



## Embedding value-for-money in practice: A case study of a health pooled fund programme implemented in conflict-affected South Sudan

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### ARTICLE INFO

#### Keywords:

Value for money  
Economic evaluation  
Health  
Conflict  
South Sudan

### ABSTRACT

In recent times, there has been an increasing drive to demonstrate value for money (VfM) for investments made in public health globally. However, there is paucity of information on practical insights and best practices that have helped implementing organisations to successfully embed VfM in practice for programming and evaluation. In this article, we discuss strengths and weaknesses of approaches that been used and insights on best practices to manage for, demonstrate, and compare VfM, using a health pooled fund programme implemented in conflict-affected South Sudan as case study supported by evidence reported in the literature while critiquing adequacy of the available approaches in this setting. An expanded and iterative process framework to guide VfM embedding for health programming and evaluation is then proposed. In doing so, this article provides a very relevant one-stop source for critical insight into how to embed VfM in practice. Uptake and scale-up of the proposed framework can be essential in improving VfM and aid effectiveness which will ultimately contribute to progress towards achieving the Sustainable Development Goals by 2030.

### 1. Introduction

From 1990 to 2015, a total of US\$502.7 billion of Development Assistance for Health (DAH) was disbursed to recipient countries. In 2015 alone, \$36.4 billion was provided, a major increase from 1990, in which DAH amounted to US\$7.2 billion, and 2000, when DAH was US \$11.7 billion (Dieleman et al., 2016). In the same period, there was over 250% increment in DAH paid to conflict-affected countries (Dieleman et al., 2016; Patel et al., 2016). More recently, several donors including United Kingdom (UK) Aid, the World Bank, Swedish International Development Cooperation Agency, The Global Fund to Fight AIDS, Tuberculosis and Malaria etc. have been particular about maximising the returns on their donations (Banke-Thomas, Madaj, Ameh, & van den Broek, 2015). This drive to demonstrate the value-for-money (VfM) on aid has exacerbated in the post-2015 era of the Sustainable Development Goals (SDGs) in which the focus is on “doing more with less” (Banke-Thomas et al., 2015; Jackson, 2012). In maximising the use of the disbursed funds, donor agencies have been encouraging the incorporation of VfM principles and practices which focus not only on reducing inefficiencies in how aid is managed, but also on achieving better results from programme implementation (DFID, 2011).

As a concept, VfM is generally viewed as referring to something worth the money spent on it. However, the concept has often either been defined variably, so meaning different things to different people, or narrowly, defined as relating simply to cost (Banke-Thomas, Madaj, Kumar, Ameh, & van den Broek, 2017). The Organisation for Economic Co-operation and Development (OECD) defines VfM as “the optimum combination of whole-life cost and quality (or fitness for purpose) to meet the user’s requirement. It can be assessed using the criteria of economy, efficiency and effectiveness” (Jackson, 2012). New Zealand Aid (NZAID) defines VfM as “achieving the best possible development outcomes over the life of an activity relative to the total cost of managing and resourcing that activity and ensuring that resources are used effectively, economically, and without waste” (NZAID, 2011). VfM has also been described as “the optimal use of resources to achieve the intended outcomes” (HM Treasury, 2004). For the United Kingdom (UK) Department for International Development (DFID), VfM “is the best use of resources to achieve intended sustainable outcomes and impact” (DFID, 2011). The “Programme Partnership Arrangements” Learning Partnership, which is an initiative of DFID and non-governmental organisations (NGOs) in receipt of strategic funding defines VfM as “a fully integrated, value-creating, impact enhancing practice that is

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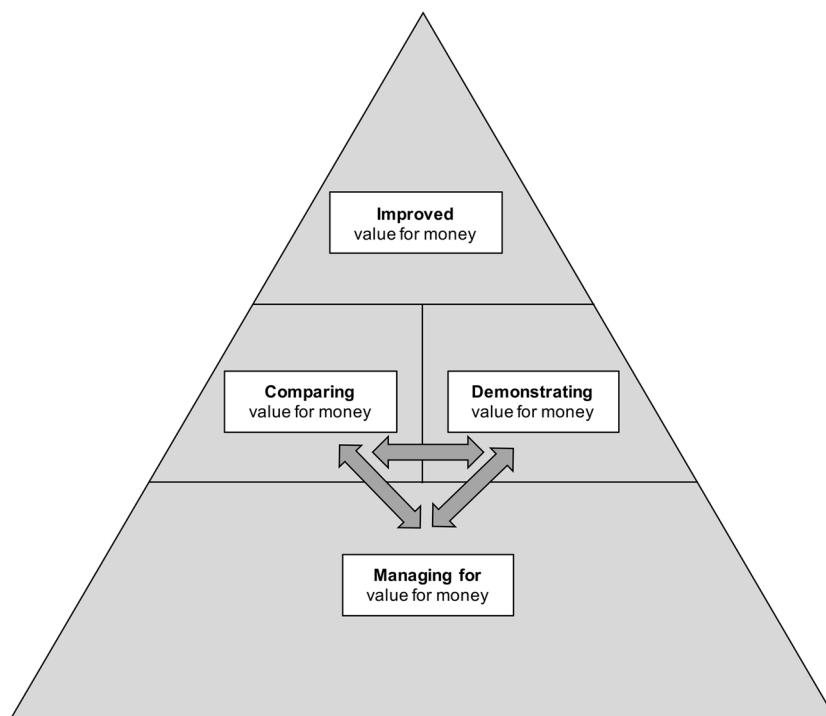


Fig. 1. Bond for International Development’s framework for VfM engagement.

informed by various sources and stakeholders, which supports ongoing organisational and programmatic improvements” (PPA Learning Partnership, 2016). Altogether, the consensus is that VfM is an approach that guarantees an explicit commitment to ensuring the best results possible are obtained from the money spent.

In 2012, Bond for International Development proposed a framework to help non-governmental organisations (NGOs) improve their VfM practice. This framework identified three different categories of approaches: those linked to (a) managing for; those for (b) comparing and those designed for (c) demonstrating VfM [Fig. 1] (Bond for International Development, 2012). Specifically, for demonstrating VfM, DFID has a five-component framework for holistic VfM assessments, which in addition to the previously known components (economy, effectiveness, efficiency, and cost-effectiveness) now incorporates equity as a key component (4E’s and CE) [Fig. 2] (ICAI, 2018).

Despite the investments in public health and the plethora of theoretical guidance on VfM, there is paucity of information on practical insights and best practices that have helped implementing organisations

in successfully embedding VfM in practice. In this article, we use the Phase II of the Health Pooled Fund (HPF2) programme in South Sudan as a case study (Crown Agents, 2018; Integrity, 2018) to highlight some best practices that have aided managing for, demonstrating, and comparing VfM, all contributing to improved VfM practice. In doing this, we also critique the applicability and adequacy of the various VfM tools and approaches in other low- and middle-income countries (LMICs), especially those in conflict-affected countries.

