

Long Lasting Insecticidal Nets Supply Update

UNICEF Supply Division

May 2014

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Long Lasting Insecticidal Nets (LLINs) Supply Update – May 2014

This update reports on 2013 LLIN supply increases and efforts to improve LLIN market security and supply chain optimisation.

1. Summary

- UNICEF 2013 procurement totalled 29 million LLINs, increasing from 18 million in 2012. UNICEF's LLIN demand mirrored global trends which reached 165 million nets through end-2013.
- While procurement increased, current levels of funded demand are still not sufficient considering the need to replace all the nets bought in 2009-2010 in 2013. A substantial volume of nets procured in 2013 is being distributed in 2014.
- UNICEF, the Global Fund, DFID, USAID and other partners have launched a collaborative initiative to improve global LLIN market stability, access, availability and the affordability of quality LLINs. A joint pre-tender briefing meeting with suppliers occurred on 20 August in Copenhagen.
- UNICEF's weighted average price (WAP) per LLIN has decreased from ~\$3.70 in 2012 to ~\$3.06 in 2013. UNICEF continues to promote cost efficiency that extends over the entire supply chain including in-country distribution channels, capacity and infrastructure (i.e., not limited to the commodity cost) and seeks to optimise packing, transport and logistics.
- A temporary decline in supply capacity is anticipated as a result of a reduction in the number of eligible suppliers. Buyers issued a suspension period to two of the largest LLIN suppliers as a result of financial misconduct, and WHO has de-listed one supplier following a review of products under their Pesticide Evaluation Scheme (WHOPES). The effect of declined supply capacity warrants careful monitoring and partner coordination, particularly in the context of re-accelerating demand.

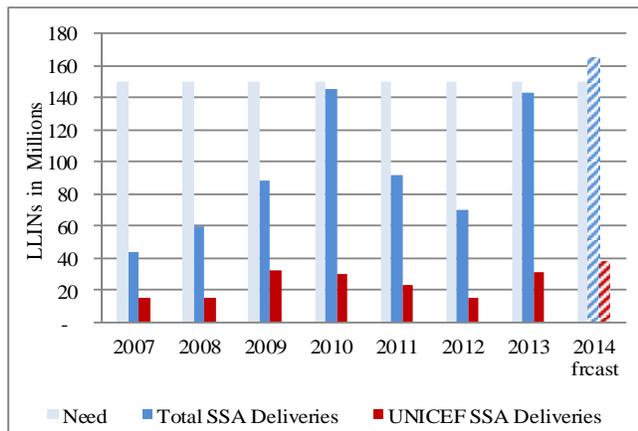
2. Background & Recent Procurement Trends

UNICEF's previous [April 2013](#) LLIN Supply Update provides general epidemiological and market background, detailing supplier-specific pricing and, at that time, the impact delayed funding was having on procurement activity. Rebounding from previously anaemic levels, UNICEF's procurement through 2013 reached 29 million LLINs (Figure 2) for 38 countries. 2013 procurement reverses an annual decline since 2009. Increased 2013 funding availability accounts for this change and includes advanced procurement for delivery during 1Q and 2Q 2014 (Table 1).

The Net Mapping Project data reports that 143 million LLINs were distributed across Sub-Saharan Africa (SSA) through 2013, accounting for 96% of the annual target requirement of 150 million LLINs. Approximately 165 million LLINs are anticipated to be delivered across SSA for 2014,¹ also reversing the decline from previous years.

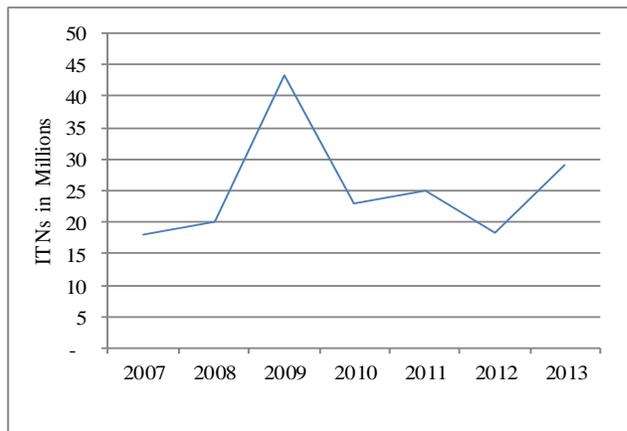
¹ The African Leaders Malaria Alliance, *Global Efforts to Achieve and Maintain LLIN Coverage*, United Nations Children's Fund, Copenhagen, August 2013 at http://www.unicef.org/supply/files/Global_Efforts_to_achieve_and_maintain_LLIN_coverage.pdf.

