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# The Added Value of Long-Term Technical Assistance to National Malaria Control Programs

Phase II Assessment Report Addendum



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### **About the LMG Project**

Funded by USAID, the Leadership, Management and Governance (LMG) project (2011-2016) collaborates with health leaders, managers, and policymakers at all levels to show that investments in leadership, management, and governance lead to stronger health systems and improved health. The LMG project embraces the principles of country ownership, gender equity, and evidence-driven approaches. Emphasis is also placed on good governance in the health sector – the ultimate commitment to improving service delivery -- and fostering sustainability through accountability, engagement, transparency, and stewardship. Led by Management Sciences for Health (MSH), the LMG consortium includes Amref Health Africa; International Planned Parenthood Federation (IPPF); Johns Hopkins University Bloomberg School of Public Health (JHSPH); Medic Mobile; and Yale University Global Health Leadership Institute (GHLI).

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*Photo credit: Pepin Miyigbena, LDP+ session with the NMCP in Côte d'Ivoire*

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## Acronyms

<b>CCM</b>	Country Coordinating Mechanism
<b>GFATM</b>	Global Fund to Fight AIDS, Tuberculosis and Malaria
<b>FGI</b>	Focus group interview
<b>HR</b>	Human Resource(s)
<b>HRH 2030</b>	Human Resources for Health in 2030
<b>KII</b>	Key informant interview
<b>LDP+</b>	Leadership Development Program, Plus
<b>LMG</b>	Leadership, Management and Governance project
<b>LTA</b>	Long-term technical assistance advisor
<b>MCSP</b>	Maternal and Child Survival Program
<b>MOH</b>	Ministry of Health
<b>MSH</b>	Management Sciences for Health
<b>NMCP</b>	National Malaria Control Program
<b>OCA</b>	Organizational Capacity Assessment
<b>PMI</b>	President's Malaria Initiative
<b>PPFP</b>	Post-partum family planning
<b>PR</b>	Principal Recipient (Global Fund grant)
<b>SIAPS</b>	Systems for Improved Access to Pharmaceuticals and Services
<b>SR</b>	Sub recipient (Global Fund grant)
<b>UNICEF</b>	United Nations Children's Fund
<b>USAID</b>	United States Agency for International Development
<b>USG</b>	United States Government
<b>WHO</b>	World Health Organization

## Glossary

**Coefficients of correlation:** A statistical measure of the degree to which changes to the value of one variable predict change to the value of another. In positively correlated variables, the value increases or decreases in tandem. In negatively correlated variables, the value of one increases as the value of the other decreases. (Wert, Neidt, & Ahmann, 1954)

**Confidence interval:** “A range of plausible values for a population parameter with a level of confidence attached.” (Sullivan, 2012)

**Difference-in-differences:** A methodology that helps draw a causal inference. In this methodology, outcomes are observed for two groups for two time periods, pre- and post-intervention. One group is exposed to an intervention while the other is not. The difference between post and pre-intervention in the control group is subtracted from the difference in the intervention group. It removes biases in the post period comparisons between the intervention and control group that could result from permanent differences between the groups, as well as biases from comparisons over time in the intervention group that could be the result of a time trend. (Guido Imbens, 2007)

**F value:** Examines the overall significance of a regression model by testing the null hypothesis that all coefficients are equal to zero. The F value is the ratio of the mean regression sum of squares divided by the mean error sum of squares. Its value will range from zero to an arbitrarily large number. The value of Prob(F) is the probability that the null hypothesis for the full model is true (i.e., that all of the regression coefficients are zero). (Nonlinear Regression and Curve Fitting, 2017) (Regression Analysis: Stata Annotated Output, 2017)

**Ordinary least squares:** “A generalized linear modeling technique that may be used to model a single response variable which has been recorded on at least an interval scale. The technique may be applied to single or multiple explanatory variables and also categorical explanatory variables that have been appropriately coded.” (Hutcheson, 2011)

**P-Value:** “The exact significance of the data, the likelihood of observing the sample data if the null hypothesis is true, or the smallest level of significance where we still reject H0 (null hypothesis).” (Sullivan, 2012). A low p-value (< 0.05) indicates that you can reject the null hypothesis. In other words, a predictor that has a low p-value is likely to be a meaningful addition to your model because changes in the predictor's value are related to changes in the response variable. (Frost, 2013)

**Secular trend:** Changes over a long period of time, generally years or decades. (Glossary of Epidemiology, n.d.)

**Social desirability bias:** The tendency of some respondents to report an answer in a way they deem to be more socially acceptable than would be their "true" answer. They do this to project a favorable image of themselves and to avoid receiving negative evaluations. The outcome of the strategy is over reporting of socially desirable behaviors or attitudes and underreporting of socially undesirable behaviors or attitudes. Social desirability is classified as one of the respondent-related sources of error (bias). (Lavrakas, 2008)

**Standardized coefficient ( $\beta$ ):** Describes the change in Y that is associated with a unit change in X.  $\beta$  provides an indication of the average expected change. (Hutcheson, 2011)

## Executive Summary

In the global fight against malaria, National Malaria Control Programs (NMCPs) play a central role in leading national-level malaria control efforts. In order for NMCPs to fulfill this role, it is essential that individual NMCP staff members and NMCPs as organizational units possess the knowledge, skills, behaviors, and attitudes required to successfully lead, coordinate, and manage actors at all levels of the health system. In an effort to support NMCPs in becoming fully capable of both directing and implementing national malaria control strategies, and capable of effectively managing Global Fund malaria grants, the United States President's Malaria Initiative (PMI), with funding from the United States Government (USG) Global Fund 5% technical assistance set aside, has placed long-term technical assistance advisors (LTAs) with NMCPs in nine countries. These LTAs are placed for up to four years, and work with NMCP staff to identify and address capacity gaps. The LTA scope of work is broad, with LTAs having supported NMCPs to:

- Improve human, financial, and material resource management;
- Develop and direct national policies and norms for malaria control;
- Mobilize stakeholders and funding for national malaria control coordination; and
- Strengthen supply chain management for malaria commodities.

LTAs provide this support with ongoing assessment, feedback, direct technical assistance, training, advising, and coaching.

This report summarizes the second phase findings of an assessment that aimed to evaluate the added value of LTA to NMCPs. The overall assessment examined the effectiveness of the LTA model of capacity building for improved NMCP coordination and performance, particularly as it relates to improved management and implementation of Global Fund malaria grants. The LTAs included in this assessment are managed and implemented by Management Sciences for Health (MSH) through the USAID-funded Leadership, Management and Governance project (LMG). This first phase of the assessment research included LTAs and NMCPs in Cameroon, Côte d'Ivoire, Guinea, and Liberia. The Phase I report includes the complete background, methodology, analysis, results, and conclusions based on the Phase I findings, and is meant to be read in tandem with the Phase II report.

LTAs included in the Phase II assessment are managed and implemented by MSH, Jhpiego, and Chemonics through LMG, the Maternal and Child Survival Program (MCSP), and Human Resources for Health in 2030 (HRH2030), respectively.

In the five Phase II countries, data were collected after the LTA had been providing support for two years or less. Quantitative data included Global Fund grant disbursement rates, burn rates, grant ratings, and performance indicators, as well as NMCP staff surveys. Focus group discussions and interviews provided data about the effect of LTAs on building NMCP capacity to manage and lead national malaria efforts, as well as the barriers and facilitators of NMCP performance.

Results showed that participants unanimously agreed that LTA support has positively influenced NMCPs' ability to manage, coordinate, and lead national malaria efforts. NMCP staff members reported having greater confidence in their abilities to carry out their job functions, coordinate internally, coordinate national malaria partners, and manage Global Fund malaria grants. In Phase II, NMCP staff confidence increased by an average of 28%. Of the 28% average increase in confidence, 50% is attributed to the LTA's support. Combined with Phase I results, this showed that on average across all nine countries, the average increase in NMCP staff confidence was 31%, and of that 55.57% was attributed to the LTA. Feedback and experiences provided during key informant interviews with NMCP directors and NMCP



staff focus group discussions confirmed the survey results. NMCP staff members positively regard the LTA support, and feel the assistance, advice, training, and coaching they provided has positively impacted staff motivation, technical competencies, coordination, leadership, and grant management.

NMCP malaria partners who were interviewed (USAID, Global Fund Grant Principal Recipients and Sub Recipients, SRs, WHO, UNICEF, Country Coordinating Mechanism) supported this in their observations. They noted that, over the past several years, NMCPs have more actively led and coordinated malaria control efforts, improved their responsiveness and the quality of communication with partners, and have generally been able to manage the malaria grant and activities well. Partners felt that the LTAs had a role to play in these improvements: they had been able to foster regular and systemic internal coordination at the NMCP; foster regular planning; motivate and support staff; propose and support implementation of solutions to bottlenecks and challenges; and introduce tools and training that the NMCPs will continue to use.

Despite these findings, the assessment did not find a statistically significant, positive relationship between LTA inputs and grant performance outcomes; though we did find a statistically significant relationship between the LTA inputs and changes in staff confidence.

To better understand the potential links between NMCP staff and organizational capacity, and Global Fund grant management and performance, we examined data on the external and internal contexts in which NMCPs operate and the characteristics of the LTA intervention. We found that in the external context, government structure, the Global Fund grant management structure, procurement mechanisms, lack of financial resources within the health system, and outside events (such as epidemics and security threats), have an effect on how efficiently and effectively NMCPs manage and lead malaria activities. Internally, NMCP staff and partners noted that human resource issues sometimes negatively impact NMCP capacity.

As in Phase I, we found that the experience and attitude of the LTA both allowed NMCP staff to trust the LTA's insight and judgment, and allowed them to learn from LTAs. Participants also were in strong agreement that the duration of LTA support was a key attribute of LTA success in building capacity. They felt that in order for LTA support to achieve lasting improvements, LTAs should work with NMCPs for a minimum of three years. In comparison to Phase I, NMCP staff interviewed in Phase II did not cite the same kinds of changes in their personal attitudes, motivation, and behaviors at work. We surmise that this may be due to the absence of a performance improvement program, such as the Leadership Development Program Plus (LDP+), as well as the duration of the LTA tenure.

## EMERGING THEMES FROM FOCUS GROUPS AND INTERVIEWS

### **LTA in Phase II credited for a role in:**

- Improving staff technical expertise in supply chain management
- Improved staff coordination and communication, internally and externally
- Improved internal planning and coordination (meetings, follow up)
- Improved understanding of Global Fund rules, regulations, and requirements
- Improved planning through annual, quarterly, and monthly work plans
- Improved management of grant funding



Limitations of the study included: lack of end-line organizational capacity assessment (OCA) data, limited quantitative measures, issues related to the outcome indicators used to measure grant management performance, and limited quantitative measures of the links between capacity-building technical assistance and improved organizational capacity. Further research with more precise management and grant performance measures is needed to provide generalizable results and information on the expected effect of LTA support on NMCPs.

Despite the study limitations, our findings still suggest that LTAs play a role in building individual staff and overall organizational capacity of NMCPs in the following ways: working daily with NMCPs over a sustained period; providing expertise and guidance on Global Fund grant management; introducing leadership and management tools and resources (namely the LDP+); supporting NMCP staff to effectively coordinate with malaria stakeholders; working with NMCP staff to build internal governance systems and processes; and supporting the application of leading, managing, and governing practices to malaria control efforts.

The question of how and to what extent long-term technical assistance adds value to other global malaria control investments is particularly complex and only partially addressed by this assessment. The nature of LTA support is difficult to quantify and to connect directly to Global Fund grant performance. However, qualitative data from this assessment suggest the sustained assistance, training, advice, and coaching provided by LTAs contribute to NMCP staff and NMCPs as organizations become more capable of leading and managing malaria control efforts, and also suggest that those improvements facilitate the effective and efficient management of Global Fund malaria funding.

# Methodology<sup>1</sup>

## Study sites

We divided the assessment into two phases. Phase I assessed LTAs embedded for two consecutive years or longer with NMCPs in four countries. Phase Two assessed LTA embedded for fewer than two consecutive years in five countries. This report includes data and findings from Phase II, which included NMCPs in Burundi, Côte d'Ivoire (supply chain management focus), Nepal, Niger (supply chain management focus), and Sierra Leone. The breakdown between the two phases is described in Table I below:

**TABLE 1: LTA ASSESSMENT PHASES I AND II**

	Country	Duration of LTA at time of data collection	Report timeline
<b>Phase I</b>	Cameroon	2.5 years	April 2017
	Côte d'Ivoire	2.5 years	
	Guinea	2.8 years	
	Liberia	2.5 years	
<b>Phase II</b>	Burundi	0.6 years	July 2017
	Côte d'Ivoire, Supply Chain	1.25 years	
	Nepal	0.9 years	
	Nepal, Supply Chain		
	Niger, Supply Chain	1.6 years	
	Sierra Leone	0.75 years	

## Data collection

Phase II of the assessment took place from January to March 2017. Assessment data were collected using both qualitative and quantitative methods. Qualitative methods included semi-structured key informant interviews (KII) and focus group discussions (FGD), and were used to gather data on the experiences of NMCP managers, staff, and other malaria stakeholders working with the LTA, their perceptions of changes in NMCP capacity, and the role they perceived the LTA to have played in the changes.