## 2. Case study - Health Pooled Fund programme, South Sudan

HPF2 was a successor programme to the Health Pooled Fund (HPF1), a three-and-a-half-year programme which provided essential health care services across six of South Sudan’s ten states and health systems strengthening at national, state, county, facility and community level. The HPF2 was a 24-month programme, running from 16 April 2016 to 15 April 2018 (with an extension until 16 October 2018). Compared to the Phase 1 of the programme, it had an expanded

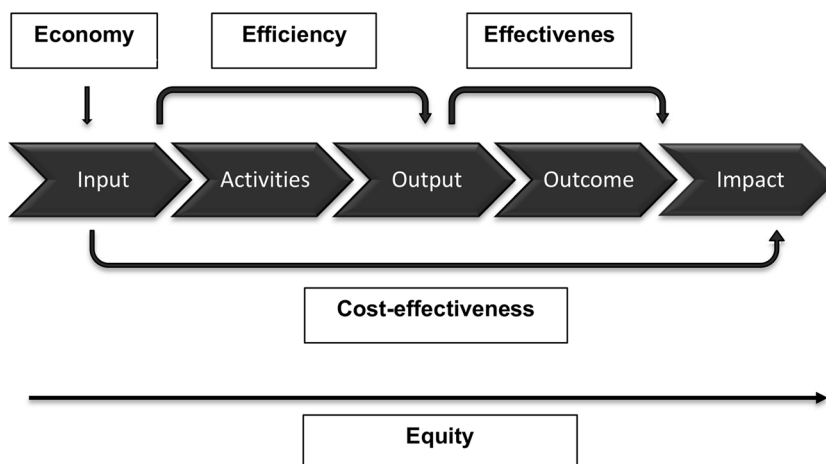


Fig. 2. 4Es + CE framework for Value for Money.

geographical coverage over eight States (Central Equatoria, Western Equatoria, Eastern Equatoria, Lakes, Warrap, Unity, Western Bahr el Ghazal and Northern Bahr el Ghazal) as the previously separate United States Agency for International Development (USAID) programmes were incorporated into the pooled fund.

To understand the programme, it will be helpful first to understand some of the key political, institutional, organisational and socio-economic background that framed the implementation of the programme at inception. In 2005, as part of a comprehensive peace agreement, the Sudan civil war between the north and south of the then Sudan, which was borne out of a feeling of deprivation of people in the south, ended with the creation of a semi-autonomous region of southern Sudan (Stewart, 2002; World Bank, 2019a). After secession from Sudan was finalised in 2011, the Republic of South Sudan – the world’s newest nation and Africa’s 55th country – was created. After its creation, civil war broke out in 2013, which temporarily ended with a peace agreement in 2015 (World Bank, 2019a). However, renewed fighting started in 2016 with an estimated nearly four hundred thousand excess deaths since 2013 and more than 4.3 million people displaced both internally and to neighbouring countries (Checchi, Testa, Warsame, Quach, & Burns, 2018). The Revitalized Agreement on the Resolution of the Conflict in South Sudan (R-ARCISS) was signed in 2018 (World Bank, 2019a).

South Sudan is among the poorest and least-developed countries in the world. Oil accounts for almost the totality of South Sudan’s exports, constituting around 60% of its gross domestic product (GDP). GDP per capita in 2014 was \$1,111, dropping to less than \$200 in 2017. Expenditures continue to be skewed towards defence accounting for over 70% of the total budget over the past three fiscal years while health and education make up only 6% of total government spending (UNESCO, 2019; World Bank, 2019a).

At 62 deaths per 1000 live births and 789 women per 100,000 live births, respectively, infant and maternal mortality rates in South Sudan are among the highest in the world (Alkema et al., 2016; WHO, 2018). Undeniably, the decades of civil war in Sudan, fought primarily in what is now South Sudan, negatively impacted all aspects of life and welfare of the populace including their health (Bayo et al., 2018; Ouma et al., 2018). Indeed, the situation in the country was not about health system strengthening but rather health system building. As such, post the war, building health services became a priority for the country and the development community. To achieve this, it was essential to ensure that health facilities were functional, health workers were trained, and remunerated, and life-saving medicines procured and distributed to health facilities across the country, including the most inaccessible regions.

HPF2 was commissioned to focus on the provision of essential maternal health and nutrition services and the protection of the most vulnerable (particularly children, women and girls). The key Government of the Republic of South Sudan (GRSS) document that shaped the objectives of the HPF was the Health Sector Development Plan and the Basic Package of Health and Nutrition Services (BPHNS). Under HPF2, the programme was aligned to the Health Sector Policy 2016-24 and Strategic Plan 2016-20, both of which focus on the six building blocks of health and the SDGs.

HPF2 was a multi-donor funding mechanism, currently comprising of DFID (the lead donor), Canada, European Union (EU), Sweden and USAID. It had a Steering Committee chaired by the GRSS’s Ministry of Health (MoH). Day to day management was provided by a contracted fund manager through a consortium led by Crown Agents. Implementation was carried out in 23 smaller geographical areas, named ‘lots’, in eight out of ten former states, by contracted non-governmental organisations (NGOs) – Implementing Partners (IPs) - supporting the existing over 800 government-owned health facilities [Fig. 3]. HPF2 responded to the huge health needs of South Sudan, exacerbated by many years of conflict and economic crisis, by supporting the implementation of the government’s policies, strategies and

plans. HPF2 maintained a flexible and agile approach to programme delivery that built on a competent team, a responsive funding mechanism, a strong relationship with the GRSS, and IPs that understood the complexities of delivering health services in communities affected by conflict. The key expected outputs focused heavily on women and children:

- Strengthened health service delivery
- Strengthened health systems
- Community engagement
- Improved nutrition services

With limited funds and yet mammoth issues to address within a fractioned health system, guaranteeing the best use of the available resources, including assuring VfM, was essential for the programme. At the end of Phase II, the programme had made some significant achievements, including more than doubling service utilisation rates for both adults and children under-five and contributing to overall reduction in maternal mortality. It was clear that health facilities would most likely not have been able to function without HPF support.

