

# LLINs for Continuous and Campaign Distribution in Sub-Saharan Africa: A Collation of Global Funding Commitments for 2011–16

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**Lucy Paintain**

**For the Continuous LLIN Distribution Systems Work Stream  
of the Roll Back Malaria Vector Control Working Group**

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## EXECUTIVE SUMMARY

### Background

Since 2007 the Global Fund to Fight AIDS, Tuberculosis, and Malaria (GFATM) has been approving more new malaria grants and greater amounts of funding, especially for scale-up of long-lasting insecticidal nets (LLINs) to achieve Universal Coverage of populations at risk of malaria by the end of 2010. Countries have been planning rapid scale-up of LLIN coverage through mass distribution campaigns and also, increasingly, through routine mechanisms, particularly from Round 10 onwards.

The purpose of this review is to collate available data on LLINs to be delivered through campaign or continuous mechanisms and to make comparisons with the predicted need for 2011–16, thus providing an informed estimate of the gap in continuous net distributions, for use in advocacy at the global level and to assist with planning.

### Methods

A review of all 57 GFATM proposals funded in Rounds 7–10 and the Rolling Continuation Channel (RCC) was conducted to extract numbers of LLINs needed, LLINs funded, and the remaining gap for the period 2011–16, disaggregated by campaign or continuous delivery mechanism. These figures include LLINs funded by GFATM and other sources and are compared with those extracted from other net mapping projects, such as the Roll Back Malaria (RBM) Country Roadmaps for 2010 and 2011 and country-specific LLIN needs calculated using the NetWorks LLIN model.

### Key findings

Approximately 295 million LLINs have been distributed over the period 2008–10 and around 360 million are already funded for the period 2011–16. The proportion allocated for delivery through continuous channels has increased from 21.6% to 41.5% over these nine years, reflecting both the achievements of the intensive catch-up campaigns and the more recent shift in emphasis towards maintaining (keep-up) of these achievements.

Nevertheless, a considerable gap remains if Universal Coverage is to be achieved and maintained over the next few years throughout sub-Saharan Africa. According to the 35 countries with active GFATM grants, this gap is 47.7 million LLINs over the period 2011–16. The RBM Roadmaps for 38 countries identify a gap of 58.3 million LLINs for 2011. If the NetWorks LLIN model predictions for all 47 countries in sub-Saharan Africa are used, the lower estimate for the remaining gap is 140.3 million over 2011–16. However, this estimate assumes, contrary to fact, that countries achieved 100% coverage in 2010. If it is assumed that only 80% or 60% coverage was achieved in 2010, the shortfall for 2011–16 predicted by the model is 185.5 million or 240.6 million, respectively. These numbers include the nets needed to scale up to Universal Coverage as well as to replace worn-out nets.

The proportional distribution of these nets between campaign and continuous delivery differs depending on the source of data and underlying assumptions. For example, the remaining net need identified from the GFATM proposals suggests that 55.4% of LLINs over the period 2011–16 will be delivered by continuous channels, whereas the RBM Country Roadmaps for 2011 (which provide the most up-to-date information for that year) suggest that only 31.6% would be for continuous delivery. This lower figure reflects the operational reality that nets originally allocated to continuous

distribution channels may be diverted to campaigns if the numbers of LLINs planned for campaigns proves insufficient.

Based on the available data on funded LLINs and planned distributions, a number of countries will not achieve the 80% Universal Coverage targets by 2016; these countries are likely to require additional support to design LLIN delivery strategies and prepare additional funding applications. All countries will need to make strategic decisions on optimal LLIN delivery strategies, in terms of combinations of campaign and continuous distribution that will continue to work towards and maintain Universal Coverage, as well as mobilising sufficient resources to achieve these goals.

### Key Points

- Approximately 295 million LLINs have been distributed over the period 2008–10, and around 360 million are already funded for the period 2011–16. Between these two time periods, the proportion of LLINs allocated for delivery through continuous channels has increased from 21.6% to 41.5%, and the proportion allocated for campaigns has decreased from 78.4% to 58.5%.
- The available data on committed funding for LLINs and planned distributions indicate that a number of countries will not achieve the 80% Universal Coverage target by 2016.
- Based on modelling predictions, there is a gap of approximately 185 million LLINs needed for continuous distribution over the period 2011–16 to maintain Universal Coverage of 80% in all 47 countries in sub-Saharan Africa.

In addition, as the emphasis moves from regular campaigns to improved mechanisms of continuous keep-up, there will need to be flexibility in how LLINs with already committed funding from GFATM or other sources are allocated across years and delivery mechanisms if Universal Coverage targets are to be reached and maintained.

## BACKGROUND

Since 2007 the Global Fund to Fight AIDS, Tuberculosis and Malaria (GFATM) has approved more new malaria grants and greater amounts of funding, especially for scale-up of long-lasting insecticidal nets (LLIN), aiming to achieve Universal Coverage of all populations at risk of malaria by the end of 2010. Countries have been planning for LLIN distributions through campaigns but also, increasingly, through continuous mechanisms, particularly from Round 10 onwards.

Country-level quantifications of the number of nets that they expect to need to reach Universal Coverage are frequently captured and expressed in gap analyses conducted as part of the GFATM proposal development process. In addition, information is also available from the LLIN analyses being done by the Office of the UN Director-General's Special Envoy for Malaria (UN SE) and from the Roll Back Malaria (RBM) 2010 and 2011 Roadmaps as well as from an Excel-based needs assessment model developed by the NetWorks project to quantify the number of LLINs needed to maintain Universal Coverage (taking into account effective net lifespan).

The purpose of this review is to collate all of these available sources of information for sub-Saharan Africa, with particular emphasis on the Rounds 7–10 GFATM proposals, in order to:

- Determine and separate out numbers of LLINs with allocated funding intended for delivery through campaign or through continuous mechanisms over the period 2011–16.
- Compare these figures with the expected number of LLINs needed to achieve and maintain Universal Coverage as determined by the NetWorks LLIN model.
- Provide an informed estimate of the gap between allocations and needs for continuous net distributions, for use in advocacy at the global level and to assist individual countries with planning.

## METHODS

### GFATM review

All proposals to the Global Fund, approved or unapproved, are available on the GFATM Web site<sup>1</sup>, including any amendments or clarifications made during the grant approval process. All proposals submitted to the Global Fund by sub-Saharan African countries in Rounds 7–10 or the Rolling Continuation Channel (RCC) that included an LLIN component were reviewed. Data were extracted on the following:

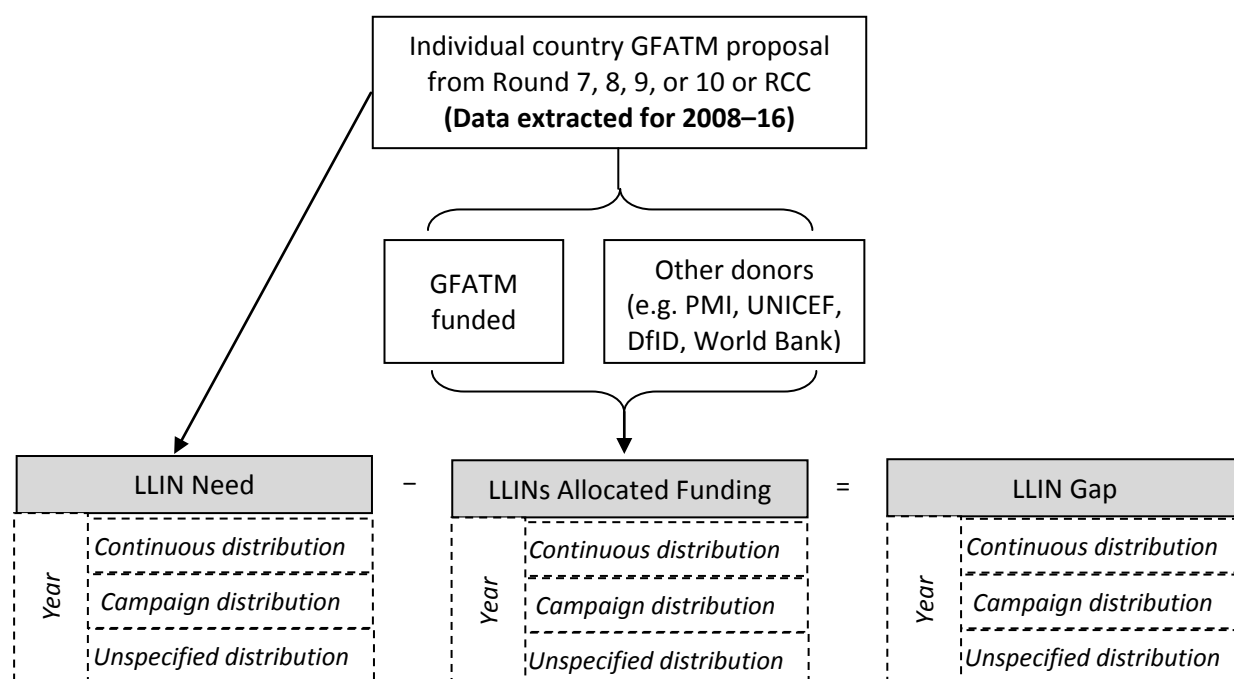
- The LLIN numbers required to achieve the proposal's stated objectives. Information was also extracted on the key assumptions behind the calculations (where possible).
- The number of LLINs already funded by existing GFATM grants and other major donors, including the President's Malaria Initiative (PMI)/United States Agency for International Development (USAID), the United Nations Children's Fund (UNICEF), the World Bank, UNITAID, the United Kingdom Department for International Development (DfID), the public sector, and the private sector; smaller donors were aggregated under 'other'.
- The number of LLINs requested from the GFATM; for successful proposals, it was assumed that the numbers proposed were funded.
- The LLIN gap remaining after excluding nets funded by the GFATM and all other sources.

Each of these figures was disaggregated by delivery channel (campaign or continuous) and year, using information available in the proposals. The years covered by the proposals depended on the round, but any data presented for some or all of the period 2008–16 were extracted. In some proposals it was not possible to disaggregate the data by delivery channel in sufficient detail; in these cases overall LLIN numbers were extracted and the delivery mechanism was classified as 'unspecified' (Figure 1).

To enable comparison with other data sources, and to quantify the remaining LLIN gap, nets funded in 2008–10 are aggregated to provide the existing quantity of 'useful' nets (i.e. those within the RBM-recommended 3-year lifespan). Nets funded or needed are reported for 2011, 2012–16, and 2011–16; data on individual annual needs are available in full spreadsheets from the Continuous LLIN Distribution Systems Work Stream of the Roll Back Malaria Vector Control Working Group (<http://www.rbm.who.int/mechanisms/vcwgWorkstream3.html>).

<sup>1</sup> Global Fund to Fight AIDS, Tuberculosis and Malaria. *The Global Fund to Fight AIDS, Tuberculosis and Malaria: funding decisions*. 2011 [accessed March 2011]; available from: <http://www.theglobalfund.org/en/fundingdecisions/?lang=en>.

**Figure 1. Illustration of data extraction process for each funded Round 7–10 GFATM proposal requesting LLINs**



## RBM 2010 and 2011 Roadmap review

Data were extracted from the 2010 and 2011 country-specific RBM Roadmaps<sup>2,3</sup> on:

- Calculated number of nets needed to achieve Universal Coverage by the end of 2010 or to maintain it to the end of 2011, by delivery channel (where possible). Information was also extracted on the key assumptions behind the calculations.
- Total nets already available/expected by the end of 2010 and 2011, by delivery channel (where possible).
- Remaining LLIN gap for achieving/maintaining Universal Coverage, by delivery channel (where possible).

The last extraction of data was from the September 2011 updates of the 2011 Roadmaps.

## UN Special Envoy for Malaria and Net Mapping projects

For comparison with the GFATM proposal review data, data were extracted from net mapping projects:

- The number of nets needed to reach Universal Coverage was extracted from the summary data tables on the UN SE Web site<sup>4</sup>, originally taken from the 2010 RBM Roadmaps.

<sup>2</sup> Roll Back Malaria. 2010 country roadmaps. 2010 [accessed March 2011]; available from: <http://www.rollbackmalaria.org/countryaction/>.

<sup>3</sup> Roll Back Malaria. 2011 country roadmaps. 2011 [accessed March 2011]; available from: <http://www.rollbackmalaria.org/rbmroadmaps2011.html>.



- The Net Mapping project collated data on the number of nets delivered to each sub-Saharan African country from the main LLIN manufacturers; these data are used as an objective proxy for the quantity of 'useful' nets available, i.e. those within the 3-year lifespan (2008–10)<sup>5</sup>.

## Prediction of nets needed by delivery mechanism using the NetWorks LLIN model

The NetWorks LLIN model uses data on population and household structure, median LLIN lifespan, and the RBM-recommended ratio of 1.8 people per LLIN to calculate the numbers of LLINs needed annually for campaign and continuous distribution to achieve and maintain Universal Coverage with an effective LLIN<sup>6</sup>.

For simplification, and following the concerted efforts to achieve Universal Coverage by the end of 2010, it was assumed that all countries would have distributed sufficient nets to reach Universal Coverage by 2010 (through any mechanism, but mostly it was assumed that this would have been through campaigns), and the number of nets needed to achieve 100% coverage was calculated accordingly, with the target date of 31 December 2010. The tool was then used to project the number of nets needed to maintain coverage of at least 80% through continuous delivery over the period 2011–16 for all 47 countries in sub-Saharan Africa. A sensitivity analysis was conducted to determine the impact on predicted LLIN numbers needed if the 2010 coverage target was reduced from 100% to 80% or 60%. The following data on each country were collated for entry into the model:

- Total population and annual growth rate were extracted from the GFATM proposals (Rounds 7–10, RCC) where available to predict annual population figures. For countries without a recent GFATM proposal, data were taken from the UN Population Division database for 2006<sup>7</sup>.
- Mean household size was extracted from recent nationally representative household surveys, where available (Demographic and Health Surveys, Multiple Indicator Cluster Surveys, or Malaria Indicator Surveys<sup>8,9</sup>). In the absence of recent survey data, the median of five persons per household was used.
- The proportion of population at risk of malaria was extracted from the GFATM proposals where indicated or from the MARA mapping project<sup>10</sup> as appropriate. Countries with

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<sup>4</sup> Office of the UN Secretary-General's Special Envoy for Malaria. Malaria progress: Tracking progress toward ending malaria deaths in Africa. 2010 [accessed March 2011]; available from: [http://www.malariaenvoy.com/tabid/61/Default.aspx?udt\\_373\\_param\\_detail=76](http://www.malariaenvoy.com/tabid/61/Default.aspx?udt_373_param_detail=76).

<sup>5</sup> Milliner J. Net Mapping Project. 2010. Washington, DC: President's Malaria Initiative, United States Agency for International Development.

<sup>6</sup> Kilian A, Streat E, Moonen B. RBM-HWG Needs Assessment Calculation Tool. 2008 [accessed March 2011]; available from: [http://www.rbm.who.int/toolbox/tool\\_CountryNeedsAssessment.html](http://www.rbm.who.int/toolbox/tool_CountryNeedsAssessment.html).