Figure 1 Sub-Saharan Africa Deliveries: Total versus UNICEF



Source: Net Mapping Project / UNICEF Supply Division.

Figure 2 UNICEF’s Global ITN Procurement Trend

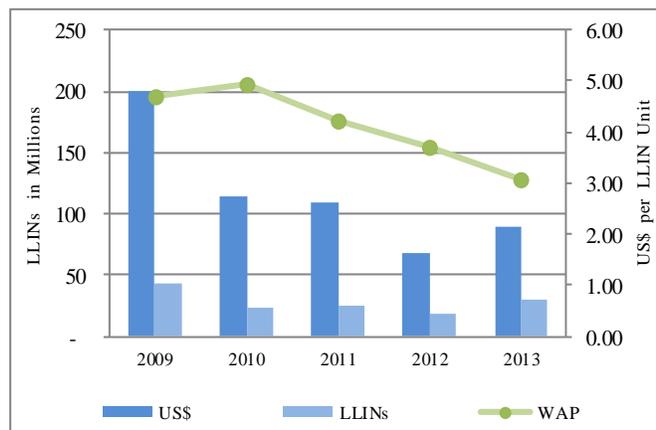


Source: UNICEF Supply Division.

3. Current Market Update

3.1. Supplier Base and Capacity

Figure 3 UNICEF Procurement and Weighted Average Price Data²



Source: UNICEF Supply Division.

UNICEF’s LLIN WAP declined by 40% from \$5 to ~\$3 (Figure 3) from 2010 to 2013 and includes a 17% decline between 2012 and 2013 alone. UNICEF publishes a [retrospective of LLIN prices](#) for each LLIN supplier holding a Long Term Agreement (LTA) with UNICEF, which may be referenced.³ WHOPEs currently lists [11 LLINs from 10 suppliers](#). WHO delisted two LLIN products and one supplier following a review of their interim recommended LLIN products. WHOPEs has an additional [6 new LLINs from 5 suppliers](#) currently under Phase II evaluation.

The total global installed production capacity of WHOPEs-approved standard-sized LLINs is estimated to be 300 million per year (in practice, requirements for non-standard size nets and customisation reduce this aggregate capacity). One of the potential risks of accessing this capacity is misconduct of suppliers. To help mitigate this risk and better ensure a transparent and ethical marketplace: i) partners will establish anti-bribery / anti-corruption guidelines to be signed by

² Note: This data is based on all LLIN products (standard and customized) and has been adjusted to account for rebates other product costs.

³ LLIN price based on LLINs: 190 x 180 x 150 cm; minimum 100 denier; colour white.

manufacturers ii) manufacturers will be encouraged to sign the UN Global Compact, and iii) UNICEF will help ensure that multiple manufacturers are registered / specified by each country.

3.2. Durability and Life-Cycle Cost

LLINs can last between two and five years, depending upon the insecticide treatment and physical characteristics of the product. Current WHO guidelines require LLINs to retain biological activity for a minimum number of 20 standard washes under laboratory conditions and a three-year minimum period of use under field conditions.⁴

However, the current criteria do not contemplate the categorisation of the different LLIN products according to durability. While there has been some progress in developing some durability-related indicators, UNICEF believes that the following steps will help catalyse global partners' migration towards incorporation of durability criteria:

- Transparency surrounding (and sharing of) completed durability studies' empirical results,
- Coordinated work towards harmonised *global* durability indicators, such that multiple quality metric regimes do not develop in parallel leading to divergent metrics / methodology,
- Public sharing of the definitive list of durability indicators during 2014,
- Supplier participation and 'buy-in' into the durability indicator set, and
- Warranty provisions by manufacturers.

Following formal announcement of definitive durability indicators, UNICEF is prepared to consider such in our own procurement activities. Performance specifications utilising these indicators will be used and internal preparatory work for defining performance thresholds is ongoing.