### 3. Insights on approaches used to embed VfM in practice

#### 3.1. Insights on managing for VfM

Developing a clear strategy and/or framework for managing for VfM, through a reflective process that embraces all stakeholders on the programme as well as all staff of the programme is critical if VfM embedding will be successful. This reflective process allows all stakeholders to better understand what VfM means to the organisation, how the organisation is best positioned to demonstrate its VfM, the role each individual can and will play in the process; and how it benefits or disbenefits the organisation. In a survey done amongst NGOs, half of those surveyed submitted that they had developed some form of policy/guidance document on VfM, consisting of some combination of a VfM strategy, position paper, framework, and/or training materials (PPA Learning Partnership, 2016). On the HPF2 programme, a strategy document was developed which recognised the specific contextual challenges of assessing VfM in such a fragile setting like South Sudan. While this was initially done at the beginning of the programme (Phase I), it became increasingly clear that the strategy needed updating during the Phase II of the programme based on a better understanding of what was required to demonstrate VfM on the programme. From our experience, the time spent a priori on developing the strategy was a good investment as it allowed us to better understand and plan ahead for embedding VfM. However, even before developing the strategy, a VfM feasibility study was conducted to help explore the strengths, weaknesses, opportunities and threats related to embedding VfM on the programme. Key findings from the feasibility study were that at the time, the programme’s theory of change (ToC) did not clearly show the linkages between inputs, outputs, outcomes and impact. As such, there was a need to re-map the ToC leveraging evidence to show the linkages. In addition, the feasibility study showed that the databases were not “VfM compliant” as financial as well as monitoring and evaluation data being collected at the time were not sufficient for a holistic VfM assessment.

While the creation of a strategy guiding VfM embedding is critical, the perception of staff who will implement the strategy and of local partners and governments is arguably even more critical, if the process is to be successful. Particularly for NGOs working in conflict-affected countries, while such organisations believe they are “doing good”, beneficiary populations that they serve, as well as health system staff and local authorities that they work with, sometimes see them as “looking bad” (Dijkzeul & Wakenge, 2010). Such negative perceptions underpinned by lack of trust may mean that other stakeholders see the championing of VfM by an NGO more as an “intrusive monitoring”



Fig. 3. Map of South Sudan showing implementation sites.

process and not as a systems improvement one. Some NGOs have also had to overcome perceptions that VfM is a donor-driven activity and something of an administrative burden to staff (PPA Learning Partnership, 2016; Trémolet et al., 2015). On the HPF2 programme, the focus of the leadership was to show programme staff and IPs that VfM consciousness was indeed beneficial to the organisation itself and its programme implementation and practice. Some authors have submitted that promoting VfM in health programming allows clarification of programme objectives, improves planning, increases openness and transparency, improves programme and financial management and it is an important advocacy tool for aid (Okoli, Ezenduka, Uzochukwu, Okoronkwo, & Onwujekwe, 2014). HPF's senior leadership encouraged buy-in of all programme staff from during programme design, implementation and evaluation by engaging staff. This collaborative approach which involved leveraging inputs all staff with timelines and cross-departmental coordination led by a dedicated VfM consultant helped to change negative perceptions. This ultimately led to a positive attitude towards the task that needed to be achieved – in this case, VfM embedding. Such an attitude has been shown to help NGO teams to be more effective in delivering their goals (Latif & Williams, 2017).

As has been established in the literature, the embedding of VfM is data-driven (Barton, Aibinu, & Oliveros, 2019). The reality, however, is that data is a challenge in many LMICs, more so conflict-affected countries like South Sudan. NGOs working on DFID-funded Water, Sanitation and Hygiene (WASH) programmes in six countries reported challenges in accessing reliable data on actual outcomes of WASH investments, lack of data capturing equity and complexities in multi-donor programmes which used different systems for the different funders (Trémolet et al., 2015). For many health programmes, Health Management Information Systems (HMIS) along with a parallel programme finance system are needed to enable collation of the relevant data for VfM. However, this brings up a key question – Whose responsibility is it to manage and analyse VfM in an organisation if data is required from multiple sources? Finance, monitoring and evaluation or

operational research? Some have suggested that restructuring the organisation around 'centres of practice' can help to align financial as well as monitoring and evaluation data may provide a way forward (PPA Learning Partnership, 2016). This certainly makes sense, as it prevents the relevant departments from working in silos but rather together while they garner communal sharing and learning on the programme's VfM. However, such organisational structure will benefit from strong leadership. Such leadership allows organisations to have the personnel to lead the organisational changes and/or re-orientation required to manage the challenges. In addition, such leadership helps to set the agenda, motivates programme staff and ensures that progress is maintained. From our experience, VfM embedding was easier when there was a clear association between programme output/outcome data and financial information on the cost of intervention for programme implementation. On HPF2, activity-based budgeting (ABB) was institutionalised to help with costing of specific programme activities within the HPF financial reporting systems. Activity specific codes were then developed to relate specific programme costs, reported within the programme's finance database, with its associated programme outputs and outcomes, reported in the programme's monitoring and evaluation database.

Furthermore, on data, it became increasingly clear that more information beyond what had been reported in the log-frame was required for a comprehensive VfM assessment (Banke-Thomas, Madaj et al., 2017). Many of such data were either not captured routinely or their quality when collected was questionable. Senior leadership on the HPF2 programme led for the redesign of data collection tools to capture the needed additional data, which were mostly qualitative, but which helped to provide the essential contextual information required to make sounder VfM judgement. Engaging staff, including those in the field helped to strengthen the data collection process and improved data quality. This was supplemented by training of staff on best practices for VfM data collection and for relevant staff, analysis.



### 3.2. Insights on demonstrating VfM

As highlighted already, a holistic demonstration of VfM will reflect all five components of the 4E's and CE framework and provide contextual information to support VfM judgement [Fig. 2].

Economy is assessed using a detailed cost analysis (Drummond, Sculpher, Torrance, O'Brien, & Stoddart, 2005). Typically, the input for such analysis will include all the costs that were incurred on activities that led to specific outputs. Such costs are easier to demonstrate on a project; but HPF2 was a programme, which is more complex (Brousselle & Champagne, 2011). More so, the HPF2 was a programme that essentially supported an entire health system, as such, it was an unusually complex programme. Therefore, for its VfM analysis, it was critical to disaggregate its activities to the most basic unit to improve understanding of how the input is related to the outputs. As such, though the principal input for the HPF2 was the fund received, the real focus was on the activities for which the funds received were spent. Economy is not just about the cheapest option but also about purchasing high-quality inputs at best price (DFID, 2011). As such, additional consideration on the quality of the input(s) purchased for programmes need to be detailed in a supportive narrative for economy (Trémolet et al., 2015). To achieve this on HPF2, quality metrics of which are typically reported for items purchased on the programme and used in the HPF procurement process were incorporated in the VfM report.

To generate the costs of the inputs (economy), bottom-up (ingredient) or the top-down (expenditure) approaches can be used for VfM analyses (Walker, 2001). Unlike the top-down approach which breaks down total 'expenditure' into component costs ( $C_{Total} = C_1 + C_2 + C_3$ ), the bottom-up approach builds-up the 'ingredients' to estimate the total cost ( $C_1 + C_2 + C_3 = C_{Total}$ ). Many experts who have conducted costing exercises recommend the bottom-up approach, which utilises micro-costing methods in identifying and valuing each resource required for a specific intervention (Chola et al., 2015; Johns, Baltussen, & Hutubessy, 2003; Saronga et al., 2015). Specifically, for the HPF2 programme, costs data were aggregated by budget items. For example, "personnel", "community awareness" etc. This approach is the traditional form of budgeting. In this form, it was difficult to make any meaningful VfM assessment of the economy or efficiency of the programme as it was not possible to estimate specific cost (input) related to specific activities that have led to the outputs. As such, activity-based budgeting (ABB), which is a method of budgeting in which the activities that incur costs in every functional programme area are recorded, and their relationships are defined and analysed (CGMA, 2011), was used to associate inputs to outputs and outcomes. However, it is worth highlighting that though VfM embedding was more efficient after ABB was fully established on the programme, its implementation was more resource-intensive than the traditional budgeting approach. To complete the assessment of economy, differences between actual expenditure compared with budget were captured along with some explanation for any observed variances.