<sup>7</sup> United Nations Population Division. World population prospects: 2006 revision population database. 2006 [accessed March 2011]; available from: <http://www.un.org/esa/population/publications/wpp2006/wpp2006.htm>

<sup>8</sup> Measure DHS. Demographic and Health Surveys. [Accessed March 2011]; available from: <http://www.measuredhs.com/pubs/>.

<sup>9</sup> United Nations Children's Fund. ChildInfo: Monitoring the situation of children and women. [Accessed March 2011]; available from: <http://www.childinfo.org/mics3.html>.

<sup>10</sup> Craig M, Snow RW, le Seur D. A climate-based distribution model of malaria transmission in sub-Saharan Africa. *Parasitology Today*, 1999, 15(3):105–111.

significant proportions of their population not at risk of malaria and for which the LLIN needs were adjusted accordingly were Burundi, Ethiopia, Kenya, Namibia, Somalia, South Africa, Swaziland, and Zimbabwe. A small number of other countries may have low proportions of their population not at risk of malaria (such as Cameroon, DRC, Madagascar, and Uganda); however, in these cases, for simplicity and practicality, the total population was considered at risk. In the case of Rwanda, the whole population was considered at risk, as this appears to be the country's consideration based on their GFATM proposal and RBM Roadmap.

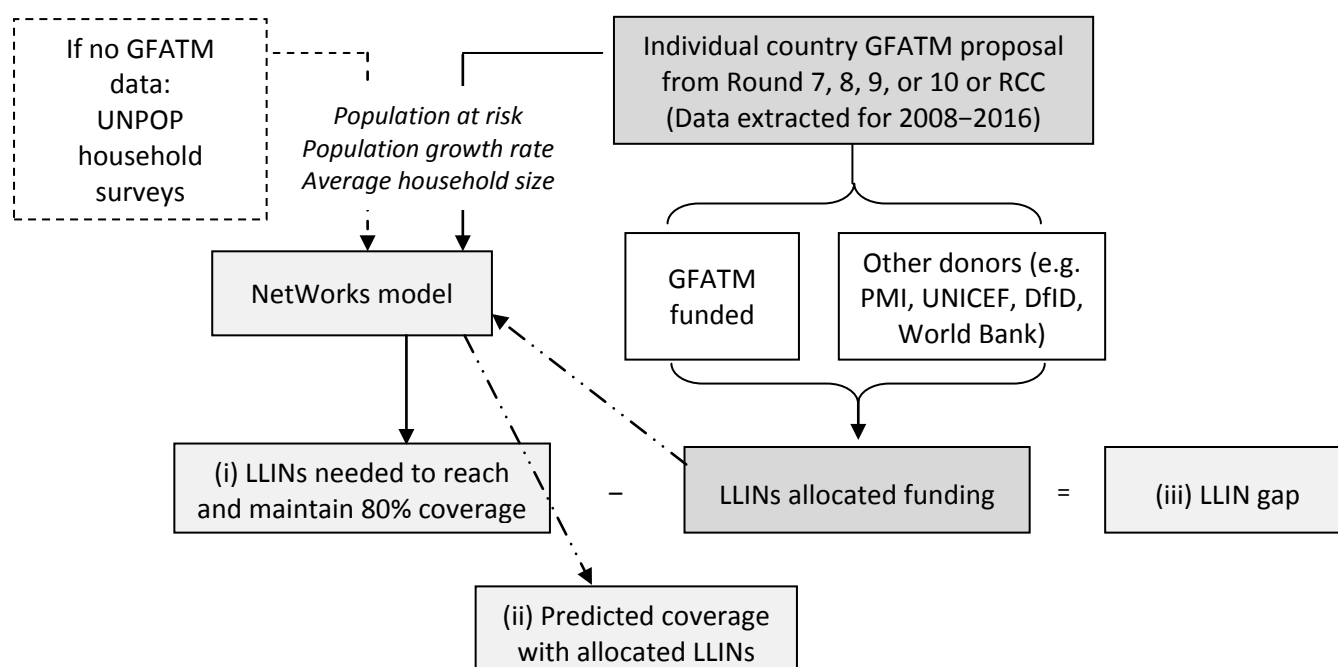
- In line with current RBM guidelines, median LLIN lifespan was set at three years.

The data extracted from GFATM proposals on total LLINs funded for delivery through campaign or continuous distribution channels were entered into the model. The model then compared these data against the predicted need (based on population and household size and loss of previously distributed nets) to predict the actual annual population coverage that will be achieved by each country's currently funded LLIN strategy (Figure 2).

The delivery mechanism(s) for maintaining 80% coverage through continuous distribution was not considered. This is a separate element of the NetWorks model that is still under development, with which the user can explore different options based on local data such as coverage of routine antenatal care (ANC) or immunisation (EPI) services, school attendance, or the capacity of community-based organisations.

The predicted number of nets needed annually and the expected coverage based on countries' planned distributions, as described in GFATM proposals, were extracted from the model output into a summary spreadsheet (Figure 2).

**Figure 2. Data sources for an individual country's NetWorks model predictions and the three main outputs of the model: (i) number of LLINs needed to achieve and maintain Universal Coverage (2011–16); (ii) coverage that will be achieved with currently allocated LLIN; and (iii) remaining LLIN gap**



## RESULTS

### Overview of proposals reviewed

Forty-three of the 47 countries in sub-Saharan Africa submitted at least one proposal to the Global Fund in Rounds 7–10 or the RCC, contributing 85 proposals in total (Table 1). Botswana, Equatorial Guinea, Mauritania, and South Africa, which are not eligible for GFATM financing due to their gross national income levels, did not submit any individual proposals, although Botswana and South Africa were included in cross-border proposals, none of which were successful.

Forty-two countries had at least one successful proposal in Rounds 7–10 or the RCC that involved LLINs (Gabon did not have its Round 8 proposal accepted). Of these 42 countries, 15 had two successful proposals each, and the remaining 27 had one successful proposal each, giving a total of 57 funded grants involving LLIN distribution from which data were extracted on numbers of LLIN needed, numbers funded, and the remaining gap.

These 57 successful LLIN grants have a total approved budget from the GFATM of approximately US\$2.4 billion.<sup>1</sup>

Unsuccessful proposals were considered for inclusion in this review only if the country had not subsequently received a GFATM grant in a later round. Thus, all nine unfunded proposals in Round 7, three of the four in Round 8, and seven of the eight in Round 9 were not reviewed. The remaining unfunded proposals did not contain sufficiently detailed gap analyses to extract meaningful LLIN data.

Overall, the proposals have evolved to reflect changing global LLIN policy, moving, for example, from an emphasis on targeted distribution to pregnant women and children under five in Round 7 to scaling up for impact and Universal Coverage of the whole population at risk from Round 8 onwards.

The gap analysis calculations also have changed across the rounds. For example:

- In Round 7 needs were presented in terms of vulnerable populations to be covered (rather than LLIN numbers explicitly). Some countries reduced the total population of pregnant women and/or children less than one year of age (U1) to the expected coverage of ANC and/or EPI to derive the operational population to be covered.
- In Rounds 8 and 9 the majority of countries applied the RBM needs assessment tool, using a ratio of one net per two people at risk; some countries included a 10% margin for losses. LLINs were assumed to last three or four years; some countries modelled this explicitly by accounting for cumulative nets present in the community. Where routine distribution was included, needs were calculated based on one net per pregnant women and/or U1, in some cases taking into account the expected coverage of the delivery channel.
- In Round 10 most countries applied a ratio of one net per 1.8 people to calculate needs for Universal Coverage, assuming 8% loss in Year 1, 20% loss in Year 2, 50% loss in Year 3, and 100% loss after Year 3, as recommended by RBM, to ensure proper quantifications in terms of replacement nets. Again, where routine distribution was included, needs were calculated based on one net per pregnant woman and/or U1, in some cases taking into account the expected coverage of the delivery channel.

## LLIN needs for 2011–16

The figures from the RBM 2011 Roadmaps are approximately 60% greater than those from the GFATM proposal review: 178.7 million and 109.4 million nets, respectively, needed for 2011 (Table 2 and Annex Table 1).

A greater proportion of the Roadmap nets were specified for campaign delivery than in the GFATM proposals (79.8% versus 50.6%), although, for 22.0% of the nets identified for 2011 in the GFATM review, the delivery channel was unspecified; this may account for some of the difference.

It is likely that a number of the campaign LLINs identified in the 2011 Roadmaps were not distributed in 2010 as planned due to delays in implementing campaigns. If so, some of the 344.4 million nets identified in the 2010 Roadmaps may have been carried over for campaign distribution in 2011. For example, recent data from Kenya clarify that 100% of nets originally needed for 2010, as identified in the GFATM proposal, are now included in the outstanding 2011 needs, which match Kenya's 2011 Roadmap figures; for Tanzania and Uganda 50% and 60% of LLIN originally identified for 2010 have been carried over to 2011 needs (M. Renshaw, personal communication).

The NetWorks LLIN model predictions for 2011 were lower than both the Roadmaps and the GFATM review numbers. In fact, based on the assumption that 100% coverage was achieved in 2010, the model predicts that no nets would be needed in 2011. Although some nets will be lost in the year following the campaign, the rates of loss and population growth are not great enough for expected coverage to fall below 80%, which was set as the maintenance target for 2011–16. Thus, the model predicts that no further nets are needed in 2011.

The calculated numbers of nets needed for 2011–16 are slightly higher from the NetWorks LLIN model than from the GFATM review—a total of 501.2 million compared with 499.6 million over the six years. It is important to note that the needs for 2011–16 calculated by the NetWorks model depend on sufficient numbers being delivered in 2010 to achieve 100% coverage. If the target coverage for 2010 is assumed to be 80% or 60%, however, the number of LLINs needed over the period 2011–16 to sustain 80% coverage increases. Because fewer nets are needed in 2010, under these assumptions more would be needed in the following years (particularly 2011) to reach and maintain 80% coverage. If the 2010 target is set at 80%, then 9% more LLINs would be required over 2011–16 (total: 546.3 million); if the 2010 target is set at 60%, then 20% more LLINs would be required over 2011–16 (total: 601.4 million).

If the full period 2010–16 is considered, the overall total need actually falls by 4% with 80% coverage in 2010 or by 6% with 60% coverage in 2010, due to the reduced LLIN numbers required for 2010.

In the NetWorks model predictions for 2011–16, all nets are assumed to be for continuous distribution to sustain population coverage at 80%. In fact, only 29.2% of nets identified in the GFATM review were specified for continuous delivery, although the delivery mechanism for 38.9% of required nets was not specified.

## LLINs funded for 2011–16

There is reasonably close agreement on the number of LLINs funded for 2008–10 between the GFATM proposal review (296.2 million) and the manufacturers' data of the Net Mapping project (293.8 million) (Table 3 and Annex Table 2). These figures provide some idea of the 'useful' net crop available in country at the start of 2011.

According to the RBM Roadmaps, the number of LLINs funded in 2010, at 259.6 million, is lower than the GFATM and Net Mapping numbers, although in the Roadmaps not all countries may have accurately estimated all nets under three years old, which contribute to the 'useful' net crop.

The LLINs funded in 2008–10 are not disaggregated by source in the Net Mapping project data or in the RBM Roadmaps. Of those summarised for this same period from the GFATM review, 78.4% were for campaign distribution, and 21.6%, for continuous distribution—the vast majority of these through ANC or EPI and a smaller number for continuous community-based distribution.

The proportion of funded LLINs allocated to continuous delivery more than doubles, increasing from 17.3% in 2010 to 39.7% in 2011, and remains reasonably high for 2012–16 at 42.1%. This increase presumably reflects the shift from the intensive catch-up activities to reaching Universal Coverage by the end of 2010 and then to maintaining these gains through keep-up strategies.

The numbers of LLINs funded in 2011 according to the RBM Roadmaps are higher than those extracted from the GFATM proposals, even though they come from fewer countries. Also, 83.1% of these LLINs are allocated for campaigns, compared with 60.3% of GFATM proposal LLINs. This difference may reflect the important observation that funded nets are reallocated from continuous delivery to campaigns where 2010 campaigns have been delayed (E. Olivi, personal communication).

Recent data from Kenya, Tanzania, and Uganda show approximately 100%, 50%, and 60% of nets originally funded for 2010 campaigns being reallocated to campaign distribution in 2011 (M. Renshaw, personal communication). These updated figures for Kenya, Tanzania, and Uganda are already included in the final report tables. If a sensitivity analysis is conducted, reallocating 50% of 2010 campaign LLINs to a 2011 campaign (excluding Kenya, Tanzania, and Uganda) would result in a total of 132.0 million funded LLIN for 2011 for the 42 countries with a GFATM grant, compared with 126.3 million according to the 38 RBM Roadmaps for 2011. This calculation supports the contention that reallocation is taking place in a number of countries and is likely to explain the differences in numbers of LLIN funded depending on the source of data.

## Remaining LLIN gap for 2011–16

Overall, some gaps remain in funded LLINs for 2011, although the magnitude differs depending on the source of data. For example, according to the GFATM review, 20.1 million LLIN are still needed for 2011, while the RBM Roadmaps report 58.4 million. If, however, the required numbers of LLINs calculated by the NetWorks LLIN model are taken as the baseline, then there is a considerable excess of 100.2 million LLIN funded for 2011 (Table 4 and Annex Table 3). This is due to the assumptions used in the model, which predict that no nets would be needed in 2011 if 100% coverage had been achieved in 2010. If 80% coverage was achieved in 2010, there is still a considerable projected excess of 70.2 million LLINs for 2011. However, if 60% coverage was achieved in 2010, there was a need for 5.0 million LLINs in 2011 to reach and maintain the targeted 80% coverage level (Table 5).

Since the Roadmap data indicate that there are still some catch-up campaigns that need to be conducted or completed, the reality for 2011 is likely to be an LLIN shortfall of approximately 50 million LLINs.

That there is a continued LLIN demand for catch-up campaigns is further supported by the breakdown of LLIN still needed according to delivery channel: Campaign delivery nets make up a considerably greater share of unfunded nets in 2011 according to the more recent country needs assessments in the RBM Roadmaps than in the GFATM review, at 67.8% and 5.4%, respectively (although, in the case of the GFATM review, a large proportion of nets are unspecified as to delivery channel—58.6%). It is possible that LLINs originally intended for continuous distribution in GFATM proposals are being reallocated by countries to campaigns in order to achieve Universal Coverage by the end of 2011.

The LLIN gap for 2012–16 varies considerably depending on the needs calculation used. When the country calculations as reported in GFATM proposals are used, and the funded net data from GFATM

proposals are subtracted from this, there is a deficit of 28.9 million, with 69.8% of these allocated for continuous delivery. However, when the numbers of funded nets from GFATM proposals are subtracted from the NetWorks LLIN model calculations, the deficit is 240.6 million over the 5-year period, all of which are (in theory) for continuous distribution.

If the LLIN numbers are considered across the period 2011–16, the large excess of nets predicted by the NetWorks model for 2011 reduces the overall gap to 140.4 million over the 6-year period (185.5 million, or 240.6 million if 80% or 60% coverage is assumed for 2010), whereas the gap calculated from the GFATM proposals is 47.7 million.

The main reasons for these differences are likely to be that: (i) not all countries had a GFATM proposal, and so the figures are drawn from a smaller number of countries than the NetWorks model calculations (Table 4); and (ii) not all of the GFATM proposals, especially those from the earlier rounds, covered the full period up to 2016.