Quantitative methods included a survey that asked NMCP managers and staff to indicate the kind of support the LTA provided the NMCP (assisting, advising, training, and coaching). The second half of the survey asked NMCP staff to indicate their level of confidence in carrying out routine NMCP tasks and functions before the LTA's arrival (this was the proxy pre-test) and their level of confidence now. Once this section was completed, respondents were asked to indicate what level of influence they believed the LTA had in any changes in confidence. (For a summary of the survey questions, please see Appendix I in the Phase I report.)

For quantitative Global Fund malaria grant outcome data, we compiled secondary datasets from Aidspan's online database, the Aidspan Portal Workbench. Aidspan is an independent observer of the Global Fund, and the database retrieves grant portfolio data from web services provided by the Global Fund. We compiled data on each country's malaria grant rating, disbursement rate, burn rate, and performance indicator data, for all grants in each country from January 2003 to March 2017.

<sup>1</sup> The overall assessment background, conceptual framework, and design can be found in the Phase I assessment report (Betsie Cialino, 2017).

Using both qualitative and quantitative methods allowed for triangulation of results and provided in-depth information for understanding the complex processes and outcomes related to LTA support. Qualitative data was compared against quantitative findings in order to confirm agreement or disagreement between findings. While the quantitative data allowed us to measure any relationship between the LTA and expected outcomes, the qualitative data allowed us to better understand what people say about LTA support, and how and why the relationships work.

## **Ethical considerations**

Primary data collection tools (surveys, focus groups, and key informant interviews) required informed consent from respondents prior to collecting data. Grant performance measurement data were collected from Aidspace's publicly available online database, the Aidspace Portal Workbench. Additional data was gathered from the Global Fund website, which makes grant management letters available to the public.

## **Analysis**

### **Quantitative Statistical Analysis**

The statistician analyzed results from the quantitative surveys and the grant performance data. Descriptive statistical analysis was completed to understand mean percent increases in NMCP staff confidence, standard deviations, and confidence intervals. Basic statistical analyses were also completed to summarize findings on the type of support (assistance, training, advice, or coaching) that NMCP staff reported to have received from the LTA. Likewise, we completed descriptive statistical analysis on grant performance measures (disbursement rate, burn rate, grant performance indicators) to compare the mean, standard deviation, and confidence intervals for each country and for all countries. A differences-in-differences analysis was performed to compare the focus country grant performance with grant performance in similar countries in the same regions (Bangladesh, Benin, Bhutan, Burkina Faso, Central African Republic, Chad, Mali, Myanmar, and Togo). Criteria for inclusion for these comparison countries included population size, geographical proximity to focus countries, and Global Fund malaria grant recipient.

Coefficients of correlation were calculated to measure the strength and direction of a linear relationship between two variables. These were calculated for LTA inputs, overall gains in confidence, LTA induced gain in confidence, baseline organizational capacity scores, disbursement rates, burn rates, and grant performance indicators. Ordinary least squares (OLS) regression analyses were performed to examine the relationship between independent variables (LTA inputs, staff age, staff sex, and length of service) and dependent variables (increase in confidence, work plan completion, disbursement rate, burn rate, grant performance indicators) one at a time. Lastly, OLS regression with difference-in-differences analyses were performed to examine the relationship between the intervention and grant performance outcomes, comparing intervention countries with similar countries in the region that did not receive the intervention (LTA).

### **Qualitative Data Analysis**

All Phase II KII and FGD transcripts (n=40; 34 interviews and 6 focus group discussions) were transcribed in French and English. French transcriptions were translated into English, checked against the audio for quality control, and assigned to two researchers. A modified deductive coding structure was established based on Rosensweig's description of core NMCP functions and the assessment conceptual framework, then modified as needed during subsequent rounds of coding. Inductive coding was used to

identify and capture specific interventions introduced by LTAs that were attributed with facilitating improvements at NMCPs. Each researcher coded independently and then reconciled coding assignments, resolving discrepancies in pairs. Once the code assignments were finalized, the typed interview transcripts were imported into Dedoose, a web-based qualitative data analysis software, for analysis of broad themes from the codebook, and stratified by country. Further analysis examined associations between LTA inputs, NMCP leading, managing, and coordinating practices, and outcomes in individual staff capacity.

## **Study limitations and threats to validity**

### **Methodological limitations**

Given the nature of the projects managing LTAs, the sites included in this assessment were not randomly chosen. Results from baseline organizational capacity assessment, as well as the grant outcomes, reveal that the starting point for each NMCP at the time of the LTAs arrival was dissimilar. We were also unable to collect NMCP staff confidence data in other countries that receive Global Fund malaria grants but have not received LTA support, which would have provided information on whether or not there are secular trend improvements in staff confidence. Therefore, the assessment results may not be generalizable. Given this limitation, we were able to compare only Global Fund malaria grant outcome data from the focus countries and four similar countries using difference-in-differences analyses.

### **Lack of standardized OCA**

Five of the seven LMG/NMCP LTAs utilized the same organizational capacity assessment (OCA) tool at baseline and again at the end of the project. In Guinea, the LMG OCA tool was not used as the tool was not validated at the time the LTA began working, and the tool was not used by the second Supply Chain Management LTA in Cote d'Ivoire, as it had already been used by the first LMG LTA. In Nepal and Niger, where LTAs were managed by the MCSP and HRH2030 projects, different tools were used to establish baseline organizational capacity and needs. As a result, OCA datasets are not comparable across countries. While results from the baseline and end-of-project OCAs in Burundi, Cameroon, Cote d'Ivoire, Liberia, and Sierra Leone are analyzed in this report, our ability to objectively measure organizational capacity improvements across countries is limited. Furthermore, the limited OCAT datasets are not sufficient for measuring the causal pathway between NMCP staff confidence and organizational capacity improvements.

### **Grant Performance Measures**

To measure changes in Global Fund grant performance, we relied on the data routinely collected and reported on by Global Fund grant recipients. Currently these data – disbursement rate, burn rate, performance indicators, and grant ratings – are not always used by the Global Fund itself to measure and monitor the overall performance and progress of grants, or of grant recipients. A description of the limitations of each of these measures is described below in Table 2:

**TABLE 2: GRANT PERFORMANCE MEASURES**

DESCRIPTION		LIMITATIONS
Grant disbursement rate	Sum of funding disbursed to the PR for the period divided by the total amount budgeted for disbursement for the period	Prior to the New Funding Model (NFM), disbursement was linked to grant performance, and therefore was a proxy for overall programmatic and management performance. This is no longer the case for NFM grants, where funds are disbursed once a year and are not tied to management performance.
Grant burn rate	Sum of funding spent for the reporting period divided by the total amount disbursed during the funding period	Procurement of malaria commodities (insecticide-treated bed nets [ITNs], malaria treatment, rapid diagnostic tests) account for the bulk of grant spending. While grant PRs oversee procurement, delays are often out of their immediate control as other entities are responsible for procuring commodities. Furthermore, under the NFM, disbursements are made only once a year. This means burn rates are reported annually, instead of quarterly, which makes incremental monitoring of grant spending more difficult.
Grant performance indicators	<p>Each grant is designated a set of grant performance indicators that measure changes in malaria activity outputs and outcomes. For example:</p> <ul style="list-style-type: none"> <li>- Output: # of ITNs distributed</li> <li>- Outcome: % of pregnant women sleeping under ITNs</li> </ul> <p>We measured the percentage of indicators reaching targets reported for each grant.</p>	The available grant performance indicator datasets (via Global Fund website and Aidspan) does not include updated performance indicator data for each Progress Update, so annual and bi-annually updates on these indicators could not be measured.
Overall grant rating	Metrics for the rating are a combination of programmatic performance using performance framework, and a PR grant management factor.	The grant management factor is at the discretion of the Global Fund country portfolio team. The grant rating – which looks at overall PR and SR management – can be relatively subjective.

The limitations of each grant performance measure meant that we could not accurately judge grant management and grant performance (or PR management or performance) using just one measure. To account for these limitations, we analyzed all of the measures together instead of relying on only one.

## Recall bias

In the absence of baseline data of NMCP staff confidence to carry out key job functions, we asked staff to reflect back on the period before the LTA's arrival and indicate their level of confidence at that time. This type of survey design, which depends on self-reporting and remembering a point in the past, introduces the potential for recall bias. Studies have shown that the human brain continuously rewrites memories, which clouds memories with more recent events or can edit them completely (Voss, 2014). Risk of recall bias is especially high when potential responses could be socially unacceptable, or the events or information under question was life threatening or traumatic (Hassan, 2005). To control for recall bias, we carefully worded survey questions so they could not easily be interpreted as leading, respondents were given ample time to complete questionnaires, and survey administrators were careful

to reinforce that the survey responses were anonymous and would be used to measure the impact of the LTA model, not to measure the performance of specific LTAs. We also posit that NMCP staff *perceptions* of how LTA support has benefitted them is important, even if we cannot objectively measure changes in confidence (Robert Eisenberger, 1990).

## Pathways linking TA to grant outcomes

Finally, the understanding of the pathways of influence linking LTAs to grant performance improvements were largely documented through qualitative data, and compared against our own theoretical framework. This is in large part due to the lack of previously published studies or gray literature to inform measures. The methods and results of this assessment can inform future analysis as to potential indicators for measuring the influence of LTAs on sustained coordination and performance of national programs.

## Results

### Sample characteristics

Outcome data collected for each of the four countries, as described above in Table 4, included: grant disbursement rates, grant burn rates, grant performance indicator rates, and grant ratings. The grants included in the dataset are described in Annex I.

Table 3 below presents descriptive statistics for the KIs and FGD participants. In general, KIs and FGDs included a high percentage of Francophone males and are somewhat skewed toward malaria partners/stakeholder interviews.

**TABLE 3: INTERVIEW AND FOCUS GROUP PARTICIPANTS CHARACTERISTICS**

	Burundi	Côte d'Ivoire	Nepal	Niger	Sierra Leone	Percent
<b>Gender</b>						
Male	10	11	7	8	9	57
Female	10	6	3	11	4	43
<b>Interview type</b>						
Staff focus group	1	1	1	1	1	10
NMCP staff interview (unavailable for FG)	0	0	0	4	0	10
Malaria partner/stakeholder Interview	4	4	4	5	4	42.5
NMCP director Interview	2	2	2	1	2	17.5
<b>Language</b>						
English	1	1	1	1		10
French	6	6	0	9		52.5
English and French	0	0	0	1		0.025

Table 4 presents the survey respondents. The majority of respondents were French speaking and had more than 5 years of experience on the job.

**TABLE 4: SURVEY RESPONDENT CHARACTERISTICS**

	Burundi	Côte d'Ivoire	Nepal	Niger	Sierra Leone	TOTAL	PERCENT
<b>Gender</b>							
Male	4	5	6	8	8	<b>31</b>	<b>57</b>
Female	10	3	0	3	5	<b>21</b>	<b>39</b>
Unknown	0	1	1	0	0	<b>2</b>	<b>4</b>
<b>Years at post</b>							
<5 years	8	3	2	6	3	<b>23</b>	<b>40.7</b>
>5 years	5	5	4	4	9	<b>27</b>	<b>50</b>
Unknown	1	1	1	1	1	<b>5</b>	<b>9.3</b>
<b>Survey</b>							
<b>Language</b>							
English	0	0	7	0	13	<b>20</b>	<b>37</b>
French	14	9	0	11	0	<b>34</b>	<b>63</b>
<b>Total Survey Respondents</b>	<b>14</b>	<b>9</b>	<b>7</b>	<b>11</b>	<b>13</b>	<b>54</b>	
<b>Percent</b>	<b>27.4</b>	<b>16.6</b>	<b>12</b>	<b>20</b>	<b>24</b>		

## Study Results

The final assessment results are presented by each research question below.

### **QUESTION 1: Have LTAs carried out activities and actions that can be expected to build NMCP capacity to carry out the national strategic plan (and therefore implement the Global Fund grant)?**

In order to target their support, most LTAs completed an organizational capacity assessment (OCA) soon after their arrival. Activities included in individual LTA's annual work plans were based on OCA results and recommendations, scheduled grant-funded activities, and NMCP annual work plans aligned with National Strategic Plans. Examples of activities in LTA work plans include: revise and update NMCP organigram, revise and update all NMCP staff job descriptions, provide technical assistance in the development of National Malaria Strategic Plans, draft staff code of conduct and procedures manuals, conduct endline-user verification survey, provide technical and planning support to mass ITN distribution campaigns, assist NMCP to update malaria prevention and treatment guidelines, assist with the drafting and submission of Global Fund grant concept notes, facilitate technical working group meetings, coach and train NMCP staff to integrate private health facilities into national malaria control efforts, and support NMCP to hold regular coordination meetings with SRs. Complete example work plans can be found in Annex II.

To assess the actions and activities carried out by the LTAs, NMCP staff were asked to complete a survey. The survey was completed by 54 NMCP staff (four NMCP directors, one NMCP deputy director, and 49 NMCP staff) in the five countries. Depending on the participant's role, the survey provided a list of between 26 and 53 activities that LTAs would be expected to support, and prompted participants to indicate whether the LTA assisted, trained, advised, or coached them on the activity (See Box I for definitions of each action).