In terms of assessing the efficiency of an intervention in converting its inputs to outputs, as mentioned above, there has to be clear linkages between the accounting/finance data and monitoring and evaluation data. This is very important to demonstrate how much is being spent in generating specific outputs. So, for example, for the HPF programme, how much is spent total to ensure that one woman receives antenatal care? This would require dividing the total cost of activities relating to focused Ante-Natal Care (fANC) (including training the health care providers (HCPs) on fANC, distribution of long lasting insecticide treated nets, support for ANC diagnostics including screening for gestational diabetes, proteinuria, ketonuria and infection with urine dipsticks and tests for human immune-deficiency virus (HIV), and Syphilis; supply of micronutrients including ferrous sulphate and folic acid, deworming tablets and Sulfadoxine/Pyrimethamine (Intermittent preventive treatment of malaria in pregnancy (IPTp)); as well as paying salary or incentives of health workers and community awareness to

mobilise women to attend facilities for fANC) by the actual number of women who received fANC from HCPs. As HCPs spend time on delivering different care packages, including fANC, delivery and post-natal care, pro-rated salary costs on the average number of days spent on fANC in a month indicates how much has been paid for personnel time specifically for fANC. The number of days can be estimated by conducting surveys of HCPs to get a better sense of the time they spent on their job across the different care packages.

From our experience, provided there are robust data systems and the best practices recommended in the preceding paragraphs are implemented, both economy and efficiency are mostly straightforward to demonstrate for health programmes. However, as described above, in many settings such as South Sudan, data systems are either not sufficiently robust or altogether non-existent as a routine practice. It is therefore imperative to consider primary collection of data or explore triangulation of multiple sources of the limited available data in order to capture data needed to demonstrate economy and efficiency.

The other three key VfM framework components, effectiveness, cost-effectiveness and equity, however, are more challenging. Effectiveness demonstrates the capacity of the intervention to deliver the intended change (Barnett, Barr, Christie, Duff, & Hext, 2010), while cost-effectiveness describes the amount of input required to deliver the intended change (DFID, 2011). To clearly demonstrate effectiveness and cost-effectiveness, it is critical to demonstrate the counterfactual, which refers to what would have occurred without the intervention. This can be done with before-and-after studies, case-control studies, randomised controlled trials (RCTs) or step-wedge designs. The latter two methods are considered the most robust for evaluation of attribution. However, these typically require primary data collection, and in many sub-Saharan African countries, this attracts exorbitant costs and the capacity to collect such data is questionable (Banke-Thomas, Madaj et al., 2017; Banke-Thomas, Madaj, & van den Broek, 2019). When primary effectiveness studies cannot be conducted, some experts have recommended using secondary data repositories or projections such as the Lives Saved Tool (LiST), to assess number of lives saved (Michalow et al., 2015). LiST is a module within a demographic software package called Spectrum, developed by the Institute for International Programs at Johns Hopkins Bloomberg School of Public Health. LiST captures national and sub-national level data on health status, mortality rates, coverage and effectiveness of several interventions (Walker, Tam, & Friberg, 2013). On HPF2, as in many complex programmes, it was difficult to directly track outcomes such as maternal and newborn lives saved (Friberg, Baschieri, & Abbotts, 2017). This was particularly challenging in South Sudan being that it is a fragile setting. Irrespective of this fragility, even as an LMIC, it is known that data registries, which should typically reflect outcomes of care, are not complete, and their quality is questionable in such settings. As defined in the DFID log frame, outputs are "the specific, direct deliverables of the project". However, the outcome identifies "what will change" as well as "who will benefit" (DFID, 2011). Indeed, outcome data should demonstrate the change that the programme is causing within the health system. The HPF2 used LiST and Population Services International (PSI)'s impact calculator to estimate the effect of the interventions on maternal and newborn health outcomes (Garnett, Cousens, Hallett, Steketee, & Walker, 2011; Population Services International, 2017; Walker et al., 2013). The LiST tool estimates lives saved while the PSI impact calculator estimated the number of Disability-Adjusted Life Years (DALYs) averted. Leveraging such models or projections allows some estimation of outcomes derived based on the relatively more reliable output data. However, while using such models do not replicate "actual" magnitude of outcomes derived from the programme implementation, it allowed the best representation of reality when the "actual" outcome data was not available. Cost-effectiveness estimates simply involved comparing the direct cost of programme implementation (estimated under economy) to the modelled number of lives saved and DALYs averted.

Broadly, the main challenges organisations have reported as it

relates to developing their approach to demonstrating VfM were identifying and measuring which benefits to include? For which populations? And over what period? (PPA Learning Partnership, 2016) In our opinion, with large health programme such as ours, it is most imperative to incorporate outcomes that are most pertinent and that reflect the most important contribution of the programme, rather than trying to capture every outcome available. In addition, it is important to only include outcomes attributable to the programme, especially bearing in mind that in many LMICs and indeed conflict-affected countries, there are several concurrent programmes being implemented by different organisations but aimed at similar outcomes. This was a huge challenge for us also on HPF2. However, we were able to leverage national databases to account for outcomes across the country while specifically highlighting outcomes attributable to our own programme in facilities that were supported by the HPF2 programme.

For a comprehensive VfM assessment, cross-cutting themes such as equity, sustainability, scalability and cultural acceptability also need to be assessed, as they provide critical contextual information for interpreting VfM assessments (Banke-Thomas, Madaj et al., 2017). For the HPF2 programme, there was already a well-grounded narrative on equity, especially as it relates to the work reaching some of the most marginalised populations in the country. The programme was being implemented in eight out of the ten states in South Sudan excluding two states (Upper Nile and Jonglei) which were being managed by another fund manager. However, the narrative on equity would be stronger when there is disaggregated outcome-level data that shows sub-national and gender variability, thereby allowing meaningful comparison and capacity to demonstrate programme benefits for the most marginalised sub-populations. As advised, to contextualise the quantitative evidence, qualitative engagements with key stakeholders would be relevant (Banke-Thomas, Madaj et al., 2017; Jackson, 2012). Regular monitoring of VfM indicators including cost, cost per output and cost per outcome while capturing qualitative narratives on cross-cutting themes including equity, sustainability, scalability and cultural acceptability through engagements with programme stakeholders, more so, beneficiaries were planned for routine collection during sessions organised to review explanations on changes observed over time in the next phase of the programme. These engagements with stakeholders also help in identifying unintended outcomes of the intervention which can be incorporated into future VfM assessments (Banke-Thomas et al., 2019). Other experts submit that using qualitative and quantitative data to triangulate information can provide assurance on the evidence used to decision-making (PPA Learning Partnership, 2016).

