both in terms of design and its implementation, and to get their inputs on how it might better reflect differing service needs and costs. It will also be necessary to meet with relevant persons in PMO-RALG headquarters, and other stakeholders.

- **Recommendations:** To recommend changes in line with broader government fiscal decentralization, pay and incentives policies, and developments within the sector

#### 4.0 Expected output /deliverables (reports required)

The assignment is expected to result in the following deliverables:

- A written report of not more than 40 pages, providing:
  - o A review of the design and implementation of the current formulae in use in the health sector
  - o A summary of relevant contextual factors to be taken into account by MOHSW in any formulae revision
  - o Recommendations on the immediate way forward (ie for FY 2013/14 and subsequent MTEF period)
- A summary Powerpoint presentation of key findings and recommendations

#### 5.0 Timing of the assignment

The intention is to be able to apply any proposed changes to the formula – at least for the Health Basket Fund – for FY 2013/14. In order for changes to be captured in the updated planning guidelines, the assignment needs to be completed by early December 2012. A start date in October 2012 is preferred, though the MOHSW will hold its Joint Annual Health Sector Review that month 2012 which may limit Task Team availability.

#### 6.0 Duration of the assignment

It is expected that the assignment will be undertaken by a team including at least one national consultant, and that it will take not less than 30 person days. The consultant team is expected to work

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<sup>88</sup> Although HSSP III indicates that “In the programme of expansion of health facilities priority will be given to the most remote and underserved areas” (p47), in practice the MMAM/HSDG formula allocates to all councils in the same manner as for OC, ie with relatively little targeting.

closely with a Task Team established under the Health Financing Technical Working Group, which involves key stakeholders both within and outside the Ministry of Health & Social Welfare, notably PMO-RALG and MOF.

#### 7.0 Qualifications required

The following qualifications and competencies are required of the consultant team:

- Higher degree in health economics, health policy, or public finance
- Experience of previous work in this specific area
- Familiarity with the Tanzanian public finance and fiscal decentralization context
- Proficiency in written and spoken English, and in report-writing and presentations
- Experience with modeling in Excel
- Familiarity with Tanzanian health sector resource allocation would be a distinct advantage

#### 8.0 Budget

The budget assigned for this consultancy will cover fees, international travel and per diem costs in Tanzania, plus costs of any (limited) fieldwork by the team. Prospective consultant teams are expected to submit a financial proposal for the assignment. A workshop to review the draft outputs will be separately funded.

#### 9.0 Key documents

- Documentation from initial development of the health sector resource allocation formula(e)
- MOHSW concept note on review of resource allocation formulae
- Health Sector Public Expenditure Reviews for FY 2009/10, FY 2010/11
- World Bank chapter on health sector public expenditure 2012
- PFMRP strategy and M&E framework
- Relevant LGRP documents pertaining to the allocation formula
- WB Basic Health Services Project Appraisal Document
- WB proposals for equity and performance adjustments (powerpoint presentations and Excel sheet)
- Comprehensive Council Health Plan guidelines 2011
- Others that may be identified

## ANNEX B

### UNIVERSAL PRINCIPLES AND PRACTICES OF DESIGNING AN INTERGOVERNMENTAL TRANSFER SCHEME

#### Universal Principles

A large number of approaches can be followed for the design of a transfer scheme and in the apportionment of the available funds among subnational governments. The manner in which a transfer program is structured and the method used to divide its funds among eligible subnational governments is ultimately a political choice, but the design of the mechanism should be guided by sound economic principles. Thus, independently of its final structure, international experience has given rise to a number of universal principles and practices that all transfer formulas should obey.<sup>89</sup>

***Providing revenue adequacy.*** A transfer formula should provide a source of adequate resources to local governments to achieve its policy objective.

***Preserving budget autonomy.*** As much as possible, a transfer system should preserve budget autonomy at the subnational level. While there are sound policy arguments for conditional (targeted) transfers, general-purpose transfers and equalization funding should be lump-sum in nature and unconditional. After all, the benefits from decentralization arise due to increased flexibility and spending discretion at the subnational level.