Both NMCP directors and staff in the Phase II countries reported that LTAs had provided assistance, training, advising, and coaching support. Of the support provided by LTAs, NMCP directors reported that they received mostly **assistance** (on 56% of activities) and some **coaching** support (on 22% of activities). They reported slightly less **advising** (on 16% of activities) and minimal **training** (on 6% of activities). NMCP staff reported that LTAs provided **assisting**, **advising**, and **coaching** support in almost equal measure (on 30%, 31%, and 28% of activities respectively), and just some **training** support (11%).

These results are compared against Phase I and combined Phase I and Phase II in Table 5 below:

**TABLE 5: LTA ASSISTANCE MODALITY ACCORDING TO NMCP STAFF AND DIRECTORS**

	NMCP Directors			NMCP Staff		
	Phase I	Phase II	Combined	Phase I	Phase II	Combined
Trained	2%	6%	4%	10%	11%	11%
Assisted	39%	56%	48%	22%	30%	27%
Advised	23%	16%	20%	25%	31%	29%
Coached	36%	22%	29%	43%	28%	34%

We expected NMCP directors and staff to report that LTAs provided all types of support, but expected to see more assisting and less advising than coaching. The survey results aligned with this expectation, and both staff and directors in Phase II reported more assisting and less coaching than in Phase I, where LTAs had been present for more than two years. This is displayed in Figure 1 below. To better understand the specific areas in which LTAs provided support, we divided activities listed in the survey into general themes and measured the percentage of NMCP staff who reported LTA support in those areas. We calculated the average percentages per LTA support type and support area by first looking at the average responses by support type, and then aggregating responses by category. The resulting percentages represent high-level aggregation of the total number of survey questions.

## Box 1: LTA SUPPORT DEFINITIONS

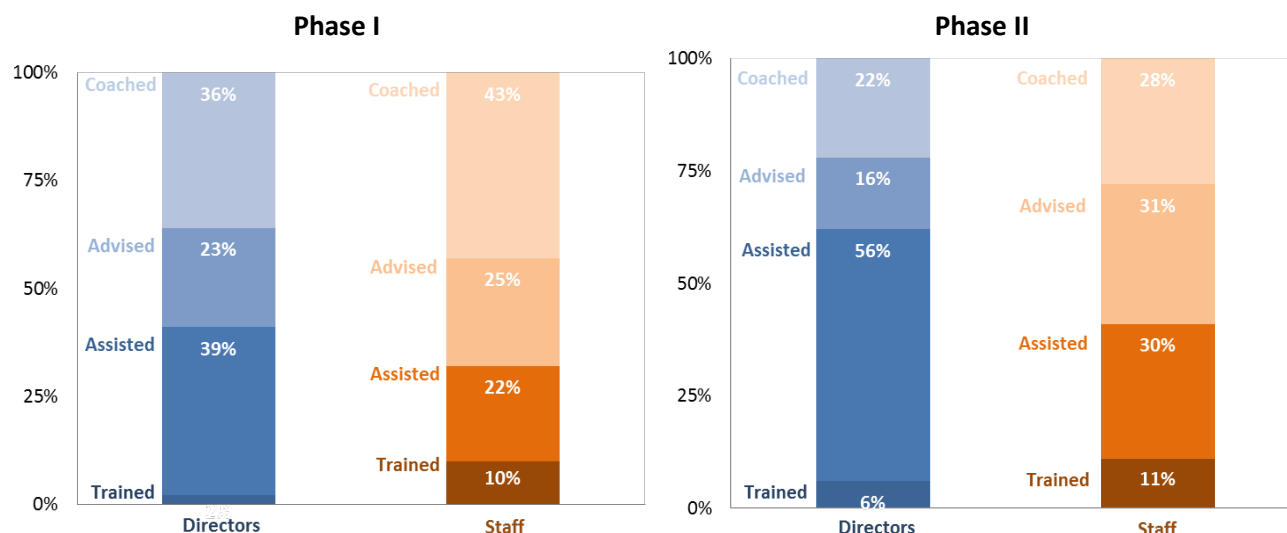
**TRAINED:** The Advisor taught us skills and approaches for carrying out an activity or task. *Example: The Advisor held a training session on how to write sections of the Global Fund concept note.*

**ASSISTED:** The Advisor was directly involved. He/she was responsible for completing some or all of the tasks related to the activity. *Example: The Advisor wrote sections of the Global Fund concept note.*

**ADVISED:** The Advisor directed, made recommendations, and reviewed our work in order to help us carry out an activity or task. *Example: The Advisor reviewed the draft Global Fund concept note and gave specific feedback and recommendations on how to improve it.*

**COACHED:** The Advisor helped us to reflect and identify next steps and/or solutions on our own in order to accomplish an action or task. *Example: The Advisor asked questions and listened to help you identify issues with the Global Fund concept note. He/she did not tell you what to do, but rather helped you to decide on your own.*

**FIGURE 1: PERCENTAGE OF ACTIVITIES SUPPORTED BY TECHNICAL ASSISTANCE MODALITY, AS REPORTED BY NMCP PERSONNEL**



Of the five NMCP directors and deputy directors surveyed, most agreed that LTAs provided **coaching** support on activities related to the national strategic plan (33% of activities) and partner coordination (28%). They reported that LTAs provided direct **assistance** mainly on the Global Fund reporting (61%) and drafting the Global Fund concept note (64%). LTA **advice** was mainly on strategies and innovations (23%) and the national strategic plan (21%) activities. Few directors reported to have received **training** from advisors: the highest was for developing and implementing strategies and innovations (14%). These results differed from Phase I results as displayed in Table 6:

**TABLE 6: ACTIVITIES SUPPORTED BY TECHNICAL ASSISTANCE MODALITY: DIRECTOR AND DEPUTY DIRECTOR ASSESSMENT OF LTA SUPPORT**

	Trained	Assisted	Advised	Coached
Phase II	Strategies and innovations (14%)	Global Fund concept note (64%)	Partner coordination (23%)	National strategic plan (33%)
Phase I	National strategic plan (10%)	National strategic plan (55%) and Governance (55%)	Monitoring and evaluations (35%)	Internal coordination (73%)

NMCP staff technical program officers (n= 26) reported that LTAs **assisted**, **advised**, and **coached** almost equally: program officers reported that they received LTA **assistance** in coordination and planning (40% of activities), **advising** on Global Fund concept note development (39%), and **coaching** in grant management (35%). Fewer program officers reported LTA **training** support: the highest was in technical areas at only 13%. In both Phase I and Phase II, program officer reported to have received LTA assistance in coordination and planning, LTA advice on Global Fund concept notes, and LTA coaching in grant management. A comparison of Phase I and Phase II results are displayed in Table 7 below:

**TABLE 7: ACTIVITIES SUPPORTED BY TECHNICAL ASSISTANCE MODALITY: PROGRAM OFFICER ASSESSMENT OF LTA SUPPORT**

	Trained	Assisted	Advised	Coached
Phase II	Technical (13%)	Coordination and planning (40%)	Global Fund concept note (39%)	Grant management (35%)
Phase I	Coordination and	Coordination and	Global Fund concept	Grant management

planning (19%)	planning (40%) and Grant management (40%)	note (44%)	(61%) and Global Fund concept note (61%)
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Of the nine M&E staff surveyed (n=9), most reported to have received mainly LTA advice and assistance. They reported receiving **advising** support for data collection (56%) and the Global Fund concept note (56%); M&E staff reported very little **training** support, with the highest in data analysis (17%). Phase I results are compared to Phase II results in Table 8 below:

**TABLE 8: ACTIVITIES SUPPORTED BY TECHNICAL ASSISTANCE MODALITY: M&E STAFF ASSESSMENT OF LTA SUPPORT**

	Trained	Assisted	Advised	Coached
Phase II	Data analysis (17%)	Global Fund concept note (52%)	Data collection (56%) and Global Fund concept note (56%)	Coordination (39%)
Phase I	Data analysis (20%)	Planning (20%)	Supportive supervision (36%)	Data collection (64%)

Of the two staff that self-identified as finance staff (n = 2), they reported that LTAs provided almost equal **assistance** and **coaching** in governance (40% of activities), and significant **advising** in coordination and planning (50%). Phase II finance staff reported to have received more equal amounts of training, assisting, advising, and coaching in each area, than Phase I finance staff, as shown in Table 9 below:

**TABLE 9: ACTIVITIES SUPPORTED BY TECHNICAL ASSISTANCE MODALITY: FINANCE STAFF ASSESSMENT OF LTA SUPPORT**

	Trained	Assisted	Advised	Coached
Phase II	Budgeting (30%)	Governance (40%)	Coordination and planning (50%)	Governance (40%) and Budgeting (40%)
Phase I	Budgeting (90%)	Grant management (67%)	Grant management (67%)	Budgeting (100%)

In Phase II, we also surveyed supply chain management staff (n=9), as there were LTAs focused primarily on building supply chain management capacity in Côte d'Ivoire, Nepal, and Niger. These staff reported to have received a balanced mix of training, assisting, advising, and coaching in each kind of activity, as displayed in Table 10 below:

**TABLE 10: PERCENTAGE OF ACTIVITIES SUPPORTED BY TECHNICAL ASSISTANCE MODALITY: SUPPLY CHAIN MANAGEMENT STAFF ASSESSMENT OF LTA SUPPORT**

	Trained %	Assisted %	Advised %	Coached %
Coordination and management	31	38	36	56
Guidelines and policies	20	27	27	23
Quantification	48	38	44	48

In the qualitative interview data, we found that NMCP staff, NMCP directors, and malaria stakeholders more frequently referenced instances of LTAs providing **assistance** and **advice**, and less frequently referenced instances of **training** and **coaching**. Interview respondents in Phase I also frequently cited instances of **assistance**, but in contrast also frequently referenced **training**. We hold that the nature of assistance and training lends itself more easily to providing specific examples than coaching, as

assistance and training are discrete forms of support, and it is easier to point to a specific date or instance. Coaching, by nature, is more informal, incremental, and layered. One NMCP Director noted the following about the LTA's coaching and advising:

*"[The LTA] poses questions that actually are meaningful to the program. About all the activities needed to be done, I mean he asks questions about what is already in place. So to me, having someone join the program with the experience he has, in all aspects of the management of the grant, I think is a big contribution to the program." (NMCP Director, Country I)*

One NMCP director referenced assisting, coaching, and advising in the following remark:

*"He helped us refine our quantification, in order to at least have the drugs, to estimate needs. We carried out our estimations of needs for all malaria control commodities - whether this is drugs, the ITNs, the SP for prevention, and all other commodities to control malaria, the [LTA] helped us. **He participated with all the teams to do this quantification of these commodities. There are also the management tools... we have a lot of difficulties managing drugs efficiently in the health facilities. So with [the LTA], we reflected on how we would organize ourselves to improve the utilization and management of drugs at the health facility level. So [the LTA] helped us draft support tools** for those drugs, including stock files that the peripheral health agents could use. So really, I think that [the LTA's] contribution in this area was important." (NMCP Director, Country H)*

In general, we expected that the support provided by LTAs would overlap, with some NMCPs requiring one form of support, and others requiring assisting, training, advising, and coaching. We found this to be the experience of NMCP staff, and frequently descriptions of LTA support often included references to several types of support. One NMCP staff described their experience in this way:

*Q: When you say he guides you, what do you mean by that?*

*R: Yes, by that I mean, even if he's not doing it himself, he shows us how to do things. He really he orients us ...about management, about supply chain, everything related to quantification, stock management, really I learn. **And even how to manage relationships with people and other partners: when to send them certain things, such as certain information, what information is useful for us, how to work with the partners. So you see, all that, I'm learning from him.** It's an experience where I'm really living each day working with him, and it's really delightful." (NMCP staff, Country H).*

## **QUESTION 2: What effect has LTA support had on individual NMCP staff capacity to carry out their job functions, coordinate internally, and address challenges?**

In the absence of objective pre- and post-measures of individual NMCP staff capacity, we measured NMCP staff confidence to fulfill their job functions, manage the Global Fund grant, and coordinate internally and externally. **All NMCP staff who completed the survey reported that their confidence in their abilities to do their jobs had increased during the LTA's tenure.** We

### **Box 2: Question 1 EMERGING QUALITATIVE THEMES**

- NMCP staff credit all forms of LTA support to improvements in their program management and technical knowledge.
- LTA support was effective because LTAs established trust with NMCP directors and teams.
- LTA support overlapped: coaching, advising, assisting, and training often took place in tandem.