Looking in more detail at figures from the NetWorks LLIN model (which include replacement nets) and those for funded nets from the GFATM review, it can be seen that some countries have an excess of LLINs over the 2011–16 period (for campaign and/or continuous distribution), whereas others have a deficit (Annex Table 4). Overall, the majority of countries still have gaps in LLIN funding that will need to be filled to maintain population coverage at 80%.

The exceptions are Angola, Burundi, Comoros, Djibouti, Gambia, Guinea Bissau, Kenya, Liberia, Malawi, Mali, Rwanda, Sao Tome and Principe, Sierra Leone, Somalia, Swaziland, Uganda, and Zimbabwe. In these countries there is an excess of nets for the period 2011–16 as a whole, even though individual years may see shortfalls.

If the emphasis is to move from regular campaigns to strong mechanisms of continuous keep-up, there will need to be flexibility in how LLINs already budgeted for from GFATM funds or other sources are allocated across years and delivery mechanisms.

## Assessing individual country needs for continuous distribution

While projections of the LLINs needed and the remaining gap for 2011–16 predicted by the NetWorks model in terms of absolute LLIN numbers are sensitive to the level of coverage assumed to be achieved in 2010 (Table 5), the predicted annual population coverage using actual planned LLIN figures from the GFATM proposals is independent of this assumption. The annual proportion of the population at risk that is protected by an LLIN is calculated based on number of LLINs distributed (campaign or continuous), population and household size, and median lifespan of LLINs distributed within the defined period of the model (2010–16). For example, years with planned campaigns contribute more nets than the model's predicted need (based on continuous distribution alone for 2011–16), resulting in population coverage approaching (or in some cases exceeding) 100% (Annex Table 4).

Based on the data available in GFATM proposals, 21 countries (44.7%) will achieve 100% LLIN coverage in at least one year of the period covered by the model predictions (2011–16). Ten of these will have achieved 100% coverage in 2011, four in 2012, and the remainder in 2013 or 2014 (Table 6).

Thirty-one countries (66.0%) will reach 80% LLIN coverage in at least one year of the period 2011–16. Amongst these countries, the median number of years where coverage will be maintained above 80% is 3.0 years (ranging from 1 to 6 years) (Table 6).

Based on data available from GFATM proposals, 16 countries will not achieve 80% coverage in any year between 2011 and 2016 under currently funded LLIN distribution strategies.



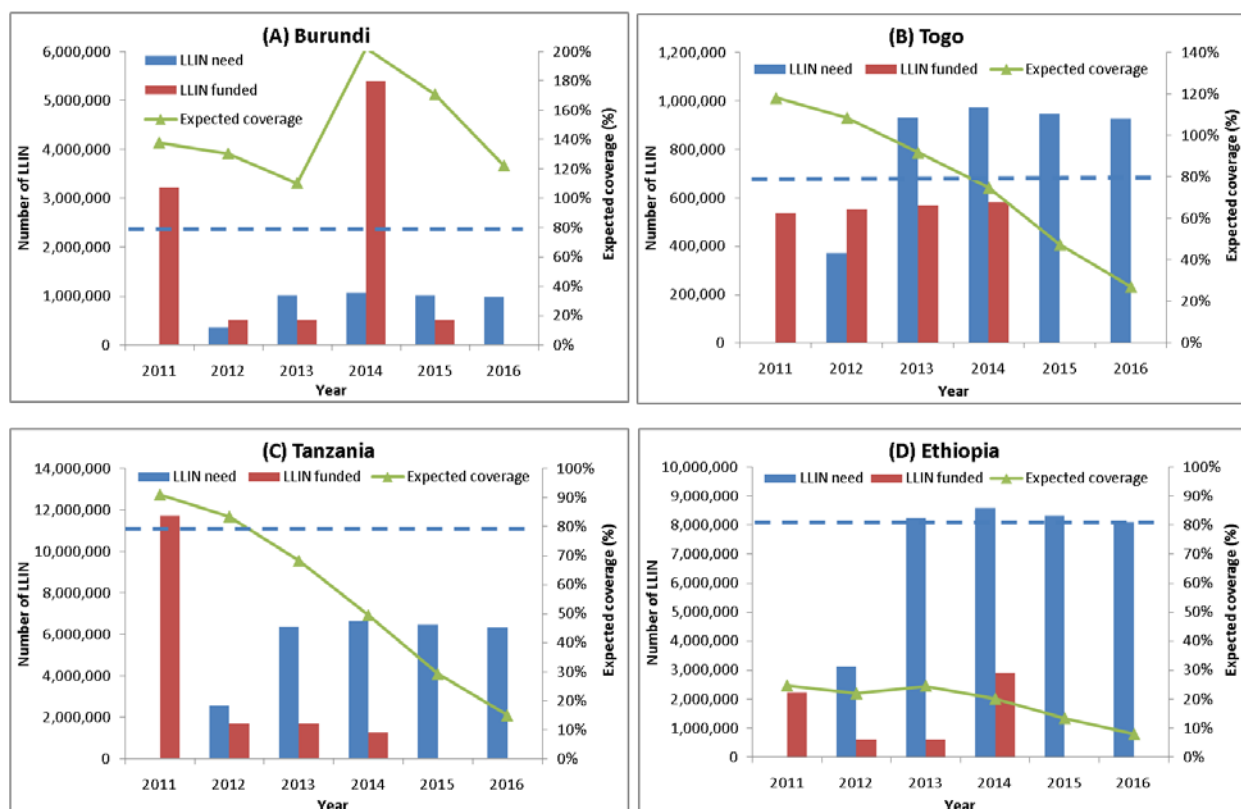
Each country was assigned a 'score', based on the predicted population coverage if funded LLINs are distributed as planned: A country was given one point if it will achieve  $\geq 80\%$  coverage in any year, a further point if the country will achieve 100% coverage in any year, and additional points for each year that coverage is  $\geq 80\%$ . To differentiate countries that just miss the 80% target from those that are well below it, one point was removed for every year that coverage is  $< 50\%$ . These scores were then used to rank the countries in order of predicted LLIN coverage over the period 2011–16, in order to identify which countries may require further assistance in achieving and/or maintaining Universal Coverage of 80% (Table 6).

Figure 3 illustrates the different patterns of expected coverage predicted by the NetWorks model, based on funded LLINs:

- Burundi represents those few countries at the top of Table 10 that will far exceed the Universal Coverage targets for all or most of the 2011–16 period (Figure 3A). This is due in part to allocating numbers of LLINs for mass universal campaigns that exceed the calculated 'need' for a strategy of continuous distribution.
- Togo represents those countries that will reach or fall just short of the 80% targets (indicated by the dashed line) but that will need to plan further funding for the second half of the 2011–16 period to maintain these achievements (Figure 3B).
- Tanzania has funded LLINs for a universal campaign in 2011. Currently, however, it does not have sufficient funded LLINs to maintain the achievements of this campaign through continuous distribution (Figure 3C).
- Ethiopia represents those countries that currently fall considerably below the 80% targets for the entire 2011–16 period and will require substantial additional funding (Figure 3D).

As well as predicting LLINs required to reach and maintain Universal Coverage, the second function of the NetWorks model is to enable the user to explore different options for developing a continuous distribution strategy based on local data such as coverage of routine ANC or EPI services, school attendance, or capacity of community-based organisations. The model can be used at the sub-national level where sufficient data are available. It has already been used in this way in South Sudan and Nigeria to highlight potential achievements of different continuous delivery mechanisms and to facilitate strategy development.

**Figure 3. Comparison of predicted LLIN needs to achieve and maintain 80% coverage (dashed line) with predicted actual coverage achievable by funded LLIN in four example countries, 2011–16**





## Conclusions

Huge numbers of LLINs have either already been distributed or are funded over the time period covered by the Global Fund Rounds 7–10. Approximately 295 million LLINs have been distributed over the period 2008–10 and approximately 360 million are already funded for the period 2011–16. The proportion allocated for delivery through routine channels has increased from 21.6% to 41.5% between these two time periods, reflecting both the achievements of the intensive catch-up campaigns and the more recent shift in emphasis towards keep-up of these achievements.

Nevertheless, a considerable gap remains if Universal Coverage is to be maintained over the next few years. According to the 35 countries with active GFATM grants for some or all of the period 2011–16, this gap is 47.7 million (over 2011–16). The RBM Roadmaps for 38 countries identify a gap of 58.3 million for 2011. If the NetWorks LLIN model predictions for all 47 countries in sub-Saharan Africa are used, the lower estimate for the remaining gap is 140.4 million over 2011–16. However, this assumes that countries achieved 100% coverage in 2010. If it is assumed instead that 80% or 60% coverage was achieved in 2010, the shortfall for 2011–16 identified by the model predictions is 185.5 million or 240.6 million, respectively.

The proportional distribution of these nets between campaign and continuous delivery differs depending on the source of data and underlying assumptions. For example, the remaining net need identified from the GFATM proposals suggests 55.4% of LLINs over the period 2011–16 will be delivered by continuous channels, whereas the RBM Country Roadmaps for 2011 suggest that only 31.6% would be for continuous delivery. This difference reflects the operational reality that nets from continuous distribution may be diverted to campaigns if LLIN numbers planned for campaigns prove to be insufficient.

Based on the available data on funded LLINs and planned distributions, a number of countries will not achieve the 80% Universal Coverage targets by 2016. These countries are likely to require additional support to design LLIN strategies and develop funding applications. All countries will need to make strategic decisions on optimal LLIN delivery strategies in terms of combinations of campaign and continuous distribution that continue to work towards and maintain Universal Coverage. Significant effort will be required to maintain momentum in mobilising sufficient resources.

Table 1. Summary of Global Fund proposals reviewed, by country and round

Country	Proposals Approved, by GFATM Round					Total malaria grants (R7–10, RCC)	Number Including LLINs
	R7	R8	R9	R10	RCC		
Angola	Y			Y		2	2
Benin	Y	N			Y	2	1
Burkina Faso	Y	Y				2	2
Burundi			Y			1	1
Cameroon	N		Y			1	1
Cape Verde				Y		1	1
CAR		Y				1	1
Chad	Y		Y			2	2
Comoros	N	Y				1	1
Congo		Y				1	1
Congo (DRC)	N	Y	N	Y		2	2
Cote d'Ivoire		Y				1	1
Djibouti			Y			1	1
Eritrea			Y			1	1
Ethiopia	N	Y		N		1	1
Gabon		N				0	0
Gambia			Y			1	1
Ghana	N	Y			Y	2	1
Guinea				Y		1	1
Guinea Bissau			Y			1	1
Kenya	N	N	N	Y		1	1
Liberia	Y			Y		2	2
Madagascar	Y		Y		Y	3	2
Malawi	Y		Y			2	2
Mali			N	Y		1	1
Mozambique		N	Y			1	1
Namibia					Y	1	1
Niger	Y		N	N		1	1
Nigeria	N	Y				1	1
Rwanda		Y				1	1
Sao Tome & Principe	Y				Y	2	2
Senegal	Y		N	Y		2	2
Sierra Leone	Y		N	Y		2	2
Somalia				Y		1	1
Sudan – North	Y			Y		2	2
Sudan – South	Y			Y		2	2
Swaziland		Y				1	1
Tanzania	Y	Y	Y		Y	4	2
Togo			Y			1	1
Uganda	Y		N	Y		2	2
Zambia	Y		N			1	1
Zanzibar	N	Y				1	1
Zimbabwe	N	Y		Y		2	2
<b>TOTAL</b>						<b>62</b>	<b>57</b>

**Table 2. Total LLINs needed, by delivery strategy; comparison of data from GFATM proposals, RBM Roadmaps, and the NetWorks LLIN model**

Delivery mode	Calculated needs									
	GFATM proposals				RBM Roadmaps		NetWorks LLIN model*			
	2010	2011	2012–16	2011–16	2010	2011	2010	2011	2012–16	2011–16
Campaign	81,207,177	55,361,551	104,091,675	159,453,226	0	142,590,405	423,493,890	0	0	0
Continuous	18,215,664	29,943,258	116,054,807	145,998,065	0	35,634,818	0	0	501,203,212	501,203,212
Any	146,712,055	109,416,386	390,230,897	499,647,283	344,433,962	178,745,223	423,493,890	0	501,203,212	501,203,212
% campaign	55.4	50.6	26.7	31.9	0.0	79.8	100.0	0.0	0.0	0.0
% continuous	12.4	27.4	29.7	29.2	0.0	19.9	0.0	0.0	100.0	100.0
% unspecified	32.2	22.0	43.6	38.9	100.0	0.3	0.0	0.0	0.0	0.0
No. countries	32	38	40	40	44	38	47	47	47	47

\* Based on predictions of LLIN numbers needed to achieve 100% coverage in 2010 and maintain coverage at 80% over 2011–16

**Table 3. Total LLINs funded, by delivery strategy; comparison of data from GFATM proposals, RBM Roadmaps, and Net Mapping project**

Delivery mode	Funded LLINs							
	GFATM proposals (GF-funded and other sources)					RBM Roadmaps		Net Mapping project
	2008–10	2010	2011	2012–16	2011–16	2010	2011	2008–10
Campaign	232,108,501	114,522,883	60,460,573	150,812,509	211,273,082	0	104,936,667	0
Continuous	64,113,987	24,033,162	39,782,898	109,794,660	149,577,558	0	21,166,814	0
Any	296,222,488	138,556,045	100,243,471	260,607,169	360,850,640	259,556,237	126,277,481	293,837,937
% campaign	78.4	82.7	60.3	57.9	58.5	0.0	83.1	0.0
% continuous	21.6	17.3	39.7	42.1	41.5	0.0	16.8	0.0
% unspecified	0.0	0.0	0.0	0.0	0.0	100.0	0.1	100.0
No. countries	40	41	42	42	42	44	38	45

**Table 4. Total remaining LLIN gap, by delivery strategy; comparison of data from GFATM proposals, RBM Roadmaps, and NetWorks LLIN model**

Delivery mode	Remaining LLIN gap								
	GFATM proposals			RBM Roadmaps		NetWorks LLIN model* minus funded nets (GFATM review)			
	2011	2012–16	2011–16	2010	2011	2010	2011*	2012–16	2011–16
Campaign	1,087,409	3,455,726	4,741,419	0	39,598,170	308,971,095	-60,460,573	-150,812,509	-211,273,082
Continuous	7,230,931	20,194,145	26,451,511	0	18,436,330	-24,033,162	-39,782,898	391,408,551	351,625,653
Any	20,072,901	28,928,054	47,710,674	81,303,313	58,380,500	284,937,932	-100,243,471	240,596,042	140,352,571
% campaign	5.4	11.9	9.9	0.0	67.8	108.4	60.3	-62.7	-150.5
% continuous	36.0	69.8	55.4	0.0	31.6	-8.4	39.7	162.7	250.5
% unspecified	58.6	18.2	34.6	100.0	0.6	0.0	0.0	0.0	0.0
No. countries	36	32	35	44	38	47	47	47	47

\*Based on predictions of LLIN numbers needed to achieve 100% coverage in 2010 and maintain it at 80% over 2011–16