***Enhancing equity and fairness.*** The transfer mechanism should support a fair allocation of resources. For instance, an equalization transfer should provide more resources to districts with lower tax capacity and greater fiscal needs. While fairness is a subjective social concept, transfer systems that provide disproportionately more resources to wealthier local governments are often considered “unfair.”

***Stability.*** Transfers should be provided in a predictable manner in a dynamic sense. The formula should be stable over a period of years to promote revenue predictability and overall budget certainty.

***Simplicity and transparency.*** Transfer formulas should be, to the extent possible, simple and transparent. An important way to keep transfer programs simple is to limit their objectives and to only pursue one policy objective with each transfer program. The formula should also be understandable to all stakeholders, in particular regional officials and legislators, and not be subject to political manipulation or negotiation in any of its aspects.

***Incentive compatibility.*** The transfer system should not create negative incentives for revenue mobilization by subnational governments, neither should they induce inefficient expenditure choices. For example, negative incentives to revenue mobilization would be created if the amount of equalization transfers were reduced every time a subnational government made a greater effort to increase their own revenues. Likewise, in order to avoid these negative incentives it is critically important that equalization formulas do not try to fill the gap between actual revenues and expenditures but instead fiscal capacity and expenditure needs; these two concepts are discussed in greater detail in Section 3.2.5. A similar negative incentive arises when central authorities provide

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<sup>89</sup> These principles have been iterated by many in the literature and have been followed countries around the world, including in Tanzania. This annex draws heavily on GSU (2003).



“deficit grants” to cover local government deficits at the end of the fiscal year. This gives local governments an incentive to incur budget deficits.

***Focus on demand (clients or outputs) rather than supply (inputs and infrastructure).*** The best measure of a local government’s needs is to focus on the number of potential clients for a local public service. For instance, arguably the most basic measure of a local government’s expenditure needs for education is the number of school-aged children in a district. Unfortunately, a relatively common (but undesirable) practice in the choice of allocation factors is the focus on productive inputs (such as the number of teachers in a district) or the available physical infrastructure (such as the number of hospital beds or school buildings) as a measure of the fiscal “need” for a local government. For instance, many developing countries allocate a portion, if not all of their education transfers based on the number of school buildings and/or the number of teachers in each district. However, the number of school building or teachers in a local government area is typically a very poor measure of the educational needs of a local government. Wealthier local governments, with greater resources available for education, would likely have more school buildings and would thus receive more generous compensation under such as scheme, while poorer local governments (that could not afford to erect school buildings) would receive fewer resources. Similarly, teachers and other professionals have a tendency to live and work in urban areas. Thus reliance in a transfer formula on the number of inputs such teachers, doctors, or infrastructure, as opposed to focusing on the number of clients or outputs, would cause historical disparities to be perpetuated in time.

In addition, the use of “inputs” such as school buildings and hospital beds as allocation factors could cause inefficiency by providing an incentive that could distort the optimal allocation of resources. For instance, the inclusion of school buildings as an allocation factor would give the local Finance Director a reason to press the District Education Officer to build a larger number of school buildings in order to increase allocations from the grant system. This would be especially harmful if resources could be better spent hiring additional (or better trained) teachers, or purchasing more text books. Similar negative inducements to expenditure choices are present, for example, if the amount to be received from the intergovernmental transfers is increased when local governments hire more employees or hoard excess physical capacity in the form of half empty hospitals or idle school rooms. Therefore, as a rule, one should avoid using measures of physical capacity or inputs (such as the number of teachers, the number of hospital beds, the number of schools, and so on) as allocation factors and focus instead on measures of the number of “clients” or citizens with a certain need.