### 3.3. Insights on comparing VfM

On HPF2, comparisons have been made between VfM created by implementing partners (IPs). To do this, we identified the principal characters of all IPs on the programme. Mean value of costs, number of client visits, DALYs averted, cost/DALY averted, deaths averted, and cost/death averted were compared using *t*-test comparison of the two groups (national vs. international organisations AND faith-based vs. not-faith-based organisations) with a significant *p*-value of 0.05 chosen to highlight any significant statistical differences between the two groups being compared. Our results showed that though the international IPs spent more to deliver the programme in their allocated sub-national regions compared to the national IPs, they also managed more clients than the national IPs. The cost per DALY averted as well as the cost per death averted was lower in sub-regions managed by national IPs compared with those managed by international IPs. Similar observation was made with faith-based compared with the non-faith-based IPs. However, across all VfM metrics, the differences observed were not statistically significant. This provided unique insight for programme implementers regarding approaches to work with and expectation from partners.

Indeed, the real value of comparisons is to be able to compare between

different programmes and peers (Bond for International Development, 2012). To achieve this, it is advised to state the currency and year in which the cost data were collected. When the currency of the costs data and year in which the study was conducted are stated and necessary adjustments due to inflation accounted for, comparisons can be made to establish which interventions, programmes, strategies or approaches are more efficient (Banke-Thomas, Wilson-Jones, Madaj, & van den Broek, 2017; Turner, Lauer, Tran, Teerawattananon, & Jit, 2019). Three main methods have been used to adjust for inflation: exchanging the local currency to US\$ or international dollars (\$) and then inflating using US inflation rates (method 1), inflating the local currency using local inflation rates and then exchanging to US\$ or I\$ (method 2); and some combination of method 1 and method 2 (method 3) (Turner et al., 2019). The approach of choice is dependent on the scenario and the type of costs requiring conversion (Turner et al., 2019). Conversion allows for ease of comparison across similar interventions and models (Banke-Thomas, Wilson-Jones et al., 2017). The critical judgment to make here is whether or not the costs of inputs per outputs is comparable with similar interventions or programmes (Trémolet et al., 2015). For example, some maternal and newborn health studies that reported cost analyses of emergency obstetric care training conducted in developing countries report differing cost components as part of their cost analyses. Some report direct costs only, other included indirect costs (Banke-Thomas, Wilson-Jones et al., 2017). Disaggregating the cost components to make sure that “apples are not being compared with oranges” is a critical analytical step for effective comparison.

Ultimately, the choice on outcome data collected and which economic evaluation tool has been used in assessing cost-effectiveness will determine the comparability of VfM. Cost-effectiveness analysis (CEA), cost-utility analysis (CUA), cost-benefit analysis (CBA) and social return on investment (SROI) have all been used to assess the cost-effectiveness of public health interventions broadly (Banke-Thomas et al., 2015; Bond for International Development, 2012). These different methods for assessing cost-effectiveness for VfM analyses have their individual strengths and weakness (Banke-Thomas, Madaj et al., 2017). Essentially, if there is cost data and some form of effectiveness (outcome) metric, which is usually natural units (For example, number of maternal lives saved, number of trainees that improved in knowledge etc.), then a CEA can be conducted. These metrics are relatively easier to capture provided data is available and may not require any modelling or advanced economic knowledge. However, with CUA, utility metrics such as DALYs need to be estimated or modelled. If DALYs are available for programme outcomes, then this option is recommended as it allows for easier comparability with other programmes (Drummond, Sculpher, Claxton, Stoddart, & Torrance, 2015). The other two alternatives, CBA and SROI require monetisation of outcomes (Banke-Thomas, Madaj et al., 2017). However, while SROI in particular, is becoming increasingly used as it captures subjective outcome valuation by actual programme beneficiaries (Banke-Thomas et al., 2015, 2019), organisations preferred not to conduct CBA and SROI studies for VfM assessments because of the difficulty in collecting data for the same reason why both approaches are valued – the “subjective” outcome valuation (PPA Learning Partnership, 2016). However, despite the known challenges and problems associated with using SROI for evaluation in general and in particular for VfM assessment, an interdisciplinary approach that involves beneficiaries themselves and where applicable advocates of beneficiaries themselves, has been proposed as a way to improve measures, designs, and decision-making guidelines for SROI (Yates & Marra, 2017).

Another key consideration in comparing VfM relates to finding appropriate external or internal benchmarks for comparisons (PPA Learning Partnership, 2016). One of such benchmarks is the World Health Organization’s ‘Choosing Interventions that are Cost-Effective’ project (WHO-CHOICE)’s Gross Domestic Progress (GDP)-based cost-effectiveness thresholds (Bertram et al., 2016; Neumann et al., 2016). Using this benchmark on the HPF2 programme, our analysis

demonstrated that the programme is “very cost-effective” and guarantees value-for-money as it costs much less than the average per capita income in South Sudan in 2015 (US\$758.72) (Robinson, Hammitt, Chang, & Resch, 2017; World Bank, 2019b). Though some authors have argued that the WHO GDP-based threshold has been misused in many LMICs (Leech, Kim, Cohen, & Neumann, 2018). This is an ongoing debate.

#### 4. Proposed process framework for embedding VfM in health programmes in sub-Saharan Africa

Our analysis has shown that it is possible to demonstrate and compare VfM even in sub-optimally functioning health systems. At the very least, approaches for data collection can be tailored to the availability of data and the skill of the team. The real variation in the process of embedding VfM in settings is in how evaluators and programme leads manage for VfM. This needs to be contextualised and respond to the unique challenges within which VfM is taking place.

Reflecting on the insights we have garnered in embedding VfM into our programme and evidence in the literature, we propose a process framework for embedding VfM in health programmes, expanding on the simplified framework proposed by Bond [Fig. 4]. Our proposed expanded process framework is an iterative one that requires sustained managing for VfM to allow robust demonstration of global programmatic VfM and meaningful comparison of VfM at disaggregated levels [Fig. 4]. All steps contribute to overall improved VfM.

It is worth highlighting that while our proposed framework is based on insight from our work in a fragile and fragmented health system like

South Sudan, we believe that it would also be relevant and effective in other settings and indeed on non-health focused programmes.