**Table 5. Sensitivity analysis of NetWorks model predictions in terms of numbers of LLINs needed and the remaining gap if coverage achieved in 2010 is assumed to be 100%, 80%, or 60%**

Assumed coverage in 2010	No. LLINs needed (NetWorks model)			No. LLINs funded (GFATM review)			Remaining LLIN gap		
	2010	2011	2011–16	2010	2011	2011–16	2010	2011	2011–16
100%	423,493,890	0	501,203,108	138,556,045	100,243,471	360,850,640	284,937,932	-100,243,471	140,352,571
80%	338,795,112	30,072,186	546,311,388	138,556,045	100,243,471	360,850,640	200,239,137	-70,171,278	185,460,861
60%	254,096,334	105,252,653	601,443,730	138,556,045	100,243,471	360,850,640	115,540,341	5,009,204	240,593,214

**Table 6. Ranking of countries according to coverage predicted by NetWorks LLIN model for 2011–16**

Country	GFATM round	Achieves 100%	Year 100% achieved	Achieves 80%	Year 80% achieved	No. years ≥80% (2011–16)	No. years <50% (2011–16)	Overall score
Burundi	9	1	2011	1	2011	6	0	8
Gambia	8	1	2011	1	2011	6	0	8
Malawi	8	1	2011	1	2011	6	0	8
Sao Tome & Principe	RCC	1	2011	1	2011	6	0	8
Swaziland	8	1	2011	1	2011	6	0	8
Burkina Faso	8	1	2011	1	2011	5	0	7
Djibouti	9	1	2012	1	2011	5	0	7
Guinea-Bissau	9	1	2014	1	2011	5	0	7
Kenya	10	1	2014	1	2011	5	0	7
Liberia	10	1	2012	1	2012	5	0	7
Mali	10	1	2011	1	2011	5	0	7
Rwanda	8	1	2013	1	2011	5	0	7
Somalia	10	1	2012	1	2012	5	1	6
Angola	10	1	2014	1	2013	4	1	5
Uganda	10	1	2011	1	2011	4	1	5
Zimbabwe	10	1	2013	1	2013	3	0	5
Comoros	8	1	2012	1	2012	3	2	3
Cote d'Ivoire	8	1	2011	1	2011	3	2	3
Mozambique	9	1	2013	1	2013	2	1	3
Togo	9	1	2011	1	2011	3	2	3
Zanzibar	8	1	2013	1	2013	2	1	3
CAR	8	0		1	2011	3	2	2
Eritrea	9	0		1	2013	1	1	1
Nigeria	8	0		1	2014	1	1	1
Chad	9	0		1	2012	1	2	0
Madagascar	RCC	0		1	2011	2	3	0
Tanzania	9	0		1	2011	2	3	0
Benin	RCC	0		1	2013	1	2	-1
Cameroon	9	0		1	2011	1	3	-1
ngo	8	0		1	2012	1	3	-1
Senegal	10	0		1	2015	1	3	-1
Sierra Leone	10	0		0		0	1	-1
Namibia	RCC	0		0		0	1	-2
Sudan – South	10	0		0		0	2	-2
Congo (DRC)	10	0		0		0	3	-3
Sudan – North	10	0		0		0	3	-3
Guinea	10	0		0		0	4	-4
Cape Verde	10	0		0		0	6	-6
Ethiopia	8	0		0		0	6	-6
Niger	7	0		0		0	6	-6
Zambia	7	0		0		0	6	-6
Ghana	RCC	0		0		0	6	-7
<i>Botswana</i>	<i>None</i>	-		-		-	-	<i>No data</i>
<i>Equatorial Guinea</i>	<i>None</i>	-		-		-	-	<i>No data</i>
<i>Gabon</i>	<i>None</i>	-		-		-	-	<i>No data</i>
<i>Mauritania</i>	<i>None</i>	-		-		-	-	<i>No data</i>
<i>South Africa</i>	<i>None</i>	-		-		-	-	<i>No data</i>

**Annex Table 1. Country-specific LLINs needed, by delivery strategy; comparison of data from GFATM proposals, RBM Roadmaps, and NetWorks LLIN model**

Country	Delivery mode	Calculated LLIN needs									
		GFATM Proposals				RBM Roadmaps		NetWorks LLIN model			
		2010	2011	2012–16	2011–16	2010	2011	2010	2011	2012–16	2011–16
Angola	Campaign						2,974,723	10,012,410	0	0	0
	Continuous						1,940,718	0	0	12,286,713	12,286,713
	Any			56,679,646	56,679,646	12,456,021	4,915,441	10,012,410	0	12,286,713	12,286,713
Benin	Campaign		0	4,301,000	4,301,000		0	5,553,993	0	0	0
	Continuous		0	0	0		1,000,000	0	0	6,772,681	6,772,681
	Any		0	4,301,000	4,301,000	6,236,979	1,000,000	5,553,993	0	6,772,681	6,772,681
Botswana	Campaign						0	1,095,842	0	0	0
	Continuous						11,864	0	0	1,202,408	1,202,408
	Any					400,000	11,864	1,095,842	0	1,202,408	1,202,408
Burkina Faso	Campaign	8,487,000	0	9,268,000	9,268,000		0	8,327,143	0	0	0
	Continuous	1,022,000	1,052,000	2,200,000	3,252,000		1,581,318	0	0	10,218,640	10,218,640
	Any	9,509,000	1,052,000	11,468,000	12,520,000	8,487,000	1,581,318	8,327,143	0	10,218,640	10,218,640
Burundi	Campaign	2,718,104	0	4,902,980	4,902,980		2,312,519	3,871,934	0	0	0
	Continuous	700,000	700,000	2,100,000	2,800,000		746,000	0	0	4,457,925	4,457,925
	Any	3,418,104	700,000	7,002,980	7,702,980	4,626,059	3,058,519	3,871,934	0	4,457,925	4,457,925
Cameroon	Campaign	9,740,126	0	0	0			10,822,362	0	0	0
	Continuous	0	1,002,259	3,184,565	4,186,824			0	0	13,197,065	13,197,065
	Any	9,740,126	1,002,259	3,184,565	4,186,824	9,740,126		10,822,362	0	13,197,065	13,197,065
Cape Verde	Campaign							286,360	0	0	0
	Continuous							0	0	315,859	315,859
	Any							286,360	0	315,859	315,859
CAR	Campaign						2,018,055	2,476,523	0	0	0
	Continuous						349,706	0	0	2,812,887	2,812,887
	Any	218,500	2,285,400	471,110	2,756,510	2,316,024	2,367,761	2,476,523	0	2,812,887	2,812,887
Chad	Campaign							5,789,079	0	0	0
	Continuous							0	0	6,935,148	6,935,148
	Any	4,267,134	4,949,343	17,541,976	22,491,319	5,077,150		5,789,079	0	6,935,148	6,935,148

Country	Delivery mode	Calculated LLIN needs									
		GFATM Proposals				RBM Roadmaps		NetWorks LLIN model			
		2010	2011	2012–16	2011–16	2010	2011	2010	2011	2012–16	2011–16
Comoros	Campaign	0	0	388,000	388,000		51,076	370,343	0	0	0
	Continuous	10,670	15,510	46,640	62,150		15,317	0	0	429,147	429,147
	Any	10,670	15,510	434,640	450,150	365,632	66,393	370,343	0	429,147	429,147
Congo	Campaign						2,054,000	2,251,523	0	0	0
	Continuous						30,856	0	0	2,649,511	2,649,511
	Any	593,678	197,568	1,546,211	1,743,779	2,151,037	2,084,856	2,251,523	0	2,649,511	2,649,511
Congo (DRC)	Campaign						10,378,643	39,829,076	0	0	0
	Continuous	766,030	1,007,051	2,620,158	3,627,209		1,961,648	0	0	47,805,155	47,805,155
	Any	766,030	1,007,051	2,620,158	3,627,209	32,824,624	12,340,291	39,829,076	0	47,805,155	47,805,155
Cote d'Ivoire	Campaign	11,263,900	0	0	0		13,020,016	12,363,650	0	0	0
	Continuous	0	2,497,667	5,153,334	7,651,001		1,430,548	0	0	14,521,190	14,521,190
	Any	11,263,900	2,497,667	5,153,334	7,651,001	11,343,673	14,450,564	12,363,650	0	14,521,190	14,521,190
Djibouti	Campaign	416,500	0	871,986	871,986		404,360	470,406	0	0	0
	Continuous	0	69,331	75,759	145,090		12,140	0	0	528,089	528,089
	Any	416,500	69,331	947,745	1,017,076	416,658	416,500	470,406	0	528,089	528,089
Eq. Guinea	Campaign						499,000	304,999	0	0	0
	Continuous						38,000	0	0	359,371	359,371
	Any					507,000	537,000	304,999	0	359,371	359,371
Eritrea	Campaign	1,006,789	0	958,172	958,172		1,323,292	2,100,465	0	0	0
	Continuous	274,113	282,336	898,854	1,181,190		50,000	0	0	2,577,582	2,577,582
	Any	1,280,902	282,336	1,857,026	2,139,363	1,280,902	1,373,292	2,100,465	0	2,577,582	2,577,582
Ethiopia	Campaign						6,500,000	30,642,715	0	0	0
	Continuous	2,553,181	2,036,808	12,623,728	14,660,536		16,289	0	0	36,406,434	36,406,434
	Any	2,553,181	2,036,808	12,623,728	14,660,536	23,101,294	6,516,289	30,642,715	0	36,406,434	36,406,434
Gabon	Campaign						0	781,602	0	0	0
	Continuous						432,041	0	0	885,461	885,461
	Any					932,629	432,041	781,602	0	885,461	885,461
Gambia	Campaign	470,000	0	470,000	470,000		898,519	445,798	0	0	0
	Continuous	181,001	187,857	606,560	794,417		223,716	0	0	571,563	571,563
	Any	651,001	187,857	1,076,560	1,264,417	898,519	1,122,235	445,798	0	571,563	571,563

Country	Delivery mode	Calculated LLIN needs									
		GFATM Proposals				RBM Roadmaps		NetWorks LLIN model			
		2010	2011	2012–16	2011–16	2010	2011	2010	2011	2012–16	2011–16
Ghana	Campaign	0	0	0	0	12,335,679	14,056,991	0	0	0	0
	Continuous	759,410	1,850,235	2,609,645	0	0	0	16,215,747	16,215,747		
	Any	759,410	1,850,235	2,609,645	11,847,628	12,335,679	14,056,991	0	16,215,747	16,215,747	
Guinea	Campaign					5,370,991	6,013,479	0	0	0	0
	Continuous					970,203	0	0	7,263,687	7,263,687	
	Any					5,535,475	6,341,194	6,013,479	0	7,263,687	7,263,687
Guinea Bissau	Campaign	0	748,798	688,070	1,436,868		876,239	0	0	0	0
	Continuous	58,559	68,953	283,199	352,152		0	0	1,028,490	1,028,490	
	Any	58,559	817,751	971,269	1,789,020	1,020,133	876,239	0	1,028,490	1,028,490	
Kenya	Campaign		10,600,000	7,963,973	18,563,973	10,600,000	17,509,445	0	0	0	0
	Continuous	2,654,084	2,709,264	14,507,904	17,217,168	2,300,000	0	0	20,895,977	20,895,977	
	Any	2,654,084	13,309,264	22,471,877	35,781,141	13,797,115	12,900,000	17,509,445	0	20,895,977	20,895,977
Liberia	Campaign	902,680	533,242	3,199,965	3,733,207	741,400	2,022,690	0	0	0	0
	Continuous	0	185,172	780,397	965,569	185,172	0	0	2,415,427	2,415,427	
	Any	902,680	718,414	3,980,362	4,698,776	2,661,824	926,572	2,022,690	0	2,415,427	2,415,427
Madagascar	Campaign		0	4,009,131	4,009,131	0	10,698,067	0	0	0	0
	Continuous		4,198,004	500,000	4,698,004	967,028	0	0	12,734,645	12,734,645	
	Any		4,198,004	4,509,131	8,707,135	7,615,971	967,028	10,698,067	0	12,734,645	12,734,645
Malawi	Campaign	0	6,400,083	6,952,883	13,352,965	6,900,000	7,537,532	0	0	0	0
	Continuous	678,378	697,372	2,211,478	2,908,851	0	0	0	9,098,820	9,098,820	
	Any	678,378	7,097,455	9,164,361	16,261,816	6,904,139	6,900,000	7,537,532	0	9,098,820	9,098,820
Mali	Campaign		8,666,667	6,606,669	15,273,336	8,656,237	8,552,630	0	0	0	0
	Continuous		1,402,310	6,132,577	7,534,887	1,402,310	0	0	9,098,820	9,098,820	
	Any		10,068,977	12,739,246	22,808,223	7,340,142	10,058,547	8,552,630	0	9,098,820	9,098,820
Mauritania	Campaign						1,894,416	0	0	0	0
	Continuous						0	0	2,190,982	2,190,982	
	Any					1,600,000	1,894,416	0	2,190,982	2,190,982	
Mozambique	Campaign	6,556,222	0	7,027,172	7,027,172	5,774,121	12,141,326	0	0	0	0
	Continuous	983,542	1,006,556	3,162,813	4,169,369	1,427,712	0	0	14,342,400	14,342,400	
	Any	7,539,764	1,006,556	10,189,985	11,196,541	10,927,194	7,201,833	12,141,326	0	14,342,400	14,342,400
Namibia	Campaign	0	0	0	0		498,116	0	0	0	0
	Continuous	188,245	565,876	754,121			0	0	563,574	563,574	
	Any	188,245	565,876	754,121	856,619	520,000	498,116	0	563,574	563,574	



Country	Delivery mode	Calculated LLIN needs									
		GFATM Proposals				RBM Roadmaps		NetWorks LLIN model			
		2010	2011	2012–16	2011–16	2010	2011	2010	2011	2012–16	2011–16
Niger	Campaign			0	0		8,739,308	8,357,656	0	0	0
	Continuous	3,832,121	3,957,622	4,087,235	8,044,857		800,000	0	0	10,735,444	10,735,444
	Any	3,832,121	3,957,622	4,087,235	8,044,857	7,618,000	9,539,308	8,357,656	0	10,735,444	10,735,444
Nigeria	Campaign						9,300,000	86,476,670	0	0	0
	Continuous						8,202,740	0	0	100,336,651	100,336,651
	Any	34,513,064	8,202,740	53,442,152	61,644,892	62,900,000	17,502,740	86,476,670	0	100,336,651	100,336,651
Rwanda	Campaign						3,915,745	5,616,871	0	0	0
	Continuous						4,857,664	0	0	6,806,156	6,806,156
	Any	966,492	993,554	5,897,565	6,891,119	6,035,682	8,773,409	5,616,871	0	6,806,156	6,806,156
Sao Tome & Principe	Campaign		28,526	38,372	66,898		86,125	95,170	0	0	0
	Continuous		3,315	125,442	128,757		6,502	0	0	107,327	107,327
	Any	71,960	31,841	163,814	195,655	79,000	92,627	95,170	0	107,327	107,327
Senegal	Campaign	4,815,513	5,120,997	5,375,504	10,496,501		1,389,171	6,766,316	0	0	0
	Continuous			0	0		621,613	0	0	8,044,149	8,044,149
	Any	4,815,513	5,120,997	5,375,504	10,496,501	6,089,684	2,010,784	6,766,316	0	8,044,149	8,044,149
Sierra Leone	Campaign			0	0		3,254,927	3,181,478	0	0	0
	Continuous	1,264,290	1,295,818	1,328,285	2,624,103		503,013	0	0	3,741,454	3,741,454
	Any	1,264,290	1,295,818	1,328,285	2,624,103	3,012,039	3,757,940	3,181,478	0	3,741,454	3,741,454
Somalia	Campaign		2,058,858	11,225,282	13,284,140			2,055,556	0	0	0
	Continuous		0	0	0			0	0	2,506,597	2,506,597
	Any		2,058,858	11,225,282	13,284,140	2,750,000		2,055,556	0	2,506,597	2,506,597
South Africa	Campaign							13,772,665	0	0	0
	Continuous							0	0	14,341,634	14,341,634
	Any							13,772,665	0	14,341,634	14,341,634
Sudan – North	Campaign						1,786,418	18,303,220	0	0	0
	Continuous						0	0	0	21,073,286	21,073,286
	Any	1,123,291	1,786,418	18,395,481	20,181,899	1,081,000	1,786,418	18,303,220	0	21,073,286	21,073,286
Sudan – South	Campaign							4,868,641	0	0	0
	Continuous							0	0	5,605,476	5,605,476
	Any			10,268,129	10,268,129	6,000,000		4,868,641	0	5,605,476	5,605,476