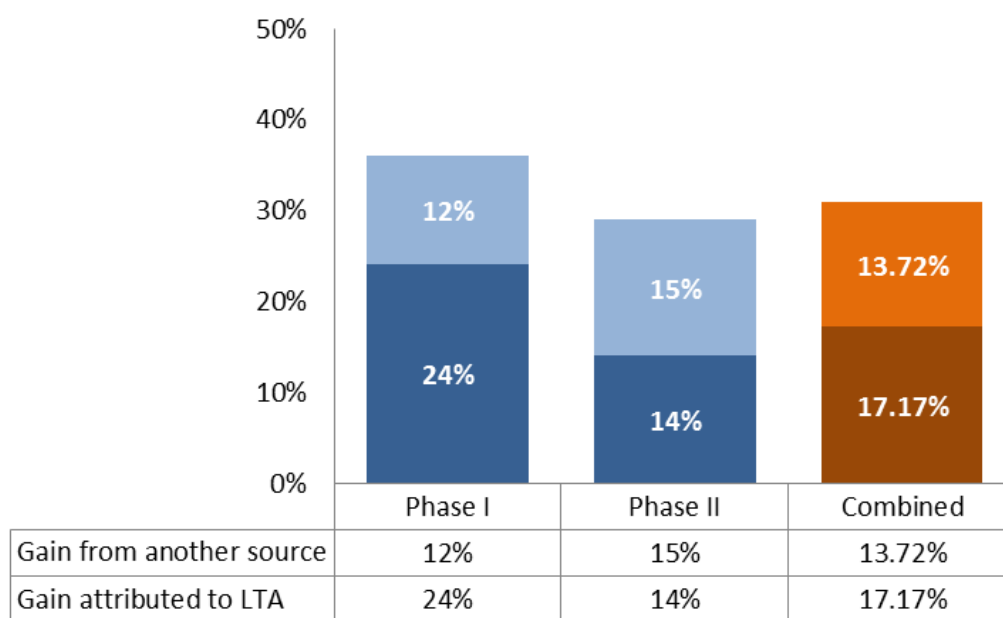
tested this by asking staff to reflect back to the period before the LTA arrived, and indicate their level of confidence at that time for a list of job functions, coordination activities, and responses to challenges. We then asked them to indicate their level of confidence now. This was done using a step ladder diagram (see Appendix II in the Phase I report), and served as a proxy-pretest. The average increase in confidence for NMCP staff in Phase II countries was **28 percentage points**. In Phase I countries, the average increase was found to be 36%, and the combined average for both phases is 31%.

We also asked staff to indicate the influence of the LTA to any reported increases in confidence, using a scale from one to three, where 1 = no influence, 2 = some influence, and 3 = significant influence. **We found that about one half of the gain in confidence (50% with 95% confidence interval lower bound at 44% and upper bound at 56%) was attributed to the influence of the LTA.** This analysis indicates that of the 28% gain in confidence, **14%** is attributed to LTA influence, while the remaining **14%** is coming from a source other than the LTA.

When we combine the Phase I and Phase II results, we find that of the 31% average increase in confidence, 55.57% is attributed to the influence of the LTA. This means that of the 31% increase in confidence, 17.17% is coming from the LTA, while 13.72% is coming from a source other than the LTA.

This result is displayed in Figure 2. The actions and skills for which NMCP staff reported the highest and lowest increases in confidence are described in Box 3.

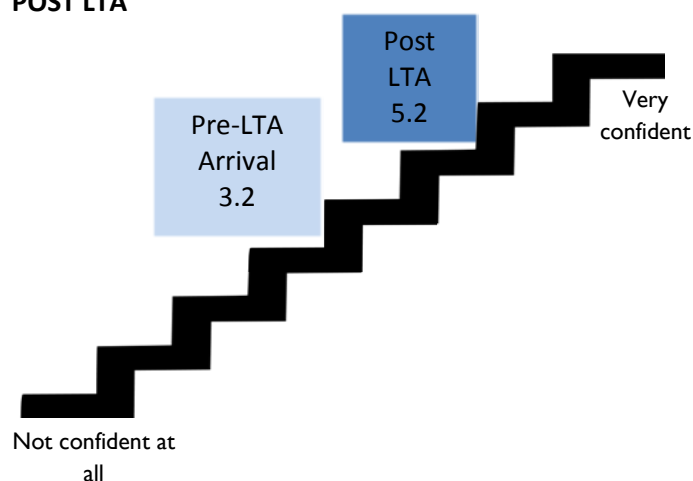
**FIGURE 2: AVERAGE GAIN IN CONFIDENCE AND ATTRIBUTION OF CONFIDENCE GAIN BY PHASE**



### *Changes in staff confidence*

To understand the average reported confidence level of NMCP staff before and after the LTA's arrival, we conducted a Wilcoxon matched pairs signed rank test. The results showed that the median confidence rating for Phase II countries before the arrival of the LTA was **3.2**, on a scale of 0 to 7. The median confidence rating after the arrival of the LTA was **5.2** (see Figure 3). This showed that Burundi and Nepal NMCP staff reported the lowest median confidence pre-LTA at 2.6 and 2.7, respectively, and

**FIGURE 3: MEDIAN NMCP STAFF CONFIDENCE PRE AND POST LTA**



Sierra Leone and Côte d'Ivoire staff both had median pre-LTA confidence of 3.8. The largest increase in median confidence is seen in Niger and Burundi (2.7), and the smallest increase in Côte d'Ivoire (1.1), as shown in Table II below.

### Box 3: NMCP STAFF CONFIDENCE

Of the tasks and actions listed, the highest average increase in confidence reported by NMCP staff was for the following skills and behaviors:

- Identify solutions for challenges
- Bring stakeholders together to discuss or address a shared challenge
- Invite participation in planning and implementation from all parties affected by your technical unit

The lowest average increase in confidence reported by NMCP staff was for the following:

- Carry out all of your job responsibilities
- Articulate the NMCP's strategy
- Describe the NMCP's structure and lines of accountability

Overall, the median rating for the post-intervention period was statistically significantly higher than the median rating for the pre-intervention period ( $z = -5.992$ ,  $p < 0.00$ ), indicating that these results are not random and suggesting that the LTA intervention is influencing increases in confidence. This was also true of all five countries individually analyzed.

The calculation of the effect size of Wilcoxon Signed-rank test is given by the formula  $r = \frac{z}{\sqrt{N}}$ , where  $N$  is the total number of the observations. Effect size,  $r$  by convention for small, medium, and large effects, is 0.1, 0.3, and 0.5. Effect size of increase in the NMCP staff and manager confidence ratings is rather large, at **0.9**.

In general, increases in median confidence ratings were larger in the Phase I countries than in Phase II countries. These results are displayed in Table II:

**TABLE 11: WILCOXON MATCHED PAIRS ANALYSIS OF MEDIAN PRE- AND POST-LTA NMCP CONFIDENCE**

	Number of observations	Median confidence rating before the intervention	Median confidence rating after the intervention	Increase in median confidence rating	Z	p-value (Prob >  z )	Effect size, r
Cameroon	8	3.5	5.2	1.7	-2.524	0.0116	0.9
Côte d'Ivoire	5	3.5	5.7	2.3	-2.023	0.0431	0.9
Guinea	8	2.4	6.3	3.9	-2.521	0.0117	0.9
Liberia	4	2.1	5.0	2.9	-1.671	0.0947	0.8
<b>All Phase I countries</b>	<b>25</b>	<b>3.1</b>	<b>5.5</b>	<b>2.4</b>	<b>-4.360</b>	<b>0.0000</b>	<b>0.9</b>
Burundi	12	2.6	5.3	2.7	-3.037	0.0024	0.9
Côte d'Ivoire	8	3.8	4.9	1.1	-2.400	0.0164	0.8
Nepal	5	2.7	4.9	2.2	-2.060	0.0394	0.9
Niger	10	2.9	5.6	2.7	-2.840	0.0019	0.9
Sierra Leone	13	3.8	5.2	1.4	-3.105	0.0019	0.9
<b>All Phase II countries</b>	<b>48</b>	<b>3.2</b>	<b>5.2</b>	<b>2.0</b>	<b>-5.992</b>	<b>0.0000</b>	<b>0.9</b>

#### *Relationships between LTA inputs and confidence*

Coefficients of correlation were calculated to measure the strength and direction of a linear relationship between LTA inputs (assisting, training, advising, and coaching data collected in Part I of the survey), overall gain in confidence, and LTA induced confidence gain. Results are displayed in Table 12:

**TABLE 12: PHASE II COEFFICIENTS OF CORRELATION FOR LTA INPUTS AND CONFIDENCE**

	LTA inputs	Overall gain in confidence	LTA induced confidence gain
LTA inputs	1.00		
Overall gain in confidence	0.51**	1.00	
LTA induced confidence gain	0.61**	0.93**	1.00

\*\*p<0.01

The Phase II results show:

- A statistically significant, strong, linear positive relationships between LTA inputs and overall gain in confidence (0.51),
- A statistically significant, strong, linear positive relationship between LTA induced confidence gain and overall gain in confidence (0.93), and
- A significant, strong, linear positive relationship between LTA inputs and LTA induced confidence gain (0.61).

When Phase I and Phase II data were combined, we found:

- A strong and statistically significant relationship between the LTA inputs and overall gain in confidence (0.94),



- A strong and statistically significant relationship between LTA inputs and LTA induced gain in confidence (0.50), and
- A medium strength relationship between LTA inputs and the overall gain in confidence (0.42).

These results are displayed in Table 13 below:

**TABLE 13: COMBINED PHASES COEFFICIENTS OF CORRELATION FOR LTA INPUTS AND CONFIDENCE**

	LTA inputs	Overall gain in confidence	LTA induced confidence gain
LTA inputs	1.00		
Overall gain in confidence	0.42**	1.00	
LTA induced confidence gain	0.50**	0.94**	1.00

\*\*p<0.01

*Inferential statistics: regression analyses*

We further analyzed the relationship between LTA inputs reported in part one of the survey, and increases in NMCP staff and director confidence reported in part two of the survey, by conducting a series of OLS regression analyses. These analyses tested the significance of the regression model and hypotheses about the relationship between the dependent variable and several independent variables. In order to reject the null hypothesis (“LTA inputs have no relationship with gains in confidence”), the significance value, Prob(F), may not be nonzero.

We tested two models for fit between the relationship between predictor variables and the NMCP self-reported increases in confidence. We began with Model 1, which used a single predictor variable: the LTA inputs (training, assisting, advising, coaching). In Model 2, we added three covariates: staff age, staff sex, and length of service at the NMCP. The Prob(F) = 0.0002 and F(1,46) value of 16.18 for LTA inputs in Model 1 and Prob(F) = 0.0057 and F(4,36) value is 4.37 for LTA inputs in Model 2, imply that LTA inputs have **a positive and statistically highly significant relationship** with self-reported increases in confidence. All four p-values are greater than the 0.05 cutoff for statistical significance. Table 14 displays these results.

**TABLE 14: PHASE II RELATIONSHIP BETWEEN TECHNICAL ASSISTANCE INPUTS AND INCREASE IN NMCP STAFF AND MANAGER CONFIDENCE**

Increase in NMCP staff and manager confidence	Model 1			Model 2		
	B	SE B	$\beta$	B	SE B	$\beta$
Training, assistance, advisory, and coaching inputs	0.44**	0.11	0.51**	0.45**	0.11	0.55**
Age				-0.38	0.39	-0.15
Sex				-7.63	4.99	-0.22
Length of service				0.12	0.42	0.04
R <sup>2</sup>	0.2602			0.3330		
F for change in R <sup>2</sup>	16.18**			4.37**		
Number of observations	48			40		
Power	0.42					

Phase I results from the same analysis were not significant and therefore could not support that the self-reported increase in confidence is associated with LTA inputs. Power for this analysis in Phase I was under-powered at 0.51<sup>2</sup>. In the Phase I report, we wrote that this implied an inadequate sample size.

In these Phase II results, we found that on average, **a percent point (1%) increase in the LTA inputs is associated with a half percentage point (0.5%) increase in self-reported gain in confidence**. These results sustain even when controlling for age, sex, and length of service. It is important to note that we see a statistically significant relationship despite not having adequate power (0.42).

To further test the relationships, we combined Phase I and Phase II data and ran the same tests. We found that In Model 1, Prob(F) = 0.0001 and F(1,72) value is 16.37, and in Model 2 Prob(F) = 0.0006 and F(4,59) value is 5.68. This shows that **LTA inputs have a positive and statistically highly significant relationship with self-reported increase in NMCP staff confidence**. On average, a percent point (1%) increase in the LTA inputs is associated with a one-third (0.333%) increase in NMCP staff confidence. Power in this analysis is 0.64.

We reviewed the qualitative data to understand how NMCP staff and partners perceive the influence of LTA inputs on staff confidence and capacity. As in Phase I, Phase II interview and focus group participants observed that the LTA support had contributed to changes in how NMCP staff coordinate with other malaria stakeholders, particularly in regards to how the NMCP communicates and coordinates malaria and Global Fund grant stakeholders. A representative from one SR noted the following:

*“I remember that with the technical assistance of [the LTA] we assisted in drafting the 2013-2017 National Strategic Plan, in addition to updating it. It was in this context that we really saw a large mobilization of partners around the NMCP through regular meetings, work retreats within the country, and even regional meetings through Roll Back Malaria. Only to say that **the NMCP, really, with [the LTA], has really been closer to partners than it had been before. So, we even saw that most of the topics discussed during the meetings, were topics that [the NMCP] had thought through.**” (Caritas, Country E)*

Other respondents reported other improvements in NMCP staff ability to identify bottlenecks and coordinate technical work at the regional level, thanks to LTA support :

*“R: [The LTA] supported us to do an End-User verification study. I believe it was a good experience, so we are even contemplating the idea of spreading it to other regions.*

*Q: And why was it a good experience?*

*R: Because it allowed us to detect the real problem at the peripheral level, which was incorrect [commodity] storage. Incorrect storage and the lack of communication between the different managers, in other words they have stocks, they don't communicate amongst themselves, and they notify the central level despite the fact that if they communicated amongst themselves, they could redeploy stock and we wouldn't have problems at the peripheral level. **So the study allowed us to really pinpoint this problem.**” (NMCP staff, Country F)*

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<sup>2</sup> Power refers to the probability that a test will find a statistically significant difference when such a difference actually exists. In other words, it is the probability that you will reject the null hypothesis when you should and thus avoid a Type II error. It is generally accepted that power should be 0.80 or greater.