***Avoid “equal shares” as a major allocation factor.*** An important concern in the design of transfer schemes is the common use of the “equality principle” or “equal shares” as an allocation factor. Use of the “equality principle” or “equal shares” as a factor in the distribution formula (so that each local government gets the same amount, regardless of its population) raises concerns about incentives, efficiency and basic fairness:

- First, the use of equality as a factor in the allocation formula raises a question of basic fairness. If the equality principal would be used as an allocation factor, regions with fewer residents would receive much larger transfers when expressed in per capita terms. This violates a basic concept of fairness in a democratic system of governance.
- Second, distributing funds based on equality gives politicians a significant fiscal incentive to create new, small local governments that in turn receive a significant fiscal benefit. This incentive may prove politically hard to resist, and often results in local governments that are too small to benefit from scale economies.

- Third, the reliance on the equality principle in the distribution formula would cause substantial efficiency losses by isolating small local governments from the effects of scale economies. Resources would be spent more efficiently if smaller districts would be forced to consolidate to instead to form new jurisdictions above the minimum efficient scale.

***Avoid sudden large changes.*** During the introduction of the new transfer mechanism, the transfer system should avoid sudden large changes in funding for local governments. Changes in the existing formula should strive to hold local government “harmless” during the transition to a new allocation mechanism.

#### Data Concerns and Measurement Issues

Variables that could potentially be included as allocation factors and that are often relied upon in transfer formulas around the world include:

- Population;
- School-aged population (i.e., population aged 6-14);
- The number of persons below the poverty line;
- Infant mortality count;
- Land area, acreage of arable land.

The basic transfer mechanism can also be used with more complex allocation factors. For instance, one could use as an allocation factor:

- An index of expenditure needs
- Variables that measure the lack of local fiscal capacity
- Measures of the “fiscal gap” quantifying the difference between local expenditure needs and local fiscal capacity.

Ultimately, the selection of allocation factors that are used as part of transfer mechanisms is a policy-driven choice. However, within the context of the “sound principles” set out earlier, there are a number of broad guidelines that should be followed in the selection of variables as allocation factors. For instance, it is a generally accepted principle that distribution formulas should be based on a relatively limited number of factors. Inclusion of too many variables reduces the transparency of the allocation scheme. It is also more costly and difficult to update a larger number of variables on a regular basis, and the use of many variables introduces more opportunities for political manipulation. Therefore a balance needs to be struck between the need for simplicity and transparency, and the need to find factors that equitably reflect the true fiscal need of local governments.

It is important to make sure that variables used as factors in the distribution formula have a number of desirable characteristics. Variables used as allocation factors should:

- Accurately reflect the specific characteristics they seek to represent
- Be statistically sound.
- Be regularly updated in the future (preferably every year or every two years).
- Come from an independent source respected by all stakeholders

- Be drawn from a source that cannot be manipulated by the central government or one or more local governments.
- Reflect needs or demands for public goods (for example, the number of clients) rather than outputs such as infrastructure. Problems occur when using physical output measures as allocation factors, as discussed earlier

### Defining the basic allocation mechanism

In the formulation of the recurrent grant system (in 2003), it was recommended that the Government of Tanzania adopt a basic transfer mechanism that allocates resources among local governments in proportion to a limited number of allocation factors, where the importance of each allocation factor would be determined by its relative weight.

The formula may be included in the relevant legislative framework as a verbal description, such as “Central government funding to local governments is divided in the following fashion: x percent of resources are allocated among local government authorities in proportion to their population, while y percent of resources are allocated among local government authorities in proportion to their land area.” Alternatively, the formula may be expressed mathematically as:

$$\begin{aligned} \text{Transfer for Local Government} = & (x_1 / X_1) * a_1 F \\ & + (x_2 / X_2) * a_2 F \\ & + \dots \\ & + (x_n / X_n) * a_n F \end{aligned}$$

where:

- F is the pool of funds to be allocated among all local governments;
- $a_i$  signifies the relative weight of each factor so that  $a_1 + a_2 + \dots + a_n = 1$ ; and
- $x / X$  represents the share of each factor that is present in the local government area.