Country	Delivery mode	Calculated LLIN needs									
		GFATM Proposals				RBM Roadmaps		NetWorks LLIN model			
		2010	2011	2012–16	2011–16	2010	2011	2010	2011	2012–16	2011–16
Swaziland	Campaign	111,270	166,905	511,261	678,166	0	0	209,415	0	0	0
	Continuous			0	0	0	0	0	0	231,290	231,290
	Any	111,270	166,905	511,261	678,166	0	0	209,415	0	231,290	231,290
Tanzania	Campaign	9,362,852	10,637,476	0	10,637,476	6,323,066	0	23,229,803	0	0	0
	Continuous	1,484,644	2,355,779	34,666,492	37,022,272	987,362	0	0	0	28,362,835	28,362,835
	Any	10,847,496	12,993,255	34,666,492	47,659,748	22,000,000	7,310,428	23,229,803	0	28,362,835	28,362,835
Togo	Campaign	6,556,222	0	7,027,172	7,027,172	3,371,880	0	3,405,939	0	0	0
	Continuous	521,050	536,350	1,702,550	2,238,900	0	0	0	0	4,153,288	4,153,288
	Any	7,077,272	536,350	8,729,722	9,266,072	3,371,880	3,371,880	3,405,939	0	4,153,288	4,153,288
Uganda	Campaign	17,600,000	10,400,000	19,869,200	30,269,200	10,371,134	0	17,658,167	0	0	0
	Continuous	1,000,000	1,496,268	13,890,726	15,386,994	2,111,000	0	0	0	22,359,586	22,359,586
	Any	18,600,000	11,896,268	33,759,926	45,656,194	20,607,510	12,482,134	17,658,167	0	22,359,586	22,359,586
Zambia	Campaign							7,382,291	0	0	0
	Continuous							0	0	9,059,167	9,059,167
	Any	5,535,096	5,696,555	5,842,144	11,538,699	7,367,600		7,382,291	0	9,059,167	9,059,167
Zanzibar	Campaign	0	0	615,000	615,000	640,000	0	702,124	0	0	0
	Continuous	82,000	82,000	0	82,000	52,338	0	0	0	857,270	857,270
	Any	82,000	82,000	615,000	697,000	254,000	692,338	702,124	0	857,270	857,270
Zimbabwe	Campaign	1,200,000	0	1,821,883	1,821,883	600,000	0	1,814,756	0	0	0
	Continuous	150,000	150,000	750,000	900,000	400,000	0	0	0	2,100,202	2,100,202
	Any	1,350,000	150,000	2,571,883	2,721,883	2,000,000	1,000,000	1,814,756	0	2,100,202	2,100,202
TOTAL	Campaign	81,207,177	55,361,551	104,091,675	159,453,226	0	142,590,405	423,493,890	0	0	0
	Continuous	18,215,664	29,943,258	116,054,807	145,998,065	0	35,634,818	0	0	501,203,212	501,203,212
	Any	146,712,055	109,416,386	390,230,897	499,647,283	344,433,962	178,745,223	423,493,890	0	501,203,212	501,203,212
	% campaign	55.4	50.6	26.7	31.9	0.0	79.8	100.0	-	0.0	0.0
	% continuous	12.4	27.4	29.7	29.2	0.0	19.9	0.0	-	100.0	100.0
	% unspecified	32.2	22.0	43.6	38.9	100.0	0.3	0.0	-	0.0	0.0
	No. countries	32	38	40	40	44	38	47	47	47	47

**Annex Table 2. Country-specific LLINs funded, by delivery strategy; comparison of data from GFATM proposals, RBM Roadmaps, and Net Mapping project**

Country	Delivery mode	Funded LLINs							
		GFATM proposals (GF-funded and other sources)					RBM Roadmaps		Net Mapping project 2008–10
		2008–10	2010	2011	2012–16	2011–16	2010	2011	
Angola	Campaign	2,641,915	0	0	4,280,055	4,280,055		1,296,882	
	Continuous	2,464,742	1,225,519	1,262,285	16,297,837	17,560,122		1,940,718	
	Any	5,106,657	1,225,519	1,262,285	20,577,892	21,840,177	3,192,000	3,237,600	5,954,407
Benin	Campaign	2,738,000	2,738,000	0	4,301,000	4,301,000		0	
	Continuous	794,800	403,133	0	0	0		1,000,000	
	Any	3,532,800	3,141,133	0	4,301,000	4,301,000	5,228,500	1,000,000	3,752,221
Botswana	Campaign							0	
	Continuous							11,864	
	Any						10,000	11,864	176,110
Burkina Faso	Campaign	12,088,000	8,487,000	0	9,268,000	9,268,000		0	
	Continuous	2,355,311	553,177	349,161	442,951	792,112		300,709	
	Any	14,443,311	9,040,177	349,161	9,710,951	10,060,112	7,466,134	300,709	7,191,145
Burundi	Campaign	4,626,059	2,718,104	0	4,902,980	4,902,980		2,218,104	
	Continuous	1,000,000	500,000	500,000	1,500,000	2,000,000		746,000	
	Any	5,626,059	3,218,104	500,000	6,402,980	6,902,980	2,087,955	2,964,104	6,658,222
Cameroon	Campaign	8,766,758	8,766,758	0	0	0			
	Continuous	2,312,403	973,368	1,002,259	3,184,565	4,186,824			
	Any	11,079,161	9,740,126	1,002,259	3,184,565	4,186,824	10,139,778		1,602,492
Cape Verde	Campaign								
	Continuous								
	Any								
CAR	Campaign	2,403,444	218,500	2,285,400	471,110	2,756,510		266,000	
	Continuous	0	0	0	0	0		0	
	Any	2,403,444	218,500	2,285,400	471,110	2,756,510	1,366,000	266,000	1,991,536
Chad	Campaign	4,046,569	3,742,354	242,715	242,715	485,430			
	Continuous	546,930	242,715	619,429	2,087,587	2,707,016			
	Any	4,593,499	3,985,069	862,144	2,330,302	3,192,446	1,308,990		1,763,668

Country	Delivery mode	Funded LLINs							Net Mapping project 2008–10
		GFATM proposals (GF-funded and other sources)					RBM Roadmaps		
		2008–10	2010	2011	2012–16	2011–16	2010	2011	
Comoros	Campaign	441,500	0	0	388,000	388,000		0	361,204
	Continuous	13,695	10,670	15,510	46,640	62,150		4,794	
	Any	455,195	10,670	15,510	434,640	450,150	365,700	4,794	
Congo	Campaign	1,393,610	0	0	1,412,672	1,412,672		2,054,000	3,274,815
	Continuous	893,678	593,678	197,568	133,539	331,107		30,856	
	Any	2,287,288	593,678	197,568	1,546,211	1,743,779	2,161,786	2,084,856	
Congo (DRC)	Campaign	26,729,058	8,888,100	7,081,940	16,979,460	24,061,400		10,378,643	27,789,873
	Continuous	1,852,153	766,030	1,007,051	7,550,931	8,557,982		1,903,563	
	Any	28,581,211	9,654,130	8,088,991	24,530,391	32,619,382	23,500,145	12,282,206	
Cote d'Ivoire	Campaign	11,263,900	11,263,900	0	0	0		8,903,800	10,161,931
	Continuous	1,458,426	0	2,497,667	5,153,334	7,651,001		943,100	
	Any	12,722,326	11,263,900	2,497,667	5,153,334	7,651,001	12,327,873	9,846,900	
Djibouti	Campaign	653,425	416,500	0	871,986	871,986		216,019	110,811
	Continuous	0	0	26,000	26,000	52,000		6,481	
	Any	653,425	416,500	26,000	897,986	923,986	242,300	222,500	
Eq. Guinea	Campaign							433,000	111,150
	Continuous							0	
	Any						228,000	433,000	
Eritrea	Campaign	732,676	732,676	0	658,642	658,642		1,323,292	1,966,942
	Continuous	1,136,295	548,226	159,900	806,883	966,783		50,000	
	Any	1,868,971	1,280,902	159,900	1,465,525	1,625,425	189,331	1,373,292	
Ethiopia	Campaign	0	0	0	0	0		3,800,000	19,277,843
	Continuous	9,282,240	2,240,808	611,042	3,787,118	4,398,161		0	
	Any	9,282,240	2,240,808	611,042	3,787,118	4,398,161	14,351,870	3,800,000	
Gabon	Campaign	0		0	0	0		0	143,979
	Continuous	0		0	0	0		89,000	
	Any	0		0	0	0	839,170	89,000	
Gambia	Campaign	470,000	470,000	0	470,000	470,000		898,519	969,653
	Continuous	383,613	64,957	555,221	1,322,715	1,877,936		223,716	
	Any	853,613	534,957	555,221	1,792,715	2,347,936	150,360	1,122,235	

Country	Delivery mode	Funded LLINs							
		GFATM proposals (GF-funded and other sources)					RBM Roadmaps		Net Mapping project 2008–10
		2008–10	2010	2011	2012–16	2011–16	2010	2011	
Ghana	Campaign	0	0	0	0	0		12,362,207	
	Continuous	2,361,512	1,289,576	759,410	1,850,235	2,609,645		0	
	Any	2,361,512	1,289,576	759,410	1,850,235	2,609,645	3,602,006	12,362,207	10,020,180
Guinea	Campaign	2,745,014	0	0	3,029,438	3,029,438		3,534,086	
	Continuous	0	0	1,690,000	338,803	2,028,803		236,864	
	Any	2,745,014	0	1,690,000	3,368,241	5,058,241	3,769,459	3,770,950	3,598,568
Guinea Bissau	Campaign	0	0	748,798	688,070	1,436,868			
	Continuous	107,745	58,559	68,953	283,199	352,152			
	Any	107,745	58,559	817,751	971,269	1,789,020	958,817		222,381
Kenya	Campaign	3,680,458	0	10,600,000	6,371,178	16,971,178		10,600,000	
	Continuous	4,083,168	2,654,084	2,709,264	10,050,845	12,760,109		2,300,000	
	Any	7,763,626	2,654,084	13,309,264	16,422,023	29,731,287	8,441,364	12,900,000	14,834,117
Liberia	Campaign	1,756,660	902,680	533,242	3,495,198	4,028,440		741,400	
	Continuous	0	0	185,172	1,000,000	1,185,172		185,172	
	Any	1,756,660	902,680	718,414	4,495,198	5,213,612	2,312,874	926,572	2,468,523
Madagascar	Campaign	1,546,188	0	0	4,009,131	4,009,131		0	
	Continuous	3,201,149	1,658,566	4,198,004	500,000	4,698,004		680,257	
	Any	4,747,337	1,658,566	4,198,004	4,509,131	8,707,135	7,615,971	680,257	9,370,347
Malawi	Campaign	1,339,000	0	7,097,455	9,210,490	16,307,945		6,248,000	
	Continuous	3,487,475	1,797,463	500,000	1,979,666	2,479,666		0	
	Any	4,826,475	1,797,463	7,597,455	11,190,156	18,787,611	2,655,489	6,248,000	3,118,856
Mali	Campaign		0	8,666,667	4,900,000	13,566,667		4,145,000	
	Continuous		0	1,402,310	4,852,794	6,255,104		1,402,310	
	Any		0	10,068,977	9,752,794	19,821,771	7,340,142	5,547,310	4,575,711
Mauritania	Campaign								
	Continuous								
	Any						950,850		432,353
Mozambique	Campaign	10,156,222	6,556,222	0	7,027,172	7,027,172		5,505,079	
	Continuous	3,244,292	983,542	1,006,556	3,162,813	4,169,369		1,427,712	
	Any	13,400,514	7,539,764	1,006,556	10,189,985	11,196,541	2,719,194	6,932,791	7,825,673

Country	Delivery mode	Funded LLINs							
		GFATM proposals (GF-funded and other sources)					RBM Roadmaps		Net Mapping project 2008–10
		2008–10	2010	2011	2012–16	2011–16	2010	2011	
Namibia	Campaign	0	0	0	0	0			
	Continuous	550,524	173,787	175,814	266,802	442,616			
	Any	550,524	173,787	175,814	266,802	442,616	436,704	174,000	360,362
Niger	Campaign	2,453,000	498,000	515,000	531,000	1,046,000		47,450	
	Continuous	1,331,056	518,600	612,096	711,160	1,323,256		0	
	Any	3,784,056	1,016,600	1,127,096	1,242,160	2,369,256	5,115,720	47,450	4,127,790
Nigeria	Campaign	80,112,069	34,513,064	0	43,442,152	43,442,152		6,300,000	
	Continuous	0	0	8,202,740	10,000,000	18,202,740		1,500,000	
	Any	80,112,069	34,513,064	8,202,740	53,442,152	61,644,892	53,778,000	7,800,000	65,032,485
Rwanda	Campaign	5,846,687	0	0	4,847,593	4,847,593		3,915,745	
	Continuous	1,466,492	966,492	993,554	1,049,972	2,043,526		4,857,664	
	Any	7,313,179	966,492	993,554	5,897,565	6,891,119	6,035,682	8,773,409	6,410,680
Sao Tome & Principe	Campaign	110,598	68,386	28,526	38,372	66,898		110,260	
	Continuous	39,547	3,574	3,315	125,442	128,757		0	
	Any	150,145	71,960	31,841	163,814	195,655	54,517	110,260	63,126
Senegal	Campaign	0	0	0	0	0		1,389,171	
	Continuous	2,056,621	305,139	486,349	501,284	987,632		10,829	
	Any	2,056,621	305,139	486,349	501,284	987,632	5,296,819	1,400,000	8,623,609
Sierra Leone	Campaign	0	0	0	0	0		3,254,927	
	Continuous	1,337,914	712,919	741,120	3,160,748	3,901,868		59,205	
	Any	1,337,914	712,919	741,120	3,160,748	3,901,868	1,386,416	3,314,132	4,428,853
Somalia	Campaign		0	773,165	3,075,000	3,848,165			
	Continuous		0	0	1,075,000	1,075,000			
	Any		0	773,165	4,150,000	4,923,165	1,292,065		715,099
South Africa	Campaign								
	Continuous								
	Any								89,928
Sudan – North	Campaign	0	0	0	12,452,951	12,452,951		1,400,000	
	Continuous	5,129,031	1,234,750	1,787,974	4,692,531	6,480,505		0	
	Any	5,129,031	1,234,750	1,787,974	17,145,482	18,933,456	650,000	1,400,000	6,866,462