NMCP staff also linked these improvements in both technical areas and in how they approached communication and coordination with other malaria stakeholders, to LTA assistance and advice. :

*“R: And even aspects linked to coordination, [the LTA] helped us in those areas.*

*Q: How?*

*R: Well, it's still management. The aspect of coordination, I told you that he helps me because, even administratively – since I was a clinician, before I came here, I didn't do a whole lot of administration at the hospital when I was there, so for things related to management and administration, truly, he really – he helped me a lot.*

*Q: What did he do with you?*

*R : For example, even letters that I wanted to send to certain partners, or even if I have problems with regards to the implementation of my activities, I come, I ask for his advice and he'll give it to me – he always gives me advice that has a positive outcome. **Even apart from the supply chain aspect...if I have problems in other areas. For example, now I have to draft a request to a partner, so I go to him for advice, or I will draft it, and then I ask him if it's good. So he will follow me and guide me with regards to that.**” (NMCP staff, Country H)*

As in Phase I, KII and FGD participants also identified changes in how NMCP staff managed and coordinated internally. This included more regular internal coordination meetings, revised procedures and handbooks, and more open interaction between the NMCP technical units. An NMCP director in one country explained:

*“The changes are visible every day, progressively, given that for example, I have the procedures manual that we have developed. That guides us a lot and it guides the staff, which is something that was not done very well in the past. Nowadays, it's done very well. This manual is new, but still, we try to adapt to it. The entire staff worked on it. This manual was created with the help of [the LTA]...**I see, for example, changes in the ways in which the different service delivery units collaborate.** Before these units each worked in their corner and each unit had no idea what the others were doing. But now, each Monday, we are required to meet with all the units and management, we hold a meeting. It's in this meeting that we try to share what we will do during the week and what has been done during the past week.” (NMCP Director, Country E)*

In this same theme, NMCP staff also referenced how their willingness and ability to collaborate and share internally had shifted. In one country, a Case Management Unit staff person said the following about how their experiences with the Supply Chain Management Unit (in a country with a Supply Chain specific LTA) had been influenced since the arrival of the LTA:

*“With [the supply chain unit], they are consistent, they share information. For example, when an email arrives, as soon as there is a change, [the LTA] will share it with everyone. The [LTA] keeps us informed. **As soon as there is a change, when there is a delivery of commodities, or even when there***

#### Box 5: Question 2 EMERGING QUALITATIVE THEMES

LTA credited for a role in:

- Improved NMCP staff capacity to coordinate and communicate with other malaria stakeholders
- Greater sharing and collaboration between NMCP staff
- Introducing tools that help NMCP staff to problem solve

*is distribution happening at the district level, he shares the e-mail with everyone. We are informed and kept abreast of each process.” (NMCP Case Management staff, Country H)*

The most striking difference between Phase I and Phase II interview and focus group data with NMCP staff and directors as related to changes in staff confidence was the lack of NMCP staff self-identifying changes in their own attitudes and behaviors. NMCP staff in Phase I countries far more frequently described ways in which their own communication, problem-solving, and coordination practices have changed, and how those changes have influenced the NMCP work climate. In Phase II, we observed NMCP partners referencing this kind of personal change among NMCP staff, as described by one partner:

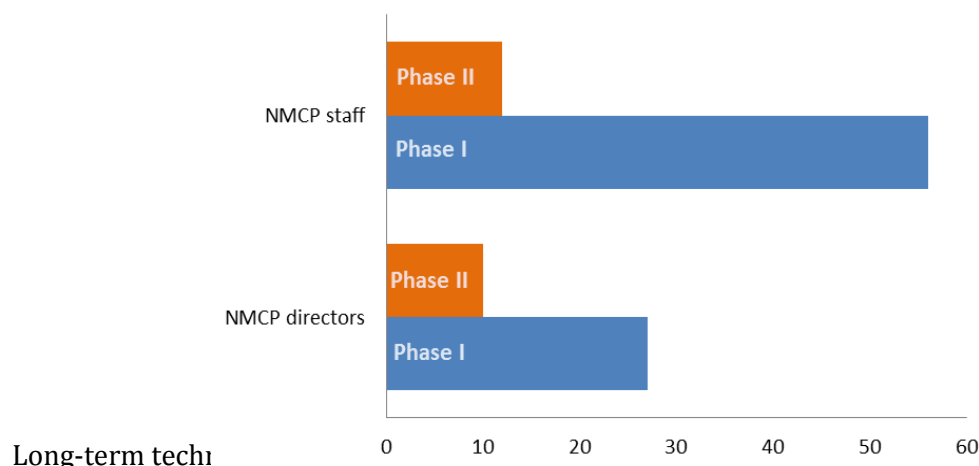
*“There is really a change. I haven’t seen new people join. The same heads of service for a long time are still there. I will give a straightforward example: the mosquito net distribution campaign. Today, when you go there, it’s really the prevention unit that takes the lead. They plan everything, they carry out everything, they only ask for our opinions. And as advisors, we have a look, and we share our inputs, but that’s not how it was done in the first campaign. We had to be far more present to accompany the entire process. So there is really a degree of ownership of this technical support in many fields. I think that in general [the LTA’s] ongoing support to the NMCP has contributed to the transformation of the people themselves. Like I said, these are the same people. I truly haven’t seen any new people. So I think that this internal transformation evidently is due to the presence of a transformational element within the NMCP.” (UNICEF, Country F)*

One possible explanation for this absence of references to personal change among the NMCP staff themselves, is the lack of the Leadership Development Program Plus (LDP+) in Phase II countries. In Phase I, a sizeable number of participants credited their participation in an LDP+ -- which were introduced and facilitated by the LTAs in those countries -- with having helped them to improve teamwork, initiative, attitudes, and problem-solving processes.

### **QUESTION 3: What effect has LTA support had on the NMCP’s capacity to coordinate, lead, and manage the implementation of the Global Fund grant, according to NMCP staff?**

As in Phase I, **NMCP staff and directors in Phase II generally agreed that the LTA support had increased the NMCP’s capacity as an organization to coordinate, lead, and implement the Global Fund grants.** However, NMCP staff reference to changes in Global Fund grant management were far less frequent in Phase II than in Phase I, although NMCP director references were about the same. See Figure 4.

**FIGURE 4: NUMBER OF REFERENCES TO CHANGES IN GLOBAL FUND GRANT MANAGEMENT BY NMCP DIRECTORS AND STAFF INTERVIEWS AND FOCUS GROUPS**



NMCP staff who linked changes in Global Fund grant management to LTA support described how LTA assistance had equipped them to respond to Global Fund requests and develop governing documents that helped them to better manage Global Fund grant resources. A FGD participant in one country gave the following example:

*“He supported us to self-assess before the Global Fund came to evaluate us, with the OCAT. So the Global Fund came to assess us and we had already self-assessed. So we had been prepared to make changes and gain ground with the Global Fund. [The LTA] invested himself personally to support our program. And after the OCAT, he also helped us a lot in the context of the Global Fund, like the others have mentioned, with the important documents like the risk mapping, with the implementation of the grant. He also helped us with our procedures manual because here there was no procedures manual. It isn’t to say that all the results can be attributed to him, but still he brought his assistance to help the team to be at the place where you can see us now.” (NMCP staff, Country E)*

NMCP staff also credited their improved understanding of Global Fund guidelines and procedures, thanks to guidance from the LTA, as having impacted grant spending and activity implementation. One NMCP staff member remarked:

*“Before [the two LTAs] came, there were no Global Fund staff and no [LTAs] so we were able to expense only \$300,000 USD per trimester. After they came, they helped create a very positive environment which showed that the grant is properly implemented across the country. For example, [the LTA] who is working on commodities has very good experience. The [LTAs] help us to understand the Global Fund grant, the deadlines, the process, so many things. They pass their knowledge to us. They are really working on the ground, they’re very experienced, and they know each and every aspect of the Global Fund procurement procedures. That is big for us. We are government staff, right? Knowing and understanding this situation motivates us to implement the grant.” (NMCP staff, Country G)*

As in Phase I countries, changes to NMCP capacity to coordinate national malaria stakeholders was also widely cited in NMCP focus group discussions and NMCP directors. An NMCP Director in one country explained:

*“What has changed now is the statutory meetings, in other words between the Program and the Program partners that intervene in malaria, there are meetings that are held regularly, quarterly meetings. Up until now, there have been no quarterly meetings that have been missed, whereas before the arrival of [the LTA] ... I knew that these meetings were not being held as planned. But at the moment, even if you conduct a personal inquiry, I think there has only been one meeting that we have missed, that we didn’t do, among the statutory meetings that we hold with the partners to evaluate the malaria interventions. There has been an improvement.” (NMCP Director, Country E)*

NMCP staff linked these changes to improved activity

#### Box 6: Question 3 EMERGING QUALITATIVE THEMES

LTA credited for a role in:

- Improved understanding of Global Fund rules, regulations, and requirements
- Improved planning through annual, quarterly, and monthly work plans
- Improved grant ratings
- Improved engagement with districts, health facilities, and other partners, resulting in improved data collection activity implementation, and grant performance

implementation, as explained by one NMCP staff:

*“There is a new annual planning for the activities. That’s to say that now for all the planned activities, there is a workshops for the activities that are in the NFM, we do the planning, and we assign responsibility. This allows us to monitor the implementation of activities within the time frame, and everyone’s responsibilities. I think that’s really important. And, another workshop that I found interesting was about spending the budget, where they brought all the NMCP staff and CRS staff, they all came together to look at spending. So we are being told how much we’ve consumed, what lines have not been spent down, and what we should do to make sure we spend down. I think that if you understand that you have the funds and what you should to do spend them, it still allows you to tell me that I have to start activities in order to spend down. I found it to be a good workshop that helped us to organize. **So the fact that we’re doing that annual planning, that allows everyone to take charge of the activities and to know which activities have been retained and in what amount of time they must be carried out, and by whom.**” (NMCP staff, Country H)*

LTA support was also cited to have influenced NMCP’s ability to manage malaria commodities and complete quantification exercises -- a key component of grant implementation:

*“With [the LTA’s] arrival, he placed a special emphasis on the management of the supply chain, and we are in the process of achieving a number of results at the supply chain level, because no matter what we say, the availability of drugs in the field is progressively getting better. **We experience far fewer stock shortages or even – oversupply of stock in certain regions. So since he has joined, we have somewhat refined the continued availability of commodities and of drugs in the field.**” (NMCP Deputy Director, Country H)*

As in Phase I, there was also agreement among NMCP staff and directors that LTAs played an important role in helping them draft and negotiate Global Fund concept notes and to update and revise National Strategic Plans:

*“So each time [the country] needs to prepare its applications for the Global Fund, [the LTA] actively participates in the development of those applications. So we do the drafting and the development work with him, both in [the capital city] and when we do our retreats outside of [the capital]... When we have to clarify the programmed activities, because once the grant has been sent to the Global Fund, once it has been accepted by the Global Fund, the Global Fund asks us to clarify certain aspects. [the LTA] also participates in the response we formulate for the Global Fund regarding such clarifications. **So you can see that, really, [the LTA’s] participation in the malaria control Program is really of great importance, and I, I’m advocating for us to keep this long-term assistance.**” (NMCP Deputy Director, Country H)*

*[The LTA] arrived on October 8th and he found us in the field already failing at our first submission because the first submission was on October 15<sup>th</sup>, and it had been difficult to coordinate among us to present something meaningful. And he arrived, and he started to work within the team and then, when we left the field, when we submitted our proposal, he then prepared us to face the management of the grant by preparing the OCAT and then the [Global Fund] OCAT... **That allowed us to really be able to face the management of the grant. I can say that it changed many things. First, we felt more in charge. The LTA taught us through the negotiation process. We learned how to collaborate, speak with the funder, how to negotiate, how to properly record things, how to properly present things, when one should answer, when we have to respond to the Global Fund’s messages, and not wait. So he taught us the tricks to please the Global Fund.** In other words, for the Global Fund to see us as being able to manage the grant. Yes, that’s the change. ...The [LTA] really, he helped us a lot, a lot.” (NMCP Director, Country E)*

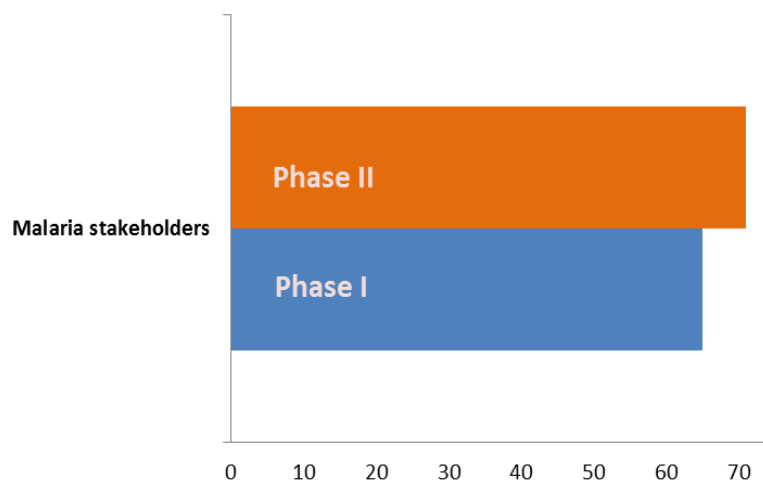


#### QUESTION 4: What effect has LTA support had on the capacity of the NMCP to coordinate and regulate performance of Global Fund grants, according to NMCP partners?