#### 5. Conclusion

While some have hoped for a future beyond aid since the early 2000’s (Fowler, 2000), aid allocated for health remains critical for LMICs, including those that are more fragile and unstable, as it supplements internally generated funds that are channelled by governments towards improving health outcomes for the population. Indeed, evidence shows that health aid has contributed to significant reductions in infant mortality in the past (Mishra & Newhouse, 2009). However, to do more, approaches that are most cost-effective need to be identified and scaled up. Robust VfM assessments provide critical insight into how DAH can be used more effectively for health programmes, thereby ensuring that investments made in health can achieve maximum results (Momah, 2018; PPA Learning Partnership, 2016). Achieving such results will be critical to making progress towards achieving the SDGs by 2030 (United Nations General Assembly, 2014). The need for VfM is not as much the concern as much as the how to demonstrate VfM. Insights shared in this article provide some relevant guidelines to help in improving VfM practice.

#### Declaration of Competing Interest

None.

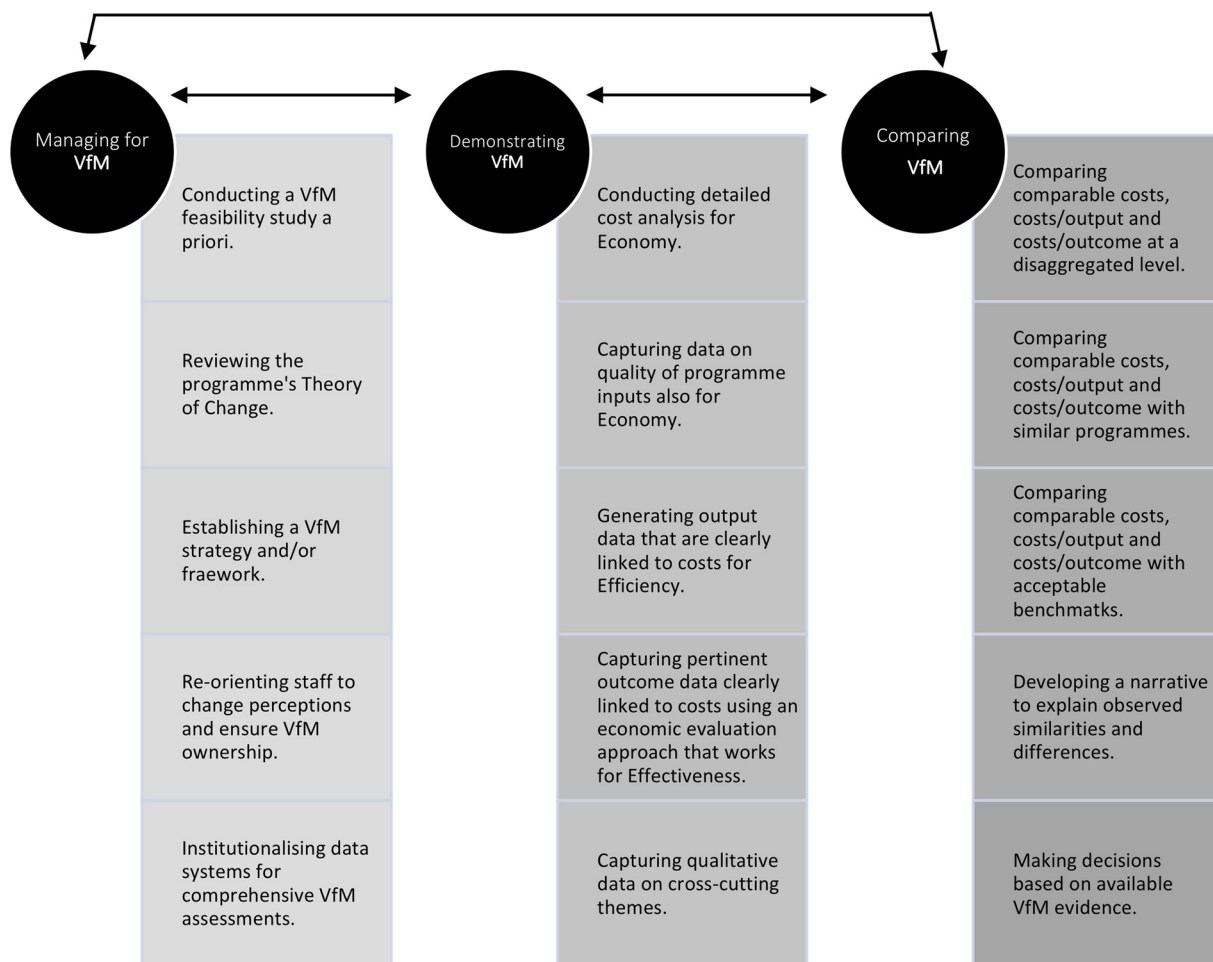


Fig. 4. Proposed process framework for embedding Value for Money in LMICs.