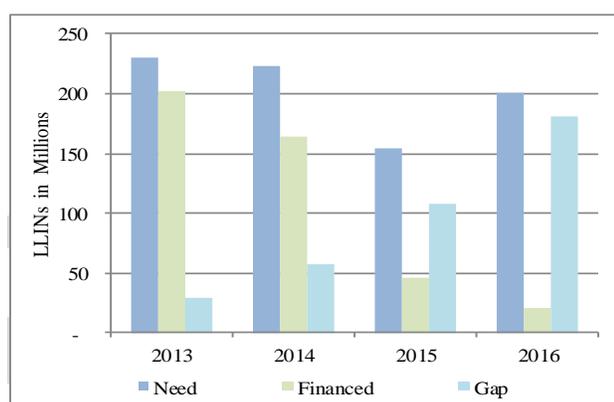
3.3. UNICEF's View of Demand

For 2013, UNICEF procured 29 million LLINs. Funding availability has improved compared to 2012's unpredictability, which has supplemented UNICEF's ability to procure additional LLINs to meet country needs (including unplanned requests). Suppliers have also increased production capacity to accommodate the shift in global demand expected during 2014 through 2015. For 2014, the African Leaders Malaria Alliance (ALMA) identifies a need for ~220 million LLINs, of which 165 million LLINs are already funded (Figure 4).

The current 2014 forecast through UNICEF totals 36.5 million nets to be delivered to 18 countries. Seven countries, Chad, Côte d'Ivoire, the Democratic Republic of the Congo, Ethiopia, Guinea-Bissau, Sierra Leone and the Sudan account for ~95% of the demand.

⁴ World Health Organization, *Guidelines for Monitoring the Durability of Long-Lasting Insecticidal Mosquito Nets Under Operational Conditions*, WHO, Geneva, 2011, p. 1 at http://whqlibdoc.who.int/publications/2011/9789241501705_eng.pdf.

Figure 4 Estimated LLIN Needs in SSA During 2013-2016



Source: ALMA.

In order to maximise the procurement impact and access to LLINs, the Global Fund, UNICEF, DFID and USAID are collaborating through sharing and aligning forecasts, LLIN specifications, market analysis, as well as conducting joint tender briefings and developing a collaboration roadmap. The collaboration provides enhanced visibility into long-term LLIN procurement while operationally improving specification harmonisation, price leverage and better coordination of planning and production schedules.

4. Optimising WAP Beyond Commodity Price

UNICEF is increasingly incorporating broader supply chain considerations in its own planning and contracting activities. Below we illustrate some of the considerations that should be incorporated in planning and decision making which extend LLIN selection beyond core commodity price.

Logistics and in-country supply chain distribution cost can have a substantial impact on realised cost to a purchaser. For instance, the number of LLINs packed into a 40 ft. high cube container may vary between 18,000 and 43,000. The optimisation of packing arrangements can reduce the cost of freight and containers by half and is one of the key aspects required to ensure better value for money (and substantially lower freight and container costs). Table 1 presents LLIN comparative costs and delivery parameters based on actual offers received for an anonymized country destination.

Table 1 LLIN Comparative Cost and Delivery Parameters

Supplier	A	B	C
Quantity	1,000,000	1,000,000	1,000,000
Unit Price (US\$)	\$3.20	\$2.95	\$3.15
Freight cost per container port of origin>port of entry	\$2,750.00	\$4,200.00	\$3,500.00
Shippers Owned Container (SOC)	\$2,500.00	\$3,500.00	\$3,200.00
Number of LLINs per 40 ft High Cube container	43,000	23,000	31,000
Number of containers needed	24	44	33
Total supply value	\$3,200,000.00	\$2,950,000.00	\$3,150,000.00
Total Freight	\$66,000.00	\$184,800.00	\$115,500.00
Total SOC	\$60,000.00	\$154,000.00	\$105,600.00
Total import of entry	\$3,326,000.00	\$3,288,800.00	\$3,371,100.00
WAP (including freight, etc.)	\$3.33	\$3.29	\$3.37
Production lead time	2 weeks	4 weeks	1 week
Transit lead times	40 days	50 days	45 days
Total lead time	~54 days	~78 days	~52 days

Source: UNICEF Supply Division.

Similarly, freight costs and shipping lead times depend upon routing. Different ports of origin can lead to double the shipping costs and account for 4-11% of the landed costs. An additional ~35% of the cost of LLINs may be required to support in-country distribution platforms including behaviour change, communication, monitoring and evaluation.⁵ As evidenced by the above, freight considerations, routing and lead-time trade-offs should continue to be assessed in concert with core commodity costs. Other possible actions that can contribute to cost-savings include those presented in Table 2.