We use the term “NMCP partners” to describe national-level malaria control stakeholders. This included Global Fund malaria grant principal and sub recipients, country-level bodies coordinating procurement and distribution of commodities, WHO, UNICEF, other USG-funded programs involved in malaria control, the Global Fund Country Coordinating Mechanism, and USAID mission staff. These key stakeholders perceived that LTAs have had a positive effect on the capacity of NMCPs to manage and implement Global Fund grants, and generally agreed that LTA support has contributed to capacity improvements.

Unlike in response from NMCP staff and directors, malaria stakeholders interviewed in Phase I and

**FIGURE 5: NUMBER OF REFERENCES TO CHANGES IN GLOBAL FUND GRANT MANAGEMENT BY MALARIA STAKEHOLDERS IN KII**



Phase II referenced changes in Global Fund grant management a similar number of times. See Figure 5.

NMCP partners observed that LTAs have helped to improve NMCPs’ ability and motivation to proactively lead and coordinate national malaria control efforts, including Global Fund grant implementation.

*“I think that both internally and externally I’ve seen a great improvement in terms of collaboration and expansion. You know, for instance, when we went for the annual review before, I can tell you that it wasn’t that well organized. In 2014 there was a huge improvement, in 2015 huge improvement, now in 2016, you see more of the partners coming in, etc., etc. And when I get to the NMCP, I also see that kind of motivation. Previously LMG was just sort of a small part of it. But now I see it very integrated. And moving forward as the project supports more activities, I see that [the LTA] is very innovative and I see that he’s taking the collaboration with the malaria program in country to another level.”* (Fiscal Agent, Country I)

*“So, yes, the arrival of [the LTA] the NMCP has really held regular coordination meetings with all malaria stakeholders which has enabled parties to keep abreast of who does what.”* (Sub-recipient, Country E)

NMCP partners in Phase II also observed that LTAs played an active role in coordinating between



### Box 7: Question 4 EMERGING QUALITATIVE THEMES

LTA credited for a role in:

- Improved NMCP organizational behaviour
- Improved NMCP Global Fund grant management
- Improved coordination and communication among national malaria stakeholders
- Providing appropriate technical assistance given the needs of NMCPs

partners, and in coordinating communication and cooperation between the NMCP and the Global Fund. Likewise, NMCP partners observed that LTA were involved in developing Global Fund grant applications, implementing grant activities, and improving overall quality of grant deliverables. In one country, the Global Fund grant sub-recipient noted that they had also benefitted from the LTA's assistance:

*"There were these very important matters to deal with to handle the [Global Fund grant] negotiation. I remember that the [LTA] even came over to provide guidance. He even worked beyond the scope of the NMCP because we had only one grant document to advocate for. So he supported all of us on the NMCP side, on the CARITAS side. The [LTA] was here very frequently, here at [our organization]. **So that's to say that, we too, indirectly, although directly, we benefited from the technical assistance.**" (Sub-recipient, Country E)*

The importance of the LTAs' support in these areas was noted by USAID and Global Fund staff interviewed. Both USAID and Global Fund staff interviewed felt that they had greater access to the NMCPs and were more informed of issues and successes. These sentiments were similar to Phase I. In several instances, these partners stated their wish that similar assistance be provided to the other disease programs:

*"All I can say is, I know that [the LTA] helped them a lot. This technical assistance strengthened the NMCP, even the Global Fund says that. They've recognized that now the concept notes are done on time, the product orders are also done on time. So, really I sense that [the LTA] had a hand in - how can I say it? **[The LTA] really strengthened the capacity of the NMCP to manage the supply chain, the editing of concept notes.** Really, his contribution is visible, that part is real. That is the reason the NMCP again asked USAID to prolong this technical assistance. (USAID, Country H)*

*"...**but [the LTA] in [this country] is someone that we would wish to replicate both for TB and for HIV for being a real strong force in quietly achieving the change that is needed to completely get a grip on malaria in [the country].** But doing it with emotional intelligence so that he's actually helping people feel very strong about what they are doing as a team and therefore he's staying more in the background.... But the way that he works at the country level is with so much respect for national partners, and he continues to reinforce that also in our communication with him in a very nice way, very constructive way, that he's just a win-win. **He's just a complete win-win for the malaria program. And as I said his way of working—we feel now that the malaria program is really on a good footing and we can rely on [the LTA] to troubleshoot or let us know if something isn't working.**" (Global Fund, Country G)*

### QUESTION 5: Has NMCP capacity to implement the national malaria control strategy improved during the LTA's tenure?

To understand if LTAs' inputs have a statistically significant relationship with changes in NMCP staff confidence, and if staff confidence has a relationship with Global Fund grant performance, we examined the pathways between LTA inputs, improvements in staff confidence, and indicators for Global Fund grant performance. Our measures for grant performance included the grant disbursement rate, burn rate, and grant performance indicator achievement rate. The small number of observations during the

LTA intervention period as compared to the pre-LTA period is notable. A summary of descriptive statistics of all eight countries (mean, standard deviation, and 95% confidence interval) is shown in Table 15 below:

**TABLE 15: GRANT PERFORMANCE MEASURE DESCRIPTIVE STATISTICS**

	Observations	Mean	Standard Deviation	Confidence Interval
Disbursement rate (%), pre-LTA	473	131	300	104,158
Disbursement rate (%), LTA period	107	87	158	56,117
Burn rate (%), pre-LTA	321	43	129	29,58
Burn rate (%), LTA period	60	43	91	19,66
Grant performance indicators (%), pre-LTA	1110	89	88	83,94
Grant performance indicators (%), LTA period	153	81	49	73,89

*Associations between LTA inputs and staff confidence, and grant outcomes*

To test for linear associations, coefficients of correlation were calculated for the LTA inputs, overall gain in confidence, LTA induced gain in confidence, disbursement rate, burn rate, and grant performance indicator achievement rate. As discussed under Question 2, there is a strong and statistically significant correlation between LTA inputs and overall gains in confidence, between LTA inputs and LTA attributed gains in confidence, and between LTA attributed gains in confidence and overall gains in confidence. The coefficients of correlation analyses of LTA inputs and confidence gains for grant performance measures showed:

- No statistically significant relationship between the LTA inputs and grant disbursement rate, grant burn rate, and grant performance indicators
- No statistically significant relationship between LTA attributed gains in confidence and grant disbursement rate, grant burn rate, and grant performance indicators
- No statically significant relationship between overall gain in confidence and grant burn rate and grant performance indicators
- A negative relationship between overall gain in confidence and disbursement rate

These results are displayed in Table 16 below:

**TABLE 16: COEFFICIENTS OF CORRELATION**

	LTA inputs	Overall gain in confidence	LTA induced confidence gain	Disbursement rate	Burn rate	Grant perf. indicators
LTA inputs	1.00					
Overall gain in confidence	0.51**	1.00				
LTA induced confidence gain	0.61**	0.93**	1.00			
Disbursement rate	-0.514	-0.3198*	-0.2291	1.00		
Burn rate	-0.1801	0.0856	0.0932	0.1344	1.00	
Grant performance indicators	-0.1244	0.0515	0.0033	0.4180*	0.8844**	1.00

\*p<0.05 and \*\*p<0.01

**We expected to see but did not see correlation of LTA inputs with the other variables further along the causal chain, like gain in confidence, disbursement rate, burn rate, and grant performance.**

As expected and as in Phase I, we found a statistically significant and strong correlation between burn rate and grant performance. We also saw a statistically significant, positive relationship between disbursement rate and grant performance indicators. In addition, and as in Phase I, disbursement rate has a statistically significant negative correlation with overall staff gain in confidence.

The results of these analyses are interesting in that they reveal no correlation between the LTA inputs and grant performance measures. Even when combining Phase I and Phase II data, we still see no statistically significant, positive relationship between LTA inputs or staff confidence and grant performance measures. In fact, the combined data shows a small, statistically significant, but negative relationship between disbursement rate and overall gain in confidence (-0.35), and disbursement rate and LTA induced gain in confidence (-0.27). We also see a statistically significant, but small negative relationship between LTA inputs and grant burn rate (-0.24). These results are displayed in Table 17.

**TABLE 17: CORRELATION RESULTS FOR ALL PHASES**

	Phase I	Phase II	Combined
LTA inputs and disbursement rate	null	null	null
LTA inputs and burn rate	null	null	-
LTA inputs and grant performance indicators	null	null	null
Overall confidence and disbursement rate	-	-	-
Overall confidence and burn rate	+	null	null
Overall confidence and grant performance indicators	+	null	null
LTA attributed confidence and disbursement rate	-	null	-
LTA attributed confidence and burn rate	+	null	null
LTA attributed confidence and grant performance indicators	+	null	null
Disbursement rate and burn rate	-	null	null
Disbursement rate and grant performance indicators	null	+	null
Burn rate and grant performance indicators	+	+	+

In the Phase I report, we suggested that the strong negative correlation between confidence and disbursement rate could be due to limitations of grant disbursement as a measure of grant performance. Reviewing the correlation results from both phases and combined data show that none of the correlations that include disbursement rate are as we would expect. When data are combined, we only find a significant, positive relationship between burn rate and grant performance indicators. With the Phase I and Phase II data analyzed separately, it is possible that the sample sizes are not sufficient; however, the combined analysis size should be adequate for showing correlation when it exists.

#### *Associations between inputs and grant outcomes: regression analyses*

To further test the associations between LTA inputs and NMCP staff confidence and grant performance outcomes, we ran a series of OLS regression analyses. The results of Model 1 analyses, testing just the relationship between LTA inputs and self-reported increase in confidence with grant performance is displayed in Table 18. The results of Model 2, which include the covariates of NMCP staff age, sex, and length of service, are displayed in Table 19 on the following page.

**TABLE 18: PHASE II OLS REGRESSION ANALYSES, MODEL 1**

	Independent variable	Dependent	Reject null hypothesis? (Model significant?)	Relationship? (Effect)	Adequately powered? ( $>0.80$ )
1	LTA inputs	Disbursement rate	No $Prob(F) = 0.6831$	No ( $\beta = 0.05$ )	No (0.09)
2		Burn rate	No $Prob(F) = 0.8149$	No ( $\beta = 0.03$ )	Yes (0.99)
3		Grant performance indicators	No $Prob(F) = 0.9454$	No ( $\beta = 0.01$ )	Yes (0.87)
4	Self-reported increase in confidence	Disbursement rate	<b>Yes</b> $Prob(F) = 0.0267$	Yes, negative ( $\beta = -0.31^*$ )	No (0.11)
5		Burn rate	No $Prob(F) = 0.6143$	No ( $\beta = 0.08$ )	Yes (0.98)
6		Grant performance indicators	No $Prob(F) = 0.7307$	No ( $\beta = -0.07$ )	Yes (0.89)

$\beta$  is the standardized coefficient. When  $\beta = 0$  there is no relationship between the variables

\* $p < 0.05$  and \*\* $p < 0.01$

**TABLE 19: PHASE II OLS REGRESSION ANALYSES, MODEL 2**

	Independent variable	Covariates	Dependent	Reject null hypothesis? <i>(Model significant?)</i>	Relationship? <i>(Effect)</i>
1	LTA inputs	Age, sex, length of service	Disbursement rate	No <i>Prob(F) = 0.9285</i>	No ( $\beta = 0.12$ )
2			Burn rate	Yes <i>Prob(F) = 0.0012</i>	No ( $\beta = -0.16$ ) <i>Small positive association with female sex</i> ( $\beta = 0.17^{**}$ )
3			Grant performance indicators	Yes <i>Prob(F) = 0.0317</i>	No ( $\beta = 0.08$ )
4	Self-reported increase in confidence		Disbursement rate	No <i>Prob(F) = 0.5576</i>	No ( $\beta = -0.28$ )
5			Burn rate	Yes <i>Prob(F) = 0.0029</i>	No ( $\beta = 0.00$ ) <i>Small negative association with female sex</i> ( $\beta = -0.36^{*}$ ) <i>Medium positive association with length of service</i> ( $\beta = 0.42^{*}$ )
6			Grant performance indicators	Yes <i>Prob(F) = 0.0328</i>	No ( $\beta = -0.23$ )

$\beta$  is the standardized coefficient. When  $\beta = 0$  there is no relationship between the variables

\* $p < 0.05$  and \*\* $p < 0.01$

**LTA inputs, staff confidence, and grant performance:** For analyses 1-3 in Model 1, we were unable to reject the null hypotheses and saw no statistically significant relationship between the LTA inputs and the grant performance outcome variables. In analysis 4 we were able to reject the null hypothesis, but

the relationship we see between self-reported increase in confidence and disbursement rate is negative. In Model 2, we are able to reject the null hypothesis in analyses 2, 3, 5, and 6; however, the relationship we see is between covariates and grant outcomes, not between the LTA inputs or confidence changes. From these results, we cannot confidently associate the support provided by the LTA with any positive changes in grant performance – meaning the results do not show a direct link between LTA inputs and outcomes further along the conceptual framework. **When we combined Phase I and Phase II data, we still do not find associations between LTA inputs or increases in confidence and grant outcomes**, as shown in Table 20 below:

**TABLE 20: OLS REGRESSION ANALYSES RESULTS**

		Phase I	Phase II	Combined
LTA inputs	Disbursement rate	No	No	No
	Burn rate	No	No	No
	Performance indicators	No	No	No
Self-reported increase in confidence	Disbursement rate	Yes, negative	No	No
	Burn rate	Yes, small positive	No	No
	Performance indicators	Yes, small positive	No	No

We do not see the relationship between staff confidence and grant outcome measures, as we did in Phase I. There are two possible explanations: LTAs in Phase II have been in place (the intervention period) for a shorter period of time, and therefore we cannot expect to see an impact on grant outcomes. Or, because of the shorter time period, the data available for burn rate and performance indicators is too sparse to measure improvements.