## References

- Alkema, L., Chou, D., Hogan, D., Zhang, S., Moller, A.-B., Gemmill, A., ... United Nations Maternal Mortality Estimation Inter-Agency Group collaborators and technical advisory group (2016). Global, regional, and national levels and trends in maternal mortality between 1990 and 2015, with scenario-based projections to 2030: a systematic analysis by the UN Maternal Mortality Estimation Inter-Agency Group. *Lancet*, 387(10017), 462–474. [https://doi.org/10.1016/S0140-6736\(15\)00838-7](https://doi.org/10.1016/S0140-6736(15)00838-7).
- Banke-Thomas, A., Madaj, B., Ameh, C., & van den Broek, N. (2015). Social Return on Investment (SROI) methodology to account for value for money of public health interventions: A systematic review. *BMC Public Health*, 15, 582. <https://doi.org/10.1186/s12889-015-1935-7>.
- Banke-Thomas, A., Madaj, B., Kumar, S., Ameh, C., & van den Broek, N. (2017). Assessing value-for-money in maternal and newborn health. *BMJ Global Health*, 2, e000310. <https://doi.org/10.1136/bmjgh-2017-000310>.
- Banke-Thomas, A., Madaj, B., & van den Broek, N. (2019). Social return on investment of emergency obstetric care training in Kenya. *BMJ Global Health*, 4(1), e001167. <https://doi.org/10.1136/bmjgh-2018-001167>.
- Banke-Thomas, A., Wilson-Jones, M., Madaj, B., & van den Broek, N. (2017). Economic evaluation of emergency obstetric care training: A systematic review. *BMC Pregnancy and Childbirth*, 17, 403. <https://doi.org/10.1186/s12884-017-1586-z>.
- Barnett, C., Barr, J., Christie, A., Duff, B., & Hext, S. (2010). *Measuring the impact and value for money of governance and conflict programmes* Retrieved from [https://assets.publishing.service.gov.uk/media/57a08b1eed915d3cfd000b44/60797\\_ITAD-VFM-Report-Dec10.pdf](https://assets.publishing.service.gov.uk/media/57a08b1eed915d3cfd000b44/60797_ITAD-VFM-Report-Dec10.pdf).
- Barton, R., Aibinu, A. A., & Oliveros, J. (2019). The value for money concept in investment evaluation: Deconstructing its meaning for better decision making. *Project Management Journal*, 50(2), 210–225. <https://doi.org/10.1177/8756972819827102>.
- Bayo, P., Itua, I., Francis, S. P., Boateng, K., Tahir, E. O., & Usman, A. (2018). Estimating the net need for emergency obstetric care (EmOC) services in three payams of Torit County, South Sudan: A facility-based, retrospective cross-sectional study. *BMJ Open*, 8(2), e018739. <https://doi.org/10.1136/bmjopen-2017-018739>.
- Bertram, M. Y., Lauer, J. A., De Joncheere, K., Edejer, T., Hutubessy, R., Kieny, M.-P., & Hill, S. R. (2016). Cost-effectiveness thresholds: Pros and cons. *Bulletin of the World Health Organization*, 94(12), 925–930. <https://doi.org/10.2471/BLT.15.164418>.
- Bond for International Development (2012). *Value for money: What does it mean for UK NGOs?* Retrieved from [https://www.bond.org.uk/data/files/Value\\_for\\_money\\_-\\_what\\_it\\_means\\_for\\_NGOs\\_Jan\\_2012.pdf](https://www.bond.org.uk/data/files/Value_for_money_-_what_it_means_for_NGOs_Jan_2012.pdf).
- Brousselle, A., & Champagne, F. (2011). Program theory evaluation: Logic analysis. *Evaluation and Program Planning*, 34(1), 69–78. <https://doi.org/10.1016/J.EVALPROGPLAN.2010.04.001>.
- CGMA (2011). *Activity-based budgeting (ABB)*. Retrieved June 18, 2019, from What is it? website: <https://www.cgma.org/resources/tools/essential-tools/activity-based-budgeting.html>.
- Checchi, F., Testa, A., Warsame, A., Quach, L., & Burns, R. (2018). *Estimates of crisis-attributable mortality in South Sudan, December 2013– April 2018: A statistical analysis* Retrieved from [https://reliefweb.int/sites/reliefweb.int/files/resources/LSHTM\\_mortality\\_South\\_Sudan\\_report.pdf](https://reliefweb.int/sites/reliefweb.int/files/resources/LSHTM_mortality_South_Sudan_report.pdf).
- Chola, L., Pillay, Y., Barron, P., Tugendhaft, A., Kerber, K., & Hofman, K. (2015). Cost and impact of scaling up interventions to save lives of mothers and children: Taking South Africa closer to MDGs 4 and 5. *Global Health Action*, 8, 27265. <https://doi.org/10.3402/gha.v8.27265>.
- Crown Agents (2018). *South Sudan health pooled fund (HPF)*. Retrieved June 24, 2019, from Project website: <https://www.crownagents.com/project/south-sudan-health-pooled-fund/>.
- DFID (2011). *DFID's approach to value for money (VfM)*. Retrieved from [https://www.gov.uk/government/uploads/system/uploads/attachment\\_data/file/67479/DFID\\_approach-value-money.pdf](https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/67479/DFID_approach-value-money.pdf).
- Dieleman, J. L., Schneider, M. T., Haakenstad, A., Singh, L., Sadat, N., Birger, M., ... Murray, C. J. L. (2016). Development assistance for health: Past trends, associations, and the future of international financial flows for health. *Lancet*, 387(10037), 2536–2544. [https://doi.org/10.1016/S0140-6736\(16\)30168-4](https://doi.org/10.1016/S0140-6736(16)30168-4).
- Dijkzeul, D., & Wakenge, C. I. (2010). Doing good, but looking bad? Local perceptions of two humanitarian organisations in eastern Democratic Republic of the Congo. *Disasters*, 34(4), 1139–1170. <https://doi.org/10.1111/j.1467-7717.2010.01187.x>.
- Drummond, M. F., Sculpher, M. J., Claxton, K., Stoddart, G. L., & Torrance, G. W. (2015). *Methods for the economic evaluation of health care programmes*. Oxford: Oxford University Press.
- Drummond, M., Sculpher, M., Torrance, G., O'Brien, B., & Stoddart, G. (2005). *Methods for economic health evaluation of health care programmes* (3rd ed.). Oxford: Oxford University Press.
- Fowler, A. (2000). NGO futures: Beyond aid: NGO values and the fourth position. *Third World Quarterly*, 21(4), 589–603. <https://doi.org/10.1080/713701065>.
- Friberg, I. K., Baschieri, A., & Abbotts, J. (2017). A method for estimating maternal and newborn lives saved from health-related investments funded by the UK government Department for International Development using the Lives saved Tool. *BMC Public Health*, 17(S4), 779. <https://doi.org/10.1186/s12889-017-4748-z>.
- Garnett, G. P., Cousens, S., Hallett, T. B., Steketee, R., & Walker, N. (2011). Mathematical models in the evaluation of health programmes. *Lancet*, 378(9790), 515–525. [https://doi.org/10.1016/S0140-6736\(10\)61505-X](https://doi.org/10.1016/S0140-6736(10)61505-X).
- HM Treasury (2004). *Regularity, propriety and value for money*. Retrieved from [http://webarchive.nationalarchives.gov.uk/20130129110402/http://www.hm-treasury.gov.uk/d/Reg\\_Prop\\_and\\_VfM-November04.pdf](http://webarchive.nationalarchives.gov.uk/20130129110402/http://www.hm-treasury.gov.uk/d/Reg_Prop_and_VfM-November04.pdf).
- ICAI (2018). *DFID's approach to value for money in programme and portfolio management: A performance review*. Retrieved from <https://icai.independent.gov.uk/wp-content/uploads/DFIDs-approach-to-value-for-money-ICAI-review.pdf>.