### On the number of allocation factors used

The basic mechanism suggests that only a limited number of allocation factors should be used for allocating resources in each sector. From a transfer design point of view, a formula should carefully balance the need for transparency -which demands the use of fewer factors- with the need for accuracy -which demands the use a greater number of factors.

The type and number of allocation factors used is largely driven by the policy environment. Several factors that play a role in this determination:

- **Availability of good data.** A very limited number of variables are available at the district level in Tanzania, and of the available data, only a limited number are potentially “good” allocation factors (in accordance with the desirable characteristics needed, as listed in Box 4.2).<sup>90</sup> It

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<sup>90</sup> There is a common misconception that any data that is available at the regional level was computed using district-level data, and that it should therefore be possible to break down the data at the district level. While this is

appears that even key stakeholders over-estimate the availability of variables which are available for all local government authorities. In reality, it is proving a challenge even to find basic district-level data for such key variables as land area. The general unavailability of district-level data in Tanzania naturally limits the number of variables that can be included in the formula. Inclusion of inadequate measures or poor proxies of a variable into a formula would inadvertently reduce the accuracy of the formula, and would thus be counter-productive.

- **Reporting and monitoring systems.** Many district-level variables that are currently available are figures that are reported by local government officers. For instance, district statistical reports may contain information about the incidence of poverty at the local level.<sup>91</sup> However, if the size of transfers is tied to such self-reported data, local governments would have an incentive to manipulate such figures, unless the central government is able to adequately monitor, audit and verify the computation of such figures. Thus, the central government's ability to monitor and verify locally reported statistics may impact the number of allocation factors available for inclusion in a formula.
- **Capacity.** The complexity of the formula that can be efficiently used depends on the capacity of local governments and civil society to understand the allocation formula. After all, if the capacity of local governments and civil society to understand a formula is relatively high, then a more complex a formula can be introduced without losing the benefits of transparency and accountability. However, if the formula becomes too complex for local stakeholders to understand, then it will be impossible for communities to understand how their local governments are financed, which in turn will make it impossible for them to hold their own local governments accountable. In this regard, we note that local governments and civil society in Tanzania have a very limited capacity to understand more complex formulas.

Overall, given the limitations of the current policy environment in Tanzania, it was recommended to limit the number of allocation factors used within each sectoral formula between one and four variables.

#### On the types of allocation factors to be used

GSU (2003) recommended the introduction of simple, straightforward sectoral allocation formulas, which rely on a few factors that are crucial in determining the demand and cost of service provision in each respective sector. This leaves a wide range of possible allocation factors to be considered for each sector, to be determined in discussion with sectoral experts and local government officials. While Section 3.2 of this report presents a general discussion of different measures of fiscal needs, fiscal capacity and fiscal effort, we build on this discussion here to address a number of specific issues regarding possible allocation factors in Tanzania. The specific options and recommendations for each sectoral formula are discussed in the subsequent sections.

- **Population.** Population is an important (if not the most important) factor in most allocation formulas around the world. The importance of the population-based component in transfer formulas reflects the assumption that local governments' expenditure needs generally grow

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true for census-type data, this is not the case for survey-sample data. The size of the samples at the district level may simply be too small to produce a statistically reliable variable.

<sup>91</sup> In addition, many locally reported variables may not be suitable for inclusion in a formula for other reasons either. For instance, the number of school buildings as reported by the DEO would not be a good allocation factor since it reflects the supply of primary education rather than the demand for education.

proportionally or largely proportionally with the size of their constituencies. Similarly, other demographic measures (such as the size of the population under age five, or the size of the school-aged population) may be used as allocation factors as well.