***Difference-in-differences regression results:*** We also conducted difference-in-differences regression analysis using three predictor variables: intervention (LTA), post, and intervention\*post. This analysis compared outcomes in disbursement rate, burn rate, grant performance indicators, grant rating, and programmatic rating between the five countries in Phase II that had received LTA support, and nine other countries that did not receive LTA support (Bangladesh, Benin, Bhutan, Burkina Faso, Central African Republic, Chad, Mali, Myanmar, and Togo). On average, the intervention (LTA) had no impact on disbursement rate, burn rate, or programmatic rating.

These analyses showed that the intervention is associated with a **decrease** in grant performance indicators and grant rating. This could be due to several reasons: the short duration of the LTA intervention period, and sparse grant performance indicator and grant rating data points, especially for intervention countries.

Despite these results, **we found a statistically significant rising secular trend of improving grant performance indicators, grant rating, and programmatic rating, over the past 10 years**. This tells us that on the whole, grant rating and programmatic ratings are improving, but with the current data we cannot attribute those improvements to the presence of LTA.

## Discussion

While the ongoing assistance, training, advising, and coaching provided by LTA are noted by NMCP staff and key NMCP partners as having influenced both individual and organizational skills and behaviors, leading to improved management of Global Fund malaria grants, we did not find a direct, statistically significant relationship between LTA support or staff confidence changes and grant outcomes. Unlike in Phase I, where we saw a small positive relationship between NMCP staff confidence changes and some grant performance indicators, in both the Phase II and combined phase analyses, we saw no such relationships. In the Phase I report, we posited that this incongruence between qualitative and

quantitative findings could be due to an inadequate sample size. However, with the inclusion of Phase II data, the sample size is adequate to detect a relationship if one exists.

In light of this, other possible explanations include:

1. **Other intervening variables were not measured.** It is possible that other intermediate variables should be included in the pathway from LTA inputs, to staff confidence, to Global Fund grant outcomes. This means that the link is not as direct as tested in this assessment, and that measurements of staff confidence are not enough to make a significant difference in grant performance outcomes. This indicates that it may be possible to find more significant links were we able to measure actual changes in staff and NMCP behavior. In order to measure these changes, more comprehensive monitoring and evaluation of changes in staff behavior (through baseline assessments of staff) throughout the tenure of the LTA would be needed.
2. **Measures of grant performance are inappropriate.** As discussed in the limitations section, we anticipated that our measures of grant performance outcomes (burn rate, disbursement rate, and grant performance indicators) might not be adequate measures of grant performance. Our analyses further confirmed this; particularly when we failed to see a positive relationship between grant disbursement rates and burn rates, or disbursement rates and performance indicator achievement rates.

Meanwhile, our qualitative research and descriptive analyses suggest a relationship between staff confidence and improved NMCP organizational capacity to implement and manage grants successfully. Participants attribute the LTA inputs to their increase in confidence, and in Phase II our statistical tests showed this correlation. This allows us to assume that the best explanation for not seeing a correlation between LTA inputs and staff confidence in Phase I was the sample size, and not the survey instrument or other intervening variables.

While the qualitative findings confirmed that NMCP staff, NMCP directors, and malaria stakeholders perceive the LTA support to have contributed to improved organizational effectiveness in both phases, we found some key differences between Phase I and Phase II. Most notably:

- **NMCP staff references to personal change.** NMCP staff in Phase I frequently referenced changes to their own perspectives, attitudes, and behaviors. These changes were often mentioned in the context of their experience completing the LDP+. In Phase II, staff referenced learning, but in terms of learning technical skills from the LTA (Global Fund grant requirements and procedures, quantification, commodity tracking, etc.). While NMCP staff in some Phase II countries talked about how the LTA's support had helped them to better communicate with the Global Fund, other NMCP units, and malaria partners, we rarely heard staff describe their experience with the LTA's in the way staff in Phase I did:

*"With the LDP+, we worked in teams, and people were able to express themselves for the first time. **The LDP+ process prompted people to identify problems and their own solutions and then propose them to the leadership.** Not every proposal was accepted, but [the LTA] has encouraged teams to go ahead and keep proposing their own solutions anyways, because some will be accepted and some will not, but it's worth it to keep trying. **As a result, staff are showing more initiative – this program has psychologically changed staff, and their attitudes and habits have changed.** We are better at planning ahead instead of responding to immediate problems."* (NMCP director, Country B)

- **NMCP staff references to improved human resources management.** In Phase I, we frequently heard staff and directors describe the LTA's role in helping NMCPs to revise

organigrams, job descriptions, personnel manuals, and staff performance evaluation processes. In Phase I, FGDs staff linked these changes to improved functioning of the NMCP, and to their own improved understanding of the role and responsibilities within the NMCP. With the exception of Burundi, where the LTA helped to create a new grant management unit within the NMCP, we seldom heard NMCP staff refer to changes in human resources management. Two examples from Phase I include:

*“All of this contributed to the fact that everyone understands what they should be doing. Each person, each week, is able to plan their activities. **That means that now each unit has weekly meetings. This means that at the beginning of each week, everyone already knows what is expected from then until the end of the week.**”*(NMCP staff, Country B)

*“And so [the LTA] enabled us to put in place these job description documents and these allowed each person to understand what they do here—to see their responsibility, to see and also know their contribution to the system.”* (NMCP director, Country C)

We hypothesize that these differences may be due to differences in tenure in Phase I and Phase II LTAs. More time working with and alongside NMCPs may enable LTAs to introduce performance improvement initiatives like the LDP+, as well as institutionalize changes in NMCP organizational behavior.

In the following sections, we discuss the ways in which the external context, internal context, and attributes of the LTA intervention may have either supported or inhibited the capacity of NMCPs to coordinate, lead, and manage malaria control efforts. Findings in these areas were very similar between Phase I and Phase II countries.

## External Context

In this assessment, external context refers to anything in the NMCP's external environment that contributes to or impedes the NMCP's ability to fulfill its function of coordinating national malaria control efforts and implementing the malaria grant. This specifically includes the governance structure (ministry of health, grant funding structure) in which the NMCP resides, resources (financial, material, technical), and events.

NMCPs in all countries are situated within the national ministry of health. The specific MOH and other **government structures** for approval for fund disbursement, introduction of new guidelines and policies, and human resource management, influence the speed at which NMCPs can plan and implement malaria control activities. In several countries there are multiple levels of authorization required before grant funding is given to the NMCP, which can delay activity implementation. Delays in fund disbursements were attributed at times to the Global Fund and at other times to the ministry of health. Regardless of the source, participants agreed that disbursement delays are not only disruptive to activity implementation, but also to overall management of the grant. As NMCPs sit under ministries of health, their decision-making power and authority to move forward with activities is at times limited, and activities must be coordinated with other health priorities in the country.

NMCPs also function within the **Global Fund grant making and management structure**, which can also influence timelines and activity implementation. Actors within these structures include the Global Fund country portfolio team, the Country Coordinating Mechanism, PRs, SRs, the other two Global Fund disease programs (HIV/AIDS and tuberculosis), autonomous or semi-autonomous



procurement agencies, Fiscal Agents, and in some countries the Program Coordinating Unit. NMCPs must collaborate closely with these actors to effectively manage and implement grants; however, they have limited authority to address or resolve issues with other actors. As in Phase I, Phase II FGD and KII participants cited challenges in this area. For example, NMCP staff described how the process of signing the grant agreement, finalizing agreements with vendors, and issuing payments slowed down implementation of grant activities, and therefore overall burn rates.

**Malaria commodity procurement mechanisms** are at the nexus of government and grant management structure challenges. Procurement of malaria prevention and treatment drugs and commodities make up the largest chunk of grant spending. Depending on the country, procurement is managed by national medical stores, semi-autonomous national procurement services, or sometimes by UN agencies. While the NMCP as PR leads coordination of the procurement process, it does not procure itself. Delays may occur at many different levels of the procurement process, and the NMCP's authority to resolve these delays can be quite limited, which in turn means that grant burn/absorption rates can be strongly impacted. This was true in Phase I and Phase II.

**Insufficient financial resources** are also a barrier to the ability of NMCPs to implement their national malaria strategies. A country's ability to pay staff well and on time -- both NMCP staff and staff across the health system -- impacts motivation and the quality of work. This can have a particularly detrimental effect at the district and facility levels, where malaria prevention and treatment take place. NMCP staff and partners pointed out that those aspects of the health system that must be funded by national governments, but on which successful implementation of the grant depends--such as health information systems and logistics management information systems--are often under resourced.

**External events** also influence the coordination and implementation of malaria activities. During the tenure of the LTA in Burundi, the country experienced political upheavals that resulted in serious security concerns, as well as a malaria epidemic in parts of the country, which resulted in delays as well as reprogrammed grant spending. In Sierra Leone, NMCP partners and staff cited the lingering effects of the 2014/2015 Ebola outbreak -- during which all NMCP staff were deployed to districts as part of the response effort -- as an ongoing challenge. In Niger, security threats in large areas require the NMCP and PR to reprogram and reschedule grant activities, which delays spending.

## Internal Context

The internal context refers to the internal environment that could affect an NMCP's ability to fulfill its function. We specifically looked at the internal NMCP culture and work climate, resources and support available, and NMCP human resources structure and staffing.

Unlike in Phase I, we did not encounter the same volume of references to changes in NMCP **work climate** in Phase II. We expected that **internal resources**, such as equipment, office space, materials, and/or technology, would be largely noted as either a barrier or facilitator for NMCP work; however, like Phase I, this was not the case.

While material and other resources were not generally seen to be affecting the capacity of the NMCP to fulfill its function, interview and focus group participants emphasized **staffing and human resources issues** as barriers to full capacity. As in Phase I, NMCP directors and partners observed that there is low incentive to invest in staff development when staff turnover is high, and government-hired staff can be reassigned to other programs and departments with little warning. Since NMCPs are situated within the government, human resources are managed by a centralized human resources unit in the ministry. This can mean that NMCP directors have little to no authority to fire or replace underperforming staff, and also that staff are unmotivated to excel when their performance is not tied to job advancement.

NMCP staff and partners also cited lack of qualified NMCP personnel (particularly in the areas of pharmacy, laboratory, and supply chain) as a barrier to quality program implementation.

## Intervention Attributes

The intervention attributes refer to the specifics of the intervention itself that can affect how successfully or unsuccessfully it is able to achieve intended results. Here, intervention attributes refer to any attribute of the LTA's support that NMCP staff and NMCP partners used to conclude the appropriateness and usefulness of the support. This would include the personal knowledge and behavior of the LTA, the duration of time the LTA was present, and the specific approaches and tools the LTA used to strengthen NMCP staff capacity.