Country	Delivery mode	Funded LLINs							
		GFATM proposals (GF-funded and other sources)					RBM Roadmaps		Net Mapping project 2008–10
		2008–10	2010	2011	2012–16	2011–16	2010	2011	
Sudan – South	Campaign	6,233,680	1,297,017	0	0	0			
	Continuous	650,681	0	1,038,261	1,067,852	2,106,113			
	Any	6,884,361	1,297,017	1,038,261	1,067,852	2,106,113	6,200,000		6,712,138
Swaziland	Campaign	166,905	111,270	166,905	511,261	678,166		114,656	
	Continuous	0	0	0	0	0		0	
	Any	166,905	111,270	166,905	511,261	678,166		114,656	203,450
Tanzania	Campaign	16,585,023	9,362,852	10,320,760	0	10,320,760		0	
	Continuous	1,484,646	1,484,646	1,394,645	4,620,000	6,014,645		0	
	Any	18,069,669	10,847,498	11,715,405	4,620,000	16,335,405	22,000,000	0	17,592,625
Togo	Campaign	4,662,691	3,371,500	0	0	0		2,899,293	
	Continuous	908,711	521,050	536,350	1,702,550	2,238,900		0	
	Any	5,571,402	3,892,550	536,350	1,702,550	2,238,900	1,571,161	2,899,293	1,967,853
Uganda	Campaign	12,263,578	7,200,000	10,400,000	0	10,400,000		10,371,134	
	Continuous	5,337,510	1,148,134	1,937,918	13,162,864	15,100,782		1,226,000	
	Any	17,601,088	8,348,134	12,337,918	13,162,864	25,500,782	21,962,695	11,597,134	11,761,312
Zambia	Campaign	1,644,815	1,000,000	1,000,000	500,000	1,500,000			
	Continuous	1,821,070	400,000	400,000	400,000	800,000			
	Any	3,465,885	1,400,000	1,400,000	900,000	2,300,000	6,000,100		6,971,021
Zanzibar	Campaign	611,000	0	0	615,000	615,000		210,000	
	Continuous	100,000	0	0	0	0		30,000	
	Any	711,000	0	0	615,000	615,000	254,000	240,000	
Zimbabwe	Campaign	1,200,000	1,200,000	0	1,821,883	1,821,883		0	
	Continuous	920,557	0	150,000	900,000	1,050,000		0	
	Any	2,120,557	1,200,000	150,000	2,721,883	2,871,883	2,000,300	0	2,186,433
TOTAL	Campaign	232,108,501	114,522,883	60,460,573	150,812,509	211,273,082	0	104,936,667	0
	Continuous	64,113,987	24,033,162	39,782,898	109,794,660	149,577,558	0	21,166,814	0
	Any	296,222,488	138,556,045	100,243,471	260,607,169	360,850,640	259,556,237	126,277,481	293,837,937
	% campaign	78.4	82.7	60.3	57.9	58.5	0.0	83.1	0.0
	% continuous	21.6	17.3	39.7	42.1	41.5	0.0	16.8	0.0
	% unspecified	0.0	0.0	0.0	0.0	0.0	100.0	0.1	100.0
	No. countries	40	41	42	42	42	44	38	45

**Annex Table 3. Country-specific remaining LLIN gaps, by delivery strategy; comparison of data from GFATM proposals, RBM Roadmaps, and NetWorks LLIN model**

Country	Delivery mode	Remaining LLIN gap							
		GFATM proposals			RBM Roadmaps		NetWorks LLIN model minus funded nets (GFATM review)		
		2011	2012–16	2011–16	2010	2011	2011	2012–16	2011–16
Angola	Campaign			0		1,677,841	0	-4,280,055	-4,280,055
	Continuous			0		0	-1,262,285	-4,011,124	-5,273,409
	Any	-1,262,285	791,737	-470,548	3,365,200	1,677,841	-1,262,285	-8,291,179	-9,553,464
Benin	Campaign	0				0	0	-4,301,000	-4,301,000
	Continuous	0				0	0	6,772,681	6,772,681
	Any	0			1,008,479	0	0	2,471,681	2,471,681
Botswana	Campaign					0	0	0	0
	Continuous					0	0	1,202,408	1,202,408
	Any				390,000	0	0	1,202,408	1,202,408
Burkina Faso	Campaign	0	0	0		0	0	-9,268,000	-9,268,000
	Continuous	702,839	1,116,000	1,818,839		1,280,609	-349,161	9,775,689	9,426,528
	Any	702,839	1,116,000	1,818,839	1,020,866	1,280,609	-349,161	507,689	158,528
Burundi	Campaign	0	0	0		94,415	0	-4,902,980	-4,902,980
	Continuous	200,000	600,000	800,000		0	-500,000	2,957,925	2,457,925
	Any	200,000	600,000	800,000	2,539,532	94,415	-500,000	-1,945,055	-2,445,055
Cameroon	Campaign	0	0	0			0	0	0
	Continuous	0	0	0			-1,002,259	10,012,500	9,010,241
	Any	0	0	0	0		-1,002,259	10,012,500	9,010,241
Cape Verde	Campaign						0	0	0
	Continuous						0	315,859	315,859
	Any						0	315,859	315,859
CAR	Campaign					1,752,055	-2,285,400	-471,110	-2,756,510
	Continuous					349,706	0	2,812,887	2,812,887
	Any	0	0	0	950,024	2,101,761	-2,285,400	2,341,777	56,377
Chad	Campaign						-242,715	-242,715	-485,430
	Continuous						-619,429	4,847,561	4,228,132
	Any	4,087,199	0	4,087,199	3,768,160		-862,144	4,604,846	3,742,702



Country	Delivery mode	Remaining LLIN gap							
		GFATM proposals			RBM Roadmaps		NetWorks LLIN model minus funded nets (GFATM review)		
		2011	2012–16	2011–16	2010	2011	2011	2012–16	2011–16
Comoros	Campaign	0	0	0			0	-388,000	-388,000
	Continuous	0	0	0		10,523	-15,510	382,507	366,997
	Any	0	0	0	0	61,599	-15,510	-5,493	-21,003
Congo	Campaign					0	0	-1,412,672	-1,412,672
	Continuous					0	-197,568	2,515,972	2,318,404
	Any	0	0	0	0	0	-197,568	1,103,300	905,732
Congo (DRC)	Campaign					0	-7,081,940	-16,979,460	-24,061,400
	Continuous	0	0	0		58,085	-1,007,051	40,254,224	39,247,174
	Any		0	0	9,324,479	58,085	-8,088,991	23,274,764	15,185,774
Cote d'Ivoire	Campaign	0	0	0		4,116,216	0	0	0
	Continuous	0	0	0		487,448	-2,497,667	9,367,856	6,870,189
	Any	0	0	0	0	4,603,664	-2,497,667	9,367,856	6,870,189
Djibouti	Campaign	0	0	0		188,341	0	-871,986	-871,986
	Continuous	43,331	49,759	93,090		5,659	-26,000	502,089	476,089
	Any	43,331	49,759	93,090	174,358	194,000	-26,000	-369,897	-395,897
Eq. Guinea	Campaign					66,000	0	0	0
	Continuous					38,000	0	359,371	359,371
	Any				286,000	104,000	0	359,371	359,371
Eritrea	Campaign	0	0	0		0	0	-658,642	-658,642
	Continuous	122,436	219,925	342,361		0	-159,900	1,770,699	1,610,799
	Any	122,436	219,925	342,361	1,091,568	0	-159,900	1,112,057	952,157
Ethiopia	Campaign	0				2,700,000	0	0	0
	Continuous	1,425,766	8,836,610	10,262,375		16,289	-611,042	32,619,316	32,008,274
	Any	1,425,766	8,836,610	10,262,375	8,749,424	2,716,289	-611,042	32,619,316	32,008,274
Gabon	Campaign					0	0	0	0
	Continuous					343,041	0	885,461	885,461
	Any				93,458	343,041	0	885,461	885,461
Gambia	Campaign	0	0	0		0	0	-470,000	-470,000
	Continuous	-367,364	0	-367,364		0	-555,221	-751,152	-1,306,373
	Any	-367,364	0	-367,364	715,201	0	-555,221	-1,221,152	-1,776,373

Country	Delivery mode	Remaining LLIN gap							
		GFATM proposals			RBM Roadmaps		NetWorks LLIN model minus funded nets (GFATM review)		
		2011	2012–16	2011–16	2010	2011	2011	2012–16	2011–16
Ghana	Campaign	0				-26,528	0	0	0
	Continuous	0				0	-759,410	14,365,512	13,606,102
	Any	0			7,545,622	-26,528	-759,410	14,365,512	13,606,102
Guinea	Campaign					1,836,905	0	-3,029,438	-3,029,438
	Continuous					733,339	-1,690,000	6,924,884	5,234,884
	Any				1,766,016	2,570,244	-1,690,000	3,895,446	2,205,446
Guinea Bissau	Campaign	0	0	0			-748,798	-688,070	-1,436,868
	Continuous	0	0	0			-68,953	745,291	676,338
	Any	0	0	0	61,316		-817,751	57,221	-760,530
Kenya	Campaign	0	1,592,795	1,592,795		0	-10,600,000	-6,371,178	-16,971,178
	Continuous	0	4,495,479	4,495,479		0	-2,709,264	10,845,132	8,135,868
	Any	0	6,088,274	6,088,274	5,355,751	0	-13,309,264	4,473,954	-8,835,310
Liberia	Campaign		0	0		-122,924	-533,242	-3,495,198	-4,028,440
	Continuous		0	0		0	-185,172	1,415,427	1,230,255
	Any		0	0	348,950	-122,924	-718,414	-2,079,771	-2,798,185
Madagascar	Campaign	0				0	0	-4,009,131	-4,009,131
	Continuous	0				286,771	-4,198,004	12,234,645	8,036,641
	Any	0			0	286,771	-4,198,004	8,225,514	4,027,510
Malawi	Campaign		0	0		652,000	-7,097,455	-9,210,490	-16,307,945
	Continuous		0	0		0	-500,000	7,119,154	6,619,154
	Any		0	0	4,248,650	652,000	-7,597,455	-2,091,336	-9,688,791
Mali	Campaign	0	1,706,669	1,706,669		4,511,237	-8,666,667	-4,900,000	-13,566,667
	Continuous	0	1,779,783	1,779,783		0	-1,402,310	4,246,026	2,843,716
	Any	0	3,486,452	3,486,452	0	4,511,237	-10,068,977	-653,974	-10,722,951
Mauritania	Campaign						0	0	0
	Continuous						0	2,190,982	2,190,982
	Any				649,150		0	2,190,982	2,190,982
Mozambique	Campaign	0	0	0		269,042	0	-7,027,172	-7,027,172
	Continuous	0	0	0		0	-1,006,556	11,179,587	10,173,031
	Any	0	0	0	8,208,000	269,042	-1,006,556	4,152,415	3,145,859

Country	Delivery mode	Remaining LLIN gap							
		GFATM proposals			RBM Roadmaps		NetWorks LLIN model minus funded nets (GFATM review)		
		2011	2012–16	2011–16	2010	2011	2011	2012–16	2011–16
Namibia	Campaign	0					0	0	0
	Continuous	12,431					-175,814	296,772	120,958
	Any	12,431			436,704	346,000	-175,814	296,772	120,958
Niger	Campaign	-515,000				8,691,858	-515,000	-531,000	-1,046,000
	Continuous	3,345,526	2,106,646	5,452,172		800,000	-612,096	10,024,284	9,412,188
	Any	2,830,526	2,106,646	4,937,172	2,506,280	9,491,858	-1,127,096	9,493,284	8,366,188
Nigeria	Campaign					3,000,000	0	-43,442,152	-43,442,152
	Continuous					6,702,740	-8,202,740	90,336,651	82,133,911
	Any	0	0	0	9,200,000	9,702,740	-8,202,740	46,894,499	38,691,759
Rwanda	Campaign					2,067,356	0	-4,847,593	-4,847,593
	Continuous					3,968,326	-993,554	5,756,184	4,762,630
	Any	0	0	0	0	6,035,682	-993,554	908,591	-84,963
Sao Tome & Principe	Campaign	0				-24,135	-28,526	-38,372	-66,898
	Continuous	0				6,502	-3,315	-18,115	-21,430
	Any	0	0	0	24,483	-17,633	-31,841	-56,487	-88,328
Senegal	Campaign		55,698	55,698		0	0	0	0
	Continuous					610,784	-486,349	7,542,865	7,056,516
	Any	4,634,648		4,634,648	792,865	610,784	-486,349	7,542,865	7,056,516
Sierra Leone	Campaign	0				0	0	0	0
	Continuous	554,698		554,698		443,808	-741,120	580,706	-160,414
	Any	554,698		554,698	1,625,623	443,808	-741,120	580,706	-160,414
Somalia	Campaign	1,285,693	100,564	1,386,257			-773,165	-3,075,000	-3,848,165
	Continuous	0	0	0			0	1,431,597	1,431,597
	Any	1,285,693	100,564	1,386,257	1,457,935		-773,165	-1,643,403	-2,416,568
South Africa	Campaign						0	0	0
	Continuous						0	14,341,634	14,341,634
	Any						0	14,341,634	14,341,634
Sudan – North	Campaign					386,418	0	-12,452,951	-12,452,951
	Continuous					0	-1,787,974	16,380,755	14,592,781
	Any	-1,556	0	-1,556	431,000	386,418	-1,787,974	3,927,804	2,139,830