- **Land area.** In order to assure equitable access to local government services, the necessity of financial resources generally increases as a district's land area increases:
  - First, less densely populated areas typically require higher levels of government service and create higher costs because it is more costly to serve a population that is more spread out. In order to assure reasonable access to public facilities such as schools and health clinics, a larger number of facilities need to be constructed, and the cost of operating these facilities tends to be higher per client since student-teacher ratios and similar measures of usage of tend to be lower in less densely populated areas.
  - Second, the cost of providing a standard unit of a government service may be higher in less densely populated and more remote areas. It tends to be more costly to construct infrastructure in more remote areas due to higher construction costs. Similarly, it tends to be more costly to provide public services. Transportation costs will be higher, and professional public servants may need to be awarded bonuses to serve in more remote parts of a country.

In accordance with these arguments, the incidence analysis conducted by GSU (2003) and Boex (2003) uncovered that districts in Tanzania with lower population densities (i.e., those with greater land area per person) received slightly larger per capita allocations under the current allocation mechanism. While data on the land area of local governments is typically easily available in most countries, the relevant data is proving to be not as easily available for Tanzania as elsewhere. Care should be taken to construct an accurate database of land area that properly breaks out urban districts from rural districts and takes into account recently formed districts.

While it is important to recognize that extremely rural local governments face higher cost structures, inclusion of land area as a factor might unintentionally overcompensate for this effect: rural Liwale District has a population density (land area per person) of 2 people per square kilometer, only one-thousandth of the population density of the municipalities in Dar es Salaam region. While both examples are extreme outliers (population density averages at about 38 persons per square kilometer in Tanzania), it brings home the point that too great of a reliance on this factor can have cause disproportionate fluctuations in per capita allocations.<sup>92</sup>

- **The "equality" principle.** One of the most common and troublesome elements in designing allocation formulas is the common use of the "equality principle" or "equal shares" as an allocation factor, in which each local government gets the same amount of funding, regardless of its population. In fact, equality is an important component in the Road Levy Fund in Tanzania,

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<sup>92</sup> There were seven districts in 2003 with a population density below 10 persons per square kilometer, which would receive disproportionately large funding gains (three or more times larger than an average district) from inclusion of land area into the formula with a relative weight of 0.2. If these outliers cause politically unacceptable per capita variations in resource allocations, the land area included in the formula for these outliers could be adjusted so as to reflect a minimum population density of, say, 10 per square kilometer. This would greatly reduce the per capita variations caused by the inclusion of land area into the allocation formula to less than double the average per capita amount.

and fixed costs are an important component of the recommendations provided in the PWC report on “A System for the Financing of Local Government” (September 2000).

The use of “equality” or “equal shares” as a factor in a distribution formula raises concerns about incentives, efficiency and basic fairness, especially if the component is a dominant factor in the allocation formula. Proponents of inclusion of an “equal shares” component in an allocation formula argue that scale economies exist in the provision of public services, so that smaller jurisdictions will need more funds in order to provide the same level of public services. It is a matter of debate whether this argument is in fact valid, as the “minimum efficient scale” for most government services provided by local governments is typically quite low (see Box 4.3). To the extent that there are districts in Tanzania that are so small that they fall below the minimum efficient scale, it is questionable whether such outliers should be compensated through a fixed grant amount, or whether a more appropriate policy response would be to (encourage them to) merge with a neighboring district. As we consider this issue, we recognize that it may be impossible to completely exclude the factor from the formula-based system due to the heavy reliance on the “equal shares” concept in the current allocation approach.

The equity concern in Tanzania is illustrated by the following comparison: Every one million Shillings that is allocated to each local government as a fixed amount (or equal share), Kinondoni Municipality will have to share among 1.2 million residents, allowing it to provide only TSh 0.80 of services per resident. At the same time, a fixed amount of TSh 1,000,000 amount translate in TSh 22 per resident for Pangani District with its population of roughly 44,000 (which is a 25-fold increase over Kinondoni).

Inclusion of a large lump sum (fixed amount) or equal shares factor in an allocation formula would also result in a very dogmatic approach to local government administration, with local governments hiring certain officials simply because “local governments should have a ....” (a bee-keeping official, for instance), rather than from a prioritization of local needs. In addition, the fixed amount’s nature as an “endowment” fails to provide smaller local government’s with an incentive to find creative ways around scale economies through out-sourcing or other techniques.