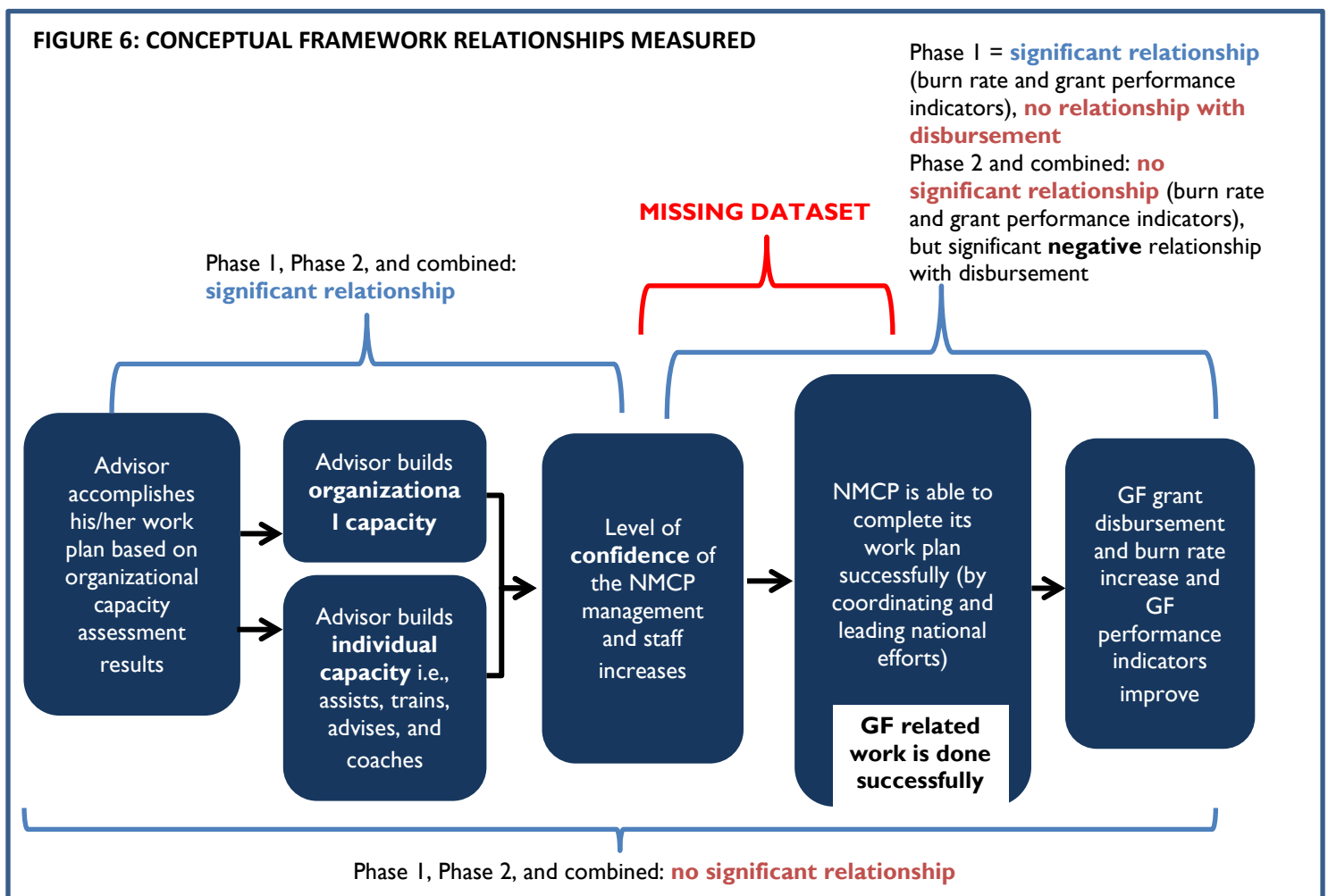
As in Phase I, we found that **the knowledge and behavior of each individual LTA** was felt to be appropriate for each NMCP's needs. The experiences and profile of each LTA had been carefully considered against the needs of each NMCP during recruitment. Interview and focus group participants said that the LTAs' ability to demonstrate their knowledge of Global Fund grant processes and procedures had helped them to improve their own knowledge and management of grant funding. They also noted that LTAs had been successful in gaining the trust of NMCP directors and staff; made themselves available to assist, advise, and coach at all times; and had infused their support with optimism and a can-do attitude. The LTAs were noted to have been patient yet persistent, and could be depended upon to provide support whenever needed.

In Phase I, KII and FGD participants expressed that two years should be the **minimum amount of time** for any LTA, and that optimally LTAs would be placed with NMCPs for up to five years, depending on the needs of the NMCP. The Phase II qualitative results reveal that the **duration and consistency of the LTA's support is a factor for success**, particularly in terms of changes in the NMCP's management and governance, and in terms of changes in individual NMCP staff attitudes and behaviors.

None of the LTAs in Phase II completed a LDP+, in comparison to Phase I, during which all LTA had completed at least one LDP+ cycle with NMCP staff. Our resulting analyses indicate that, in terms of introducing and institutionalizing new ways of problem solving and achieving results, and in terms of new staff attitudes and behaviors, **the LDP+ is an important attribute of the LTA intervention**. On this alone we advocate for inclusion of the LDP+ in any future LTA work plan, although this also merits further research.

## Future Research Priorities and Implications for Technical Assistance

The question of how LTAs contribute to NMCP organizational capacity is only partially addressed in this assessment. While it is generally difficult to quantify and connect the influence of improved individual staff confidence and organizational capacity changes, a comparison of **OCA baseline and endline scores** would provide a more complete picture of what changes in organizational behavior took place, and what can be expected at which level of the conceptual framework. We originally planned to include the LMG OCA endline results as an additional dataset in the Phase II analyses. This was not possible due to both the timing of the endline OCAs, as well as the small dataset: only five of the eleven LTA used the same OCA tool. A reliable dataset measuring NMCP organizational capacity would allow us to measure the causal pathway between staff confidence and organizational capacity. This is a key missing element in this study, as described in Figure 6.



Quantitative and qualitative results confirm that **LTAs improve NMCP staff confidence** to carry out their routine job functions. Per the qualitative results, this change in staff confidence is perceived by NMCP staff and NMCP partners to influence NMCPs capacity to manage and implement Global Fund

malaria grants. However, quantitative results show **that neither the LTA inputs nor changes in NMCP staff confidence are linked to Global Fund grant performance measures.**

We conclude that the limitations of **grant performance measures** undermine the reliability of results. There are several issues with current measures, which have been acknowledged by other programs working with Global Fund PRs, such as the Grant Management Solutions project, as well as by the Global Fund itself. Since disbursements are no longer tied to grant management performance, disbursement rates no longer serve as an indicator for performance. Grant performance indicators are only measured every year or every two years, which means that changes in these indicators may not be captured during the LTA's tenure. Grant burn (absorption) rate is perhaps the best proxy measure for grant management and performance, though the majority of grant funds are used for procurements and NMCPs may have limited control over procurement processes. Programmatic and grant ratings are given at the discretion of the Global Fund Country Portfolio team, and cover the entirety of the Global Fund grant, not only PR or SR performance.

Currently, PR dashboards are being introduced to Global Fund programs. These dashboards allow PRs to collect and review up-to-date data on indicators that are closely tied to PR grant management performance, such as stock-outs of malaria commodities, SR performance, and activity completion rates. We recommend that future research include the dashboard data, and that indicators tracked by dashboards be used as measures for grant management outcomes.

## Conclusion

It is clear from our assessment that NMCPs benefit from the support provided by LTAs. From the perspective of people who have worked directly with LTAs, LTAs add value to existing NMCP staff skills and knowledge by building staff confidence to adopt behaviors and attitudes that improve management of Global Fund grant resources. LTA inputs (assistance, training, advice, and coaching) were reported to have been effective due to:

- Early involvement of NMCP leadership in identifying needs
- The skill set and experience of the LTA
- The LTA's ability to gain the trust of NMCP staff and provide support that was seen to be directly related to the immediate needs of the NMCP
- The LTA's use of effective tools for building staff capacity, such as the LDP+
- The LTA's emphasis on promoting the NMCP as the leader of national malaria control efforts
- The LTA's attitude, approachability, and availability
- The duration of time the LTA has been working with each NMCP

While the qualitative data and descriptive statistics were in agreement, and we found statistically significant relationships between the LTA inputs and improvements in staff confidence, our study did not find statistically significant relationships between LTA inputs and grant performance outcomes. More data and more study are needed to clearly and quantitatively measure the causal links between LTA inputs, staff capacity gains, organizational capacity gains, and grant performance.

## Annex I:

PHASE I: GLOBAL FUND MALARIA GRANTS INCLUDED IN ANALYSIS									
Grant number	Country	Years	NMCP PR?	Grant status	Outcome data collected				
					Performance indicators	Disbursement rate	Burn rate	Grant rating	Activity completion rate
<b>CMR-304-G02-M</b>	Cameroon	2004-2009	Yes	Closed	✓	✓	✓	✓	
<b>CMR-506-G06-M</b>	Cameroon	2006-2011	Yes	Closed	✓	✓	✓	✓	
<b>CMR-910-G07-M</b>	Cameroon	2010-2015	Yes	Closed	✓	✓	✓	✓	
<b>CMR-M-MOH</b>	Cameroon	2014-2017	Yes	Active	✓	✓	✓	✓	✓
<b>CIV-607-G06-M</b>	Côte d'Ivoire	2007-2010	No	Closed	✓	✓	✓	✓	
<b>CIV-809-G08-M</b>	Côte d'Ivoire	2009-2015	No	Closed	✓	✓	✓	✓	
<b>CIV-809-G09-M</b>	Côte d'Ivoire	2009-2015	Yes	Closed	✓	✓	✓	✓	
<b>CIV-M-MOH</b>	Côte d'Ivoire	2015-2017	Yes	Active	✓	✓	✓	✓	✓
<b>GIN-202-G02-M-00</b>	Guinea	2003-2009	Yes	Closed	✓	✓	✓		
<b>GIN-607-G05-M</b>	Guinea	2007-2010	Yes	Closed	✓	✓	✓	✓	
<b>GIN-M-PNLP</b>	Guinea	2012-2013	Yes	Closed	✓	✓	✓	✓	
<b>GIN-M-CRS</b>	Guinea	2011-2017	No	Active		✓	✓	✓	✓
<b>LBR-304-G03-M</b>	Liberia	2004-2007	No	Closed	✓	✓	✓	✓	
<b>LBR-708-G05-M</b>	Liberia	2008-2011	No	Closed	✓	✓	✓	✓	
<b>LBR-M-PII</b>	Liberia	2011-2018	No	Active	✓	✓	✓	✓	
<b>LBR-M-MOH</b>	Liberia	2011-2018	Yes	Active	✓	✓	✓	✓	✓

## PHASE II: GLOBAL FUND MALARIA GRANTS INCLUDED IN ANALYSIS

Grant number	Country	Years	NMCP PR?	Grant status	Outcome data collected			
					Performance indicators	Disbursement rate	Burn rate	Grant rating
<b>BRN-202-G02-M-00</b>	Burundi	2003-2006	No	Closed		✓		✓
<b>BRN-202-G05-M-00</b>	Burundi	2006-2014	No	Closed	✓	✓	✓	✓
<b>BRN-910-G10-M</b>	Burundi	2010-2015	No	Closed	✓	✓	✓	✓
<b>BRN-910-G09-M</b>	Burundi	2010-2014	No	Closed	✓	✓	✓	✓
<b>BDI-M-SEPCNLS</b>	Burundi	2014-2015	No	Closed	✓	✓	✓	✓
<b>BDI-M-PNILP</b>	Burundi	2015-2017	Yes	Active	✓	✓	✓	
<b>BDI-M-CARITAS</b>	Burundi	2009-2015	No	Active		✓		
<b>CIV-607-G06-M</b>	Côte d'Ivoire	2008-2010	No	Closed		✓	✓	✓
<b>CIV-809-G09-M</b>	Côte d'Ivoire	2009-2015	Yes	Closed	✓	✓	✓	✓
<b>CIV-M-MOH</b>	Côte d'Ivoire	2015-2017	Yes	Active	✓	✓	✓	✓
<b>CIV-809-G08-M</b>	Côte d'Ivoire	2012-2013	No	Closed	✓	✓	✓	✓
<b>NEP-202-G02-M-00</b>	Nepal	2004-2009	No	Closed		✓	✓	✓
<b>NEP-202-G04-M-00</b>	Nepal	2005-2011	No	Closed	✓	✓	✓	✓
<b>NEP-708-G07-M</b>	Nepal	2008-2011	Yes	Closed	✓	✓	✓	✓
<b>NEP-708-G06-M</b>	Nepal	2008-2011	No	Closed	✓	✓	✓	✓
<b>NEP-M-PSI</b>	Nepal	2011-2014	No	Closed	✓	✓	✓	✓
<b>NEP-M-EDCD</b>	Nepal	2011-2015	Yes	Closed	✓	✓	✓	✓

<b>NPL-M-SCF</b>	Nepal	2015-2018	No	Active	✓	✓	✓	✓
<b>NGR-304-G02-M</b>	Niger	2004-2006	No	Closed	✓	✓		✓
<b>NGR-405-G03-M</b>	Niger	2005-2007	No	Closed	✓	✓	✓	✓
<b>NGR-306-G06-M</b>	Niger	2006-2007	No	Closed	✓	✓	✓	✓
<b>NGR-708-G07-M</b>	Niger	2008-2016	No	Closed	✓	✓	✓	✓
<b>NGR-506-G04-M</b>	Niger	2006-2011	No	Closed	✓	✓	✓	✓
<b>NER-M-CRS</b>	Niger	2016-2017	No	Closed	✓	✓		
<b>SLE-405-G03-M</b>	Sierra Leone	2005-2007	No	Closed	✓	✓	✓	✓
<b>SLE-708-G05-M</b>	Sierra Leone	2008-2011	Yes	Closed	✓	✓	✓	✓
<b>SLE-M-CRSSL</b>	Sierra Leone	2011-2018	No	Active	✓			
<b>SLE-M-MOHS</b>	Sierra Leone	2011-2017	Yes	Active	✓	✓	✓	✓

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