Country	Delivery mode	Remaining LLIN gap							
		GFATM proposals			RBM Roadmaps		NetWorks LLIN model minus funded nets (GFATM review)		
		2011	2012–16	2011–16	2010	2011	2011	2012–16	2011–16
Sudan – South	Campaign						0	0	0
	Continuous						-1,038,261	4,537,624	3,499,363
	Any		0	0	0		-1,038,261	4,537,624	3,499,363
Swaziland	Campaign	0		0		-114,656	-166,905	-511,261	-678,166
	Continuous	0				0	0	231,290	231,290
	Any	0		0		-114,656	-166,905	-279,971	-446,876
Tanzania	Campaign	316,716				6,323,066	-10,320,760	0	-10,320,760
	Continuous	961,134				987,362	-1,394,645	23,742,835	22,348,190
	Any	1,277,850			0	7,310,428	-11,715,405	23,742,835	12,027,430
Togo	Campaign	0	0	0		472,587	0	0	0
	Continuous	0	0	0		0	-536,350	2,450,738	1,914,388
	Any	0	0	0	1,800,719	472,587	-536,350	2,450,738	1,914,388
Uganda	Campaign	0	0	0		0	-10,400,000	0	-10,400,000
	Continuous	148,134	989,944	1,138,078		885,000	-1,937,918	9,196,722	7,258,804
	Any	148,134	989,944	1,138,078	0	885,000	-12,337,918	9,196,722	-3,141,196
Zambia	Campaign						-1,000,000	-500,000	-1,500,000
	Continuous						-400,000	8,659,167	8,259,167
	Any	4,296,555	4,542,144	8,838,699	1,367,500		-1,400,000	8,159,167	6,759,167
Zanzibar	Campaign	0	0	0		430,000	0	-615,000	-615,000
	Continuous	82,000	0	82,000		22,338	0	857,270	857,270
	Any	82,000	0	82,000	0	452,338	0	242,270	242,270
Zimbabwe	Campaign	0	0	0		600,000	0	-1,821,883	-1,821,883
	Continuous	0	0	0		400,000	-150,000	1,200,202	1,050,202
	Any	0	0	0	0	1,000,000	-150,000	-621,681	-771,681
TOTAL	Campaign	1,087,409	3,455,726	4,741,419	0	39,598,170	-60,460,573	-150,812,509	-211,273,082
	Continuous	7,230,931	20,194,145	26,451,511	0	18,436,330	-39,782,898	391,408,551	351,625,653
	Any	20,072,901	28,928,054	47,710,674	81,303,313	58,380,500	-100,243,471	240,596,042	140,352,571
	% campaign	5.4	11.9	9.9	0.0	67.8	60.3	-62.7	-150.5
	% continuous	36.0	69.8	55.4	0.0	31.6	39.7	162.7	250.5
	% unspecified	58.6	18.2	34.6	100.0	0.6	0.0	0.0	0.0
	No. countries	36	32	35	44	38	47	47	47

**Annex Table 4. Predicted annual LLINs needed to reach 100% coverage and maintain at 80%, compared with expected population LLIN coverage (Exp. Cov.) based on planned LLIN distributions (predictions made by NetWorks LLIN model, based on population data in GFATM proposals)**

Country	Delivery channel	Calculated needs (Networks LLIN model)							Funded LLINs (GF Proposals)						
		2010	2011	2012	2013	2014	2015	2016	2010	2011	2012	2013	2014	2015	2016
Angola	Campaign	10,012,410							0	0	4,280,055	0	0	0	0
	Continuous	0	0	1,106,700	2,746,824	2,874,055	2,806,913	2,752,221	1,225,519	1,262,285	0	4,179,005	3,328,464	4,482,834	4,307,534
	Any	10,012,410	0	1,106,700	2,746,824	2,874,055	2,806,913	2,752,221	1,225,519	1,262,285	4,280,055	4,179,005	3,328,464	4,482,834	4,307,534
	Exp. Cov.	100.0%	90.1%	80.0%	80.0%	80.0%	80.0%	80.0%	12.3%	23.3%	59.9%	88.6%	100.6%	114.4%	120.3%
Benin	Campaign	5,553,993							2,738,000	0	0	4,301,000	0	0	0
	Continuous	0	0	604,750	1,518,054	1,586,863	1,547,654	1,515,360	0	0	0	0	0	0	0
	Any	5,553,993	0	604,750	1,518,054	1,586,863	1,547,654	1,515,360	2,738,000	0	0	4,301,000	0	0	0
	Exp. Cov.	100.0%	90.2%	80.0%	80.0%	80.0%	80.0%	80.0%	56.6%	51.1%	39.5%	96.9%	78.1%	55.6%	34.5%
Botswana	Campaign	1,095,842							0	0	0	0	0	0	0
	Continuous	0	0	89,968	281,812	290,023	276,378	264,227	0	0	0	0	0	0	0
	Any	1,095,842	0	89,968	281,812	290,023	276,378	264,227	0	0	0	0	0	0	0
	Exp. Cov.	100.0%	91.6%	80.0%	80.0%	80.0%	80.0%	80.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Burkina Faso	Campaign	8,327,143							8,487,000	0	0	9,268,000	0	0	0
	Continuous	0	0	920,423	2,284,485	2,390,300	2,334,459	2,288,973	553,177	349,161	442,951	0	0	0	0
	Any	8,327,143	0	920,423	2,284,485	2,390,300	2,334,459	2,288,973	9,040,177	349,161	442,951	9,268,000	0	0	0
	Exp. Cov.	100.0%	90.1%	80.0%	80.0%	80.0%	80.0%	80.0%	108.5%	101.9%	84.2%	158.4%	123.8%	85.7%	51.8%
Burundi	Campaign	3,871,934							1,907,955	2,718,104	0	0	4,902,980	0	0
	Continuous	0	0	364,476	1,023,521	1,060,799	1,021,646	987,483	500,000	500,000	500,000	500,000	500,000	500,000	0
	Any	3,871,934	0	364,476	1,023,521	1,060,799	1,021,646	987,483	2,407,955	3,218,104	500,000	500,000	5,402,980	500,000	0
	Exp. Cov.	100.0%	91.0%	80.0%	80.0%	80.0%	80.0%	80.0%	62.2%	137.9%	130.6%	110.4%	202.5%	171.0%	122.3%
Cameroon	Campaign	10,822,362							8,766,758	0	0	0	0	0	0
	Continuous	0	0	1,178,400	2,958,040	3,092,119	3,015,717	2,952,789	973,368	1,002,259	1,031,324	1,061,233	1,092,008	0	0
	Any	10,822,362	0	1,178,400	2,958,040	3,092,119	3,015,717	2,952,789	9,740,126	1,002,259	1,031,324	1,061,233	1,092,008	0	0
	Exp. Cov.	100.0%	90.2%	80.0%	80.0%	80.0%	80.0%	80.0%	90.0%	90.2%	79.9%	64.5%	49.8%	30.4%	16.7%

Country	Delivery channel	Calculated needs (Networks LLIN model)							Funded LLINs (GF Proposals)						
		2010	2011	2012	2013	2014	2015	2016	2010	2011	2012	2013	2014	2015	2016
Cape Verde	Campaign	286,360													
	Continuous	0	0	23,881	73,861	76,072	72,576	69,469							
	Any	286,360	0	23,881	73,861	76,072	72,576	69,469	0	35,000	25,000	0	0	0	0
	Exp. Cov.	100.0%	91.6%	80.0%	80.0%	80.0%	80.0%	80.0%	0.0%	12.1%	19.6%	16.5%	11.9%	7.3%	3.6%
CAR	Campaign	2,476,523							218,500	2,285,400	233,187	237,923	0	0	0
	Continuous	0	0	224,643	649,561	671,874	645,149	621,660	0	0	0	0	0	0	0
	Any	2,476,523	0	224,643	649,561	671,874	645,149	621,660	218,500	2,285,400	233,187	237,923	0	0	0
	Exp. Cov.	100.0%	91.2%	80.0%	80.0%	80.0%	80.0%	80.0%	8.8%	98.7%	98.0%	86.2%	59.9%	35.2%	17.2%
Chad	Campaign	5,789,079							3,742,354	242,715	242,715	0	0	0	0
	Continuous	0	0	603,697	1,565,958	1,632,591	1,586,081	1,546,822	242,715	619,429	1,730,614	175,762	181,211	0	0
	Any	5,789,079	0	603,697	1,565,958	1,632,591	1,586,081	1,546,822	3,985,069	862,144	1,973,329	175,762	181,211	0	0
	Exp. Cov.	100.0%	90.4%	80.0%	80.0%	80.0%	80.0%	80.0%	68.9%	76.8%	93.7%	74.0%	52.0%	30.6%	15.4%
Comoros	Campaign	370,343							0	0	388,000	0	0	0	0
	Continuous	0	0	35,466	98,262	101,938	98,315	95,166	10,670	15,510	20,680	25,960	0	0	0
	Any	370,343	0	35,466	98,262	101,938	98,315	95,166	10,670	15,510	408,680	25,960	0	0	0
	Exp. Cov.	100.0%	90.9%	80.0%	80.0%	80.0%	80.0%	80.0%	2.9%	6.7%	111.6%	107.0%	83.6%	55.5%	30.7%
Congo	Campaign	2,251,523							0	0	1,412,672	0	0	0	0
	Continuous	0	0	224,456	602,743	626,720	606,487	589,105	593,678	197,568	0	133,539	0	0	0
	Any	2,251,523	0	224,456	602,743	626,720	606,487	589,105	593,678	197,568	1,412,672	133,539	0	0	0
	Exp. Cov.	100.0%	90.7%	80.0%	80.0%	80.0%	80.0%	80.0%	26.4%	32.5%	86.3%	78.2%	57.9%	36.8%	19.6%
Congo (DRC)	Campaign	39,829,076							8,888,100	7,081,940	8,715,824	8,263,636	0	0	0
	Continuous	0	0	4,173,077	10,785,849	11,248,006	10,932,126	10,666,098	766,030	1,007,051	2,106,901	2,307,933	1,048,516	1,009,339	1,078,242
	Any	39,829,076	0	4,173,077	10,785,849	11,248,006	10,932,126	10,666,098	9,654,130	8,088,991	10,822,725	10,571,569	1,048,516	1,009,339	1,078,242
	Exp. Cov.	100.0%	90.4%	80.0%	80.0%	80.0%	80.0%	80.0%	24.3%	41.8%	60.7%	72.9%	57.8%	41.0%	26.7%
Cote d'Ivoire	Campaign	12,363,650							11,263,900	0	0	0	0	0	0
	Continuous	0	0	1,226,471	3,306,118	3,436,655	3,324,310	3,227,636	0	2,497,667	2,549,667	2,603,667	0	0	0
	Any	12,363,650	0	1,226,471	3,306,118	3,436,655	3,324,310	3,227,636	11,263,900	2,497,667	2,549,667	2,603,667	0	0	0
	Exp. Cov.	100.0%	90.7%	80.0%	80.0%	80.0%	80.0%	80.0%	91.1%	102.4%	101.9%	93.8%	64.0%	38.1%	19.6%

Country	Delivery channel	Calculated needs (Networks LLIN model)							Funded LLINs (GF Proposals)						
		2010	2011	2012	2013	2014	2015	2016	2010	2011	2012	2013	2014	2015	2016
Djibouti	Campaign	470,406							416,500	0	416,865	455,121	0	0	0
	Continuous	0	0	41,292	122,558	126,551	121,205	116,483	0	26,000	0	0	26,000	0	0
	Any	470,406	0	41,292	122,558	126,551	121,205	116,483	416,500	26,000	416,865	455,121	26,000	0	0
	Exp. Cov.	100.0%	91.3%	80.0%	80.0%	80.0%	80.0%	80.0%	88.6%	86.3%	153.9%	216.0%	176.1%	122.8%	73.7%
Equatorial Guinea	Campaign	304,999							0	0	0	0	0	0	0
	Continuous	0	0	30,506	81,710	84,977	82,257	79,922	0	0	0	0	0	0	0
	Any	304,999	0	30,506	81,710	84,977	82,257	79,922	0	0	0	0	0	0	0
	Exp. Cov.	100.0%	90.7%	80.0%	80.0%	80.0%	80.0%	80.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Eritrea	Campaign	2,100,465							732,676	0	0	658,642	0	0	0
	Continuous	0	0	232,170	576,246	602,937	588,851	577,378	548,226	159,900	119,230	599,061	88,592	0	0
	Any	2,100,465	0	232,170	576,246	602,937	588,851	577,378	1,280,902	159,900	119,230	1,257,703	88,592	0	0
	Exp. Cov.	100.0%	90.1%	80.0%	80.0%	80.0%	80.0%	80.0%	61.0%	62.4%	54.5%	92.5%	75.3%	52.3%	31.8%
Ethiopia	Campaign	30,642,715							0	0	0	0	0	0	0
	Continuous	0	0	3,130,118	8,249,013	8,589,401	8,329,583	8,108,319	5,918,551	2,240,808	611,042	2,904,727	882,392	0	0
	Any	30,642,715	0	3,130,118	8,249,013	8,589,401	8,329,583	8,108,319	5,918,551	2,240,808	611,042	2,904,727	882,392	0	0
	Exp. Cov.	100.0%	90.5%	80.0%	80.0%	80.0%	80.0%	80.0%	19.4%	24.7%	22.0%	24.5%	20.1%	13.4%	7.9%
Gabon	Campaign	781,602							0	0	0	0	0	0	0
	Continuous	0	0	70,389	204,699	211,650	203,116	195,606	0	0	0	0	0	0	0
	Any	781,602	0	70,389	204,699	211,650	203,116	195,606	0	0	0	0	0	0	0
	Exp. Cov.	100.0%	91.2%	80.0%	80.0%	80.0%	80.0%	80.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Gambia	Campaign	445,798							470,000	0	0	470,000	0	0	0
	Continuous	0	0	54,435	125,513	132,200	130,352	129,063	64,957	555,221	575,995	127,405	619,315	0	0
	Any	445,798	0	54,435	125,513	132,200	130,352	129,063	534,957	555,221	575,995	597,405	619,315	0	0
	Exp. Cov.	100.0%	89.5%	80.0%	80.0%	80.0%	80.0%	80.0%	120.0%	227.1%	309.2%	362.5%	391.2%	284.0%	181.0%
Ghana	Campaign	14,056,991							0	0	0	0	0	0	0
	Continuous	0	0	1,330,108	3,720,020	3,856,611	3,715,845	3,593,163	1,289,576	759,410	827,259	508,887	514,089	0	0
	Any	14,056,991	0	1,330,108	3,720,020	3,856,611	3,715,845	3,593,163	1,289,576	759,410	827,259	508,887	514,089	0	0
	Exp. Cov.	0	0	0	0	0	0	0	9.2%	13.7%	17.0%	16.6%	15.3%	10.5%	6.4%