- Integrity (2018). *Evaluation of the South Sudan health pooled fund*. Retrieved from [http://iati.dfid.gov.uk/iati\\_documents/35675062.pdf](http://iati.dfid.gov.uk/iati_documents/35675062.pdf).
- Jackson, P. (2012). *Value for money and international development: Deconstructing myths to promote a more constructive discussion*. Retrieved from <http://www.oecd.org/development/effectiveness/49652541.pdf>.
- Johns, B., Baltussen, R., & Hutubessy, R. (2003). Programme costs in the economic evaluation of health interventions. *Cost Effectiveness and Resource Allocation*, 1, 1. <https://doi.org/10.1186/1478-7547-1-1>.
- Latif, K. F., & Williams, N. (2017). Team effectiveness in Non-Governmental Organizations (NGOs) projects. *Evaluation and Program Planning*, 64, 20–32. <https://doi.org/10.1016/J.EVALPROGPLAN.2017.05.004>.
- Leech, A. A., Kim, D. D., Cohen, J. T., & Neumann, P. J. (2018). Use and Misuse of Cost-Effectiveness Analysis Thresholds in Low- and Middle-Income Countries: Trends in Cost-per-DALY Studies. *Value in Health: the Journal of the International Society for Pharmacoeconomics and Outcomes Research*, 21(7), 759–761. <https://doi.org/10.1016/J.JVAL.2017.12.016>.
- Michalow, J., Chola, L., McGee, S., Tugendhaft, A., Pattinson, R., Kerber, K., ... Dhansay, A. (2015). Triple return on investment: The cost and impact of 13 interventions that could prevent stillbirths and save the lives of mothers and babies in South Africa. *BMC Pregnancy and Childbirth*, 15, 39. <https://doi.org/10.1186/s12884-015-0456-9>.
- Mishra, P., & Newhouse, D. (2009). Does health aid matter? *Journal of Health Economics*, 28(4), 855–872. <https://doi.org/10.1016/j.jhealeco.2009.05.004>.
- Momah, I. I. (2018). Official development assistance and the factors impeding its effectiveness in Africa. *Africa Review*, 10(2), 129–139. <https://doi.org/10.1080/09744053.2018.1485252>.
- Neumann, P. J., Thorat, T., Zhong, Y., Anderson, J., Farquhar, M., Salem, M., ... Cohen, J. T. (2016). A systematic review of cost-effectiveness studies reporting Cost-per-DALY averted. *PLoS One*, 11(12), e0168512. <https://doi.org/10.1371/journal.pone.0168512>.
- NZAID (2011). *Value for money: Guideline* (No. 2482486v3). Retrieved from [https://www.mfat.govt.nz/assets/\\_securedfiles/Aid-Prog-docs/Value-for-Money-Guideline.pdf](https://www.mfat.govt.nz/assets/_securedfiles/Aid-Prog-docs/Value-for-Money-Guideline.pdf).
- Okoli, C., Ezenduka, C., Uzochukwu, B., Okoronkwo, I., & Onwujekwe, O. (2014). Achieving value for money in healthcare: Principles, methods and empirical applications. *African Journal of Health Economics*, 3(1), 25–38. <https://doi.org/10.35202/AJHE.2014.3102>.
- Ouma, P. O., Maina, J., Thurairana, P. N., Macharia, P. M., Alegana, V. A., English, M., ... Snow, R. W. (2018). Access to emergency hospital care provided by the public sector in sub-Saharan Africa in 2015: A geocoded inventory and spatial analysis. *The Lancet Global Health*, 6(3), e342–e350. [https://doi.org/10.1016/S2214-109X\(17\)30488-6](https://doi.org/10.1016/S2214-109X(17)30488-6).
- Patel, P., Dahab, M., Tanabe, M., Murphy, A., Ettema, L., Guy, S., & Roberts, B. (2016). Tracking official development assistance for reproductive health in conflict-affected countries: 2002–2011. *BJOG*, 123(10), 1693–1704. <https://doi.org/10.1111/1471-0528.13851>.
- Population Services International (2017). *PSI impact calculator*. Retrieved June 19, 2019, from <http://impactcalculator.psi.org/>.
- PPA Learning Partnership (2016). *Assessing and managing value for money: Lessons for NGOs* Retrieved from <https://www.bond.org.uk/sites/default/files/resource-documents/assessing-and-managing-vfm-main-report-0ct16.pdf>.
- Robinson, L. A., Hammit, J. K., Chang, A. Y., & Resch, S. (2017). Understanding and improving the one and three times GDP per capita cost-effectiveness thresholds. *Health Policy and Planning*, 32(1), 141–145. <https://doi.org/10.1093/heapol/czw096>.
- Saronga, H. P., Dalaba, M. A., Dong, H., Leshabari, M., Sauerborn, R., Sukums, F., ... Loukanova, S. (2015). Cost of installing and operating an electronic clinical decision support system for maternal health care: Case of Tanzania rural primary health centres. *BMC Health Services Research*, 15, 132. <https://doi.org/10.1186/s12913-015-0780-9>.
- Stewart, F. (2002). Root causes of violent conflict in developing countries. *BMJ (Clinical Research Ed)*, 324(7333), 342–345. <https://doi.org/10.1136/bmj.324.7333.342>.
- Trémolet, S., Prat, M.-A., Tincani, L., Ross, I., Mujica, A., Burr, P., & Evans, B. (2015). *Value for Money analysis of DFID-funded WASH programmes in six countries* Retrieved from <http://vfm-wash.org/wp-content/uploads/2015/08/OPM-2015-Synthesis-report-of-6-VFM-WASH-studies.pdf>.
- Turner, H. C., Lauer, J. A., Tran, B. X., Teerawattananon, Y., & Jit, M. (2019). Adjusting for inflation and currency changes within health economic studies. *Value in Health: the Journal of the International Society for Pharmacoeconomics and Outcomes Research*, 22(9), 1026–1032. <https://doi.org/10.1016/j.jval.2019.03.021>.
- UNESCO (2019). *UNESCO country strategy for the Republic of South Sudan*. Retrieved from [http://www.unesco.org/new/fileadmin/MULTIMEDIA/FIELD/juba/pdf/UCS\\_2019\\_2021.pdf](http://www.unesco.org/new/fileadmin/MULTIMEDIA/FIELD/juba/pdf/UCS_2019_2021.pdf).
- United Nations General Assembly (2014). *The road to dignity by 2030: Ending poverty, transforming all lives and protecting the planet: Synthesis report of the secretary-General on the post-2015 sustainable development agenda. 69th Session of the General Assembly*.
- Walker, D. (2001). Cost and cost-effectiveness guidelines: which ones to use? *Health Policy and Planning*, 16(1), 113–121.
- Walker, N., Tam, Y., & Friberg, I. K. (2013). Overview of the lives saved tool (LiST). *BMC Public Health*, 13(Suppl. 3), S1. <https://doi.org/10.1186/1471-2458-13-S3-S1>.
- WHO (2018). *Country cooperation strategy at a glance: South Sudan*. Retrieved from [https://apps.who.int/iris/bitstream/handle/10665/136881/ccsbrief\\_ssd\\_en.pdf;jsessionid=B789155E8C4886E78A33CADA4FAB932?sequence=1](https://apps.who.int/iris/bitstream/handle/10665/136881/ccsbrief_ssd_en.pdf;jsessionid=B789155E8C4886E78A33CADA4FAB932?sequence=1).
- World Bank (2019a). *South Sudan*. Retrieved September 16, 2019, from The World Bank In South Sudan website: <https://www.worldbank.org/en/country/southsudan/overview>.
- World Bank (2019b). *South Sudan*. Retrieved June 19, 2019, from Data website: <https://data.worldbank.org/country/south-sudan>.



Yates, B. T., & Marra, M. (2017). Social Return On Investment (SROI): Problems, solutions ... and is SROI a good investment? *Evaluation and Program Planning*, 64, 136–144. <https://doi.org/10.1016/j.evalprogplan.2016.11.009>.

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