- **Poverty.** Current incidence patterns discussed in Section 2 of this study reveal that local government resources in Tanzania are generally allocated in a slightly pro-poor manner. Indeed, inclusion of poverty levels as an allocation factor would be appropriate because poor households typically rely more on publicly provided services (such as public health care), while at the same time the provision of local government services to poor residents can also be more costly (for instance, assuring school attendance of children from poor households is more costly). A major problem in this regard in Tanzania is the absence of good district-level poverty data. The most recent source of poverty data is the Household Expenditure Survey (2002), but the survey only reports poverty incidence at the regional level, and not at the district level. The reported confidence intervals for the regional samples suggest that decomposition at the district level would result in unacceptably small district samples, which would be a statistically unsound approach. During the technical workshop on intergovernmental grants held by LGRP in September 2002, a suggestion was made to use the regional poverty rate as an indication for the poverty level for all districts within a region. While this measure would clearly not be able to account for intra-regional variations in poverty, this measure would at least be able to capture the significant regional variations in poverty due to regional variations in economic activity that

are, among others, due to regional climatic differences and differences in regional agricultural potential. There was agreement among the workshop participants that in the absence of a district-level poverty measure, the approach of relying on a regional poverty measures was reasonable and acceptable.

- ***Fiscal capacity equalization and stimulation of fiscal effort.*** While the current legislative and regulatory framework authorizes the introduction of an equalization grant, there are many obstacles to actually introducing such a grant scheme. Most importantly, the current local government allocation mechanism is highly oriented towards conditional grants for national priorities, and in fact even lacks a window for the allocation of unconditional grants. As such, these factors only become relevant in the medium term with the possible introduction of a general purpose (unconditional) local government fund.
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- ***Regional cost variations.*** It is widely recognized that there are cost variation across Tanzania that make it more costly to provide local public services in different parts of the country. These variations particularly effect non-labor items which have to be shipped from major cities, such as school books, medicines, or certain construction materials. One proxy for such regional cost variations which is commonly suggested is the distance from the capital city (or in the case of Tanzania, the distance from Dar es Salaam). However, the distance from Dar es Salaam would actually not be a very a good measure of regional cost variations, as this measure fails to take into account the fact that what matters is not just sheer distance but accessibility; there are in fact rural district which may be geographically located relatively close to Dar es Salaam but which have poor access to Dar es Salaam due to poor transportation infrastructure. A better measure of the cost variations faced by local governments across the national territory would more directly rely on the actual variations in the cost of local government service provision. Although no such measure is available at the local level in Tanzania, PWC (2000) proposes to use regional diesel fuel prices as an indicator for regional price fluctuations. Given the fact that regional variations in the price of diesel fuel are caused by higher shipping costs in less accessible locations (which also causes increases in the cost of local service delivery), inclusion of a regional price index based on diesel fuel prices would be an appropriate mechanism to compensate local governments for the fact that they face a higher cost structure.<sup>93</sup>
- ***The cost of maintaining current service levels.*** One common concern in the transition towards a formula-based system of intergovernmental grants is whether the formula-based allocation will suffice to operate existing infrastructure and maintain existing service levels. Policy makers may seek to assure the continued operation of local government at current service levels by

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<sup>93</sup> This approach would not be sound if regional variations in the price of diesel fuel would be determined by government regulation or if the price of diesel fuel would be set by a (government) monopoly, as is the case in some African countries.

supporting an input-based formula approach which allocates resources based on the level of existing infrastructure and existing levels of public local employees. Such a supply-focused approach to intergovernmental grants should be considered a “bad” practice for a number of reasons. This concern is better addressed by phasing in the introduction of a new formula-based approach over time, or by holding local governments (partially) harmless for potential declines in resource availability.