Country	Delivery channel	Calculated needs (Networks LLIN model)							Funded LLINs (GF Proposals)						
		2010	2011	2012	2013	2014	2015	2016	2010	2011	2012	2013	2014	2015	2016
Guinea	Campaign	6,013,479							0	0	3,029,438	0	0	0	0
	Continuous	0	0	639,941	1,634,524	1,706,181	1,660,571	1,622,469	0	1,690,000	0	114,715	111,985	112,103	0
	Any	6,013,479	0	639,941	1,634,524	1,706,181	1,660,571	1,622,469	0	1,690,000	3,029,438	114,715	111,985	112,103	0
	Exp. Cov.	100.0%	90.3%	80.0%	80.0%	80.0%	80.0%	80.0%	0.0%	27.4%	72.5%	64.0%	49.2%	33.1%	18.3%
Guinea-Bissau	Campaign	876,239							0	748,798	0	0	688,070	0	0
	Continuous	0	0	86,779	234,225	243,450	235,458	228,578	58,559	68,953	78,409	87,539	117,251	0	0
	Any	876,239	0	86,779	234,225	243,450	235,458	228,578	58,559	817,751	78,409	87,539	805,321	0	0
	Exp. Cov.	100.0%	90.7%	80.0%	80.0%	80.0%	80.0%	80.0%	6.7%	97.3%	96.0%	84.6%	142.4%	110.5%	76.0%
Kenya	Campaign	17,509,532							0	10,600,000	0	0	6,371,178	0	0
	Continuous	0	0	1,808,684	4,725,828	4,924,110	4,779,830	4,657,526	2,654,084	2,709,264	2,773,370	2,837,475	2,940,000	1,500,000	0
	Any	17,509,532	0	1,808,684	4,725,828	4,924,110	4,779,830	4,657,526	2,654,084	13,309,264	2,773,370	2,837,475	9,311,178	1,500,000	0
	Exp. Cov.	100.0%	90.5%	80.0%	80.0%	80.0%	80.0%	80.0%	15.2%	87.8%	92.8%	87.7%	110.1%	88.7%	59.9%
Liberia	Campaign	2,022,690							902,680	533,242	1,517,931	0	1,977,267	0	0
	Continuous	0	0	209,270	546,127	569,095	552,497	538,437	0	185,172	250,000	250,000	250,000	250,000	0
	Any	2,022,690	0	209,270	546,127	569,095	552,497	538,437	902,680	718,414	1,767,931	250,000	2,227,267	250,000	0
	Exp. Cov.	100.0%	90.5%	80.0%	80.0%	80.0%	80.0%	80.0%	44.7%	75.0%	145.6%	131.4%	194.9%	160.5%	111.0%
Madagascar	Campaign	10,698,067							0	0	4,009,131	0	0	0	0
	Continuous	0	0	1,098,059	2,883,127	3,002,953	2,913,338	2,837,168	1,658,566	4,198,004	500,000	0	0	0	0
	Any	10,698,067	0	1,098,059	2,883,127	3,002,953	2,913,338	2,837,168	1,658,566	4,198,004	4,509,131	0	0	0	0
	Exp. Cov.	100.0%	90.5%	80.0%	80.0%	80.0%	80.0%	80.0%	16.7%	56.4%	92.3%	75.8%	53.6%	32.2%	16.0%
Malawi	Campaign	7,537,532							0	7,097,455	0	0	9,210,490	0	0
	Continuous	0	0	800,889	2,048,017	2,137,598	2,080,167	2,032,149	1,797,463	500,000	1,229,618	750,048	0	0	0
	Any	7,537,532	0	800,889	2,048,017	2,137,598	2,080,167	2,032,149	1,797,463	7,597,455	1,229,618	750,048	9,210,490	0	0
	Exp. Cov.	100.0%	90.3%	80.0%	80.0%	80.0%	80.0%	80.0%	23.9%	119.6%	120.7%	102.7%	179.4%	139.4%	96.1%
Mali	Campaign	8,552,630							0	8,666,667	0	0	4,900,000	0	0
	Continuous	0	0	800,889	2,048,017	2,137,598	2,080,167	2,032,149	0	1,402,310	1,452,794	1,400,000	500,000	1,500,000	0
	Any	8,552,630	0	800,889	2,048,017	2,137,598	2,080,167	2,032,149	0	10,068,977	1,452,794	1,400,000	5,400,000	1,500,000	0
	Exp. Cov.	100.0%	90.7%	80.0%	80.0%	80.0%	80.0%	80.0%	0.0%	115.0%	120.4%	111.0%	136.0%	115.0%	78.5%



Country	Delivery channel	Calculated needs (Networks LLIN model)							Funded LLINs (GF Proposals)						
		2010	2011	2012	2013	2014	2015	2016	2010	2011	2012	2013	2014	2015	2016
Mauritania	Campaign	1,894,416							0	0	0	0	0	0	0
	Continuous	0	0	180,492	502,081	520,715	501,993	485,702	0	0	0	0	0	0	0
	Any	1,894,416	0	180,492	502,081	520,715	501,993	485,702	0	0	0	0	0	0	0
	Exp. Cov.	100.0%	90.9%	80.0%	80.0%	80.0%	80.0%	80.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Mozambique	Campaign	12,141,326							6,556,222	0	0	7,027,172	0	0	0
	Continuous	0	0	1,222,311	3,257,538	3,389,057	3,282,407	3,191,087	983,542	1,006,556	1,030,108	1,054,211	1,078,494	0	0
	Any	12,141,326	0	1,222,311	3,257,538	3,389,057	3,282,407	3,191,087	7,539,764	1,006,556	1,030,108	8,081,383	1,078,494	0	0
	Exp. Cov.	100.0%	90.6%	80.0%	80.0%	80.0%	80.0%	80.0%	62.2%	64.4%	59.2%	103.8%	89.4%	63.6%	39.6%
Namibia	Campaign	498,116							0	0	0	0	0	0	0
	Continuous	0	0	44,697	130,358	134,759	129,288	124,471	173,787	175,814	87,907	45,954	132,941	0	0
	Any	498,116	0	44,697	130,358	134,759	129,288	124,471	173,787	175,814	87,907	45,954	132,941	0	0
	Exp. Cov.	100.0%	91.2%	80.0%	80.0%	80.0%	80.0%	80.0%	34.9%	66.6%	73.6%	65.6%	70.5%	50.0%	31.6%
Niger	Campaign	8,357,656							1,955,000	498,000	515,000	531,000	0	0	0
	Continuous	0	0	1,024,698	2,355,681	2,481,900	2,448,191	2,424,975	430,418	518,600	612,096	711,160	0	0	0
	Any	8,357,656	0	1,024,698	2,355,681	2,481,900	2,448,191	2,424,975	2,385,418	1,016,600	1,127,096	1,242,160	0	0	0
	Exp. Cov.	100.0%	89.5%	80.0%	80.0%	80.0%	80.0%	80.0%	28.6%	37.3%	42.7%	45.3%	32.6%	20.5%	11.1%
Nigeria	Campaign	86,476,670							27,958,005	34,513,064	0	17,775,274	25,666,878	0	0
	Continuous	0	0	8,309,750	22,961,734	23,825,239	22,984,828	22,255,099	0	0	8,202,740	5,000,000	5,000,000	0	0
	Any	86,476,670	0	8,309,750	22,961,734	23,825,239	22,984,828	22,255,099	27,958,005	34,513,064	8,202,740	22,775,274	30,666,878	0	0
	Exp. Cov.	100.0%	90.9%	80.0%	80.0%	80.0%	80.0%	80.0%	32.4%	68.5%	67.5%	75.8%	88.0%	65.0%	42.5%
Rwanda	Campaign	5,616,871							4,462,178	0	0	4,847,593	0	0	0
	Continuous	0	0	602,353	1,529,557	1,597,370	1,555,747	1,521,129	0	966,492	993,554	0	1,049,972	0	0
	Any	5,616,871	0	602,353	1,529,557	1,597,370	1,555,747	1,521,129	4,462,178	966,492	993,554	4,847,593	1,049,972	0	0
	Exp. Cov.	100.0%	90.3%	80.0%	80.0%	80.0%	80.0%	80.0%	79.5%	88.5%	87.4%	142.5%	127.4%	91.0%	56.8%
Sao Tome & Principe	Campaign	95,170							68,386	28,526	38,372	0	0	0	0
	Continuous	0	0	8,462	24,860	25,687	24,627	23,691	3,574	3,315	3,421	5,012	106,371	5,319	5,319
	Any	95,170	0	8,462	24,860	25,687	24,627	23,691	71,960	31,841	41,793	5,012	106,371	5,319	5,319
	Exp. Cov.	100.0%	91.3%	80.0%	80.0%	80.0%	80.0%	80.0%	79.5%	107.1%	132.9%	108.3%	183.2%	148.4%	109.7%

Country	Delivery channel	Calculated needs (Networks LLIN model)							Funded LLINs (GF Proposals)						
		2010	2011	2012	2013	2014	2015	2016	2010	2011	2012	2013	2014	2015	2016
Senegal	Campaign	6,766,316							0	0	0	0	0	0	0
	Continuous	0	0	692,281	1,822,167	1,897,538	1,840,397	1,791,766	0	0	0	0	0	0	0
	Any	6,766,316	0	692,281	1,822,167	1,897,538	1,840,397	1,791,766	0	610,784	130,097	1,770,582	2,653,427	2,379,049	0
	Exp. Cov.	100.0%	90.5%	80.0%	80.0%	80.0%	80.0%	80.0%	0.0%	8.8%	9.8%	32.2%	62.9%	83.4%	65.8%
Sierra Leone	Campaign	3,181,478							0	0	0	0	0	0	0
	Continuous	0	0	316,643	851,379	885,163	856,467	831,801	712,919	741,120	644,169	607,997	624,635	632,366	651,582
	Any	3,181,478	0	316,643	851,379	885,163	856,467	831,801	712,919	741,120	644,169	607,997	624,635	632,366	651,582
	Exp. Cov.	100.0%	90.7%	80.0%	80.0%	80.0%	80.0%	80.0%	22.5%	43.1%	55.8%	61.9%	64.0%	63.8%	63.0%
Somalia	Campaign	2,055,556							0	773,165	1,650,000	0	0	1,425,000	0
	Continuous	0	0	223,820	561,838	587,304	572,793	560,841	0	0	0	525,000	550,000	0	0
	Any	2,055,556	0	223,820	561,838	587,304	572,793	560,841	0	773,165	1,650,000	525,000	550,000	1,425,000	0
	Exp. Cov.	100.0%	90.2%	80.0%	80.0%	80.0%	80.0%	80.0%	0.0%	36.6%	108.7%	117.2%	114.5%	141.5%	104.2%
South Africa	Campaign	13,772,665							0	0	0	0	0	0	0
	Continuous	0	0	955,141	3,439,096	3,512,702	3,309,016	3,125,680	0	0	0	0	0	0	0
	Any	13,772,665	0	955,141	3,439,096	3,512,702	3,309,016	3,125,680	0	0	0	0	0	0	0
	Exp. Cov.	100.0%	92.4%	80.0%	80.0%	80.0%	80.0%	80.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Sudan - North	Campaign	18,303,220							0	0	2,490,590	2,490,590	2,490,590	2,490,590	2,490,590
	Continuous	0	0	1,722,934	4,838,337	5,014,558	4,829,475	4,667,983	1,234,750	1,787,974	1,448,463	1,209,108	678,320	678,320	678,320
	Any	18,303,220	0	1,722,934	4,838,337	5,014,558	4,829,475	4,667,983	1,234,750	1,787,974	3,939,053	3,699,698	3,168,910	3,168,910	3,168,910
	Exp. Cov.	100.0%	91.0%	80.0%	80.0%	80.0%	80.0%	80.0%	6.8%	15.7%	34.2%	47.9%	54.3%	56.7%	56.6%
Sudan –	Campaign	4,868,641							1,982,381	1,297,017	0	0	0	0	0
	Continuous	0	0	458,299	1,286,994	1,333,868	1,284,636	1,241,679	83,808	0	1,038,261	1,067,852	0	0	0
	Any	4,868,641	0	458,299	1,286,994	1,333,868	1,284,636	1,241,679	2,066,189	1,297,017	1,038,261	1,067,852	0	0	0
	Exp. Cov.	100.0%	91.0%	80.0%	80.0%	80.0%	80.0%	80.0%	42.5%	64.8%	74.4%	77.8%	56.5%	35.8%	19.4%
Swaziland	Campaign	209,415							111,270	166,905	230,813	280,448	0	0	0
	Continuous	0	0	17,532	54,055	55,683	53,140	50,880	0	0	0	0	0	0	0
	Any	209,415	0	17,532	54,055	55,683	53,140	50,880	111,270	166,905	230,813	280,448	0	0	0
	Exp. Cov.	100.0%	91.5%	80.0%	80.0%	80.0%	80.0%	80.0%	53.2%	127.2%	216.9%	307.6%	245.6%	170.1%	100.7%

Country	Delivery channel	Calculated needs (Networks LLIN model)							Funded LLINs (GF Proposals)						
		2010	2011	2012	2013	2014	2015	2016	2010	2011	2012	2013	2014	2015	2016
Tanzania	Campaign	23,229,803							9,362,852	10,320,760	0	0	0	0	0
	Continuous	0	0	2,537,042	6,354,034	6,643,304	6,480,949	6,347,505	1,484,646	1,394,645	1,680,000	1,680,000	1,260,000	0	0
	Any	23,229,803	0	2,537,042	6,354,034	6,643,304	6,480,949	6,347,505	10,847,498	11,715,405	1,680,000	1,680,000	1,260,000	0	0
	Exp. Cov.	100.0%	90.2%	80.0%	80.0%	80.0%	80.0%	80.0%	46.8%	91.1%	83.6%	68.3%	49.5%	29.2%	15.0%
Togo	Campaign	3,405,939							3,371,500	0	0	0	0	0	0
	Continuous	0	0	370,858	930,934	973,130	949,086	929,281	521,050	536,350	551,650	567,800	583,100	0	0
	Any	3,405,939	0	370,858	930,934	973,130	949,086	929,281	3,892,550	536,350	551,650	567,800	583,100	0	0
	Exp. Cov.	100.0%	90.2%	80.0%	80.0%	80.0%	80.0%	80.0%	114.2%	118.3%	108.7%	91.9%	75.0%	47.5%	27.1%
Uganda	Campaign	17,658,167							7,200,000	10,400,000	0	0	0	0	0
	Continuous	0	0	2,097,664	4,934,939	5,188,051	5,101,653	5,037,280	1,148,134	1,937,918	2,712,578	2,887,988	3,172,355	2,189,943	2,200,000
	Any	17,658,167	0	2,097,664	4,934,939	5,188,051	5,101,653	5,037,280	8,348,134	12,337,918	2,712,578	2,887,988	3,172,355	2,189,943	2,200,000
	Exp. Cov.	100.0%	89.7%	80.0%	80.0%	80.0%	80.0%	80.0%	47.3%	109.9%	107.4%	95.3%	80.5%	62.3%	49.0%
Zambia	Campaign	7,382,291							1,000,000	1,000,000	500,000	0	0	0	0
	Continuous	0	0	815,986	2,025,272	2,119,082	2,069,576	2,029,251	400,000	400,000	400,000	0	0	0	0
	Any	7,382,291	0	815,986	2,025,272	2,119,082	2,069,576	2,029,251	1,400,000	1,400,000	900,000	0	0	0	0
	Exp. Cov.	100.0%	90.1%	80.0%	80.0%	80.0%	80.0%	80.0%	19.0%	35.6%	41.3%	31.8%	21.1%	11.8%	5.5%
Zanzibar	Campaign	702,124							611,000	0	0	527,000	88,000	0	0
	Continuous	0	0	76,682	192,052	200,795	195,888	191,854	0	0	0	0	0	0	0
	Any	702,124	0	76,682	192,052	200,795	195,888	191,854	611,000	0	0	527,000	88,000	0	0
	Exp. Cov.	100.0%	90.2%	80.0%	80.0%	80.0%	80.0%	80.0%	87.0%	78.5%	60.7%	108.5%	94.7%	67.4%	42.3%
Zimbabwe	Campaign	1,814,756							1,200,000	0	0	1,821,883	0	0	0
	Continuous	0	0	173,198	481,147	499,052	481,176	465,629	0	150,000	150,000	150,000	300,000	150,000	150,000
	Any	1,814,756	0	173,198	481,147	499,052	481,176	465,629	1,200,000	150,000	150,000	1,971,883	300,000	150,000	150,000
	Exp. Cov.	100.0%	90.9%	80.0%	80.0%	80.0%	80.0%	80.0%	66.2%	68.2%	62.2%	145.8%	134.2%	106.8%	78.0%