Table 2 Supply Chain Considerations Impacting Efficiency and Effectiveness

Consideration	Comment
Container loading based on distribution plans.	Container loading plans should be based on country distribution plans to facilitate the prepositioning of LLINs at in-country delivery points and to serve as hubs for in-country distribution. Such considerations should result in reduced in-country distribution costs and implementation timelines.
Justify added value from customised packaging and labelling.	Package customisation and sewn labelling often generate additional product cost and increased production lead times. Printing multi-coloured logos on some packaging is not always viable and may require an assessment of alternative options (e.g., affixing stickers), which also incur additional cost and production times. Customisation requests and their added value need to be assessed, confirmed and justified.
Optimise number of LLINs per container.	LLIN container packing optimization can reduce freight and container costs by half and is one of the key aspects required to ensure better value for money through substantially lower freight and container costs.
Assess capacity at port of origin and port of discharge of LLIN consignments.	Especially for large volume orders, it is critical to carry out an assessment of container availability and pricing at port(s) of origin, while also ensuring that port of discharge has the appropriate capacity to handle receipt of shipments in order to ensure adherence to the expected delivery schedule. Active management of these considerations can significantly reduce prices of international freight and containers and also mitigate bottlenecks at the receiving end (which in turn could result in high port storage charges and increased cost of in-country logistics).

5. Issues

- UNICEF and partners will continue collaborating on regularly updated LLIN forecasts. Improved partner coordination and UNICEF’s forecast accuracy remain dependent on sustained communication efforts to counter unpredictable LLIN funding and country-specific variance.
- UNICEF continues to work towards a harmonised and streamlined forecast model. The improved procurement outlook and increased LLIN funding security are reducing the prospect of under-procurement and risks to supplier production capacity. The LLIN forecast is improving the visibility when budgets will be converted into funds, particularly with regards to country own procurement and its mapping against global forecast.
- Global Fund’s recent reinstatement of two large suspended LLIN suppliers could avert pressure on demand exacerbated by the de-listing of one supplier from WHOPES recommendation.
- UNICEF and partners will work to help improve the transparency and ethics of the market.
- UNICEF will work to ensure countries register / specify multiple manufacturers.

⁵ UNITAID, *Accelerating Scale-Up of Long Lasting Insecticide-Treated Nets (LLINs) 2009-2010*, World Health Organization, Geneva 2010, pp. 8-28 at <http://www.unitaid.eu/images/NewWeb/documents/llinprojectplan2008.pdf>.

Table 3 Key Changes in the LLIN Market from 2012-2013

Category	Description
Procurement Modality (Partnership-Driven)	<ul style="list-style-type: none"> In 2013, partner procurement shifted towards a collaborative, synchronized and partner-coordinated procurement based on a regularly updated realistic forecast and joint donor planning to avoid order congestion. Previous procurement did not coordinate based upon overall global forecasts / demand. Additionally, in 2013, the Global Fund migrated from spot tendering under the umbrella of VPP to establishing long terms arrangements based on a pooled procurement model which has generated increased market stability.
Product Selection	<ul style="list-style-type: none"> Product selection on the margin has been reduced from 13 WHO recommended LLINs through 11 suppliers (2012). In 2013, the de-listing of two LLIN products from one supplier in 2013 results in 11 LLIN products currently available through 10 suppliers.
Pricing	<ul style="list-style-type: none"> WAP decreased from ~\$3.70 in 2012 to ~\$3.06 in 2013.
Demand	<ul style="list-style-type: none"> The unstable demand and a declining procurement trend in 2012 reversed in 2013 as a result of increased funding security and predictability.
Quality Assurance and Technical Standards	<ul style="list-style-type: none"> Tangible progress towards agreed LLIN physical and chemical durability criteria and technical standards was achieved in 2013.
Procurement Monitoring & Evaluation	<ul style="list-style-type: none"> 2012's tender evaluation criteria included end-to-end supply chain value for money and optimisation considerations. UNICEF's most recent procurement strategy development and tender also included supply chain optimisation criteria in the assessment of offers.

6. Steps Forward

- UNICEF's newly invigorated partnership with the Global Fund, DFID and USAID will regularly monitor forecast implementation and ensure improved alignment and periodic updates in an effort to improve coordination and stability of demand.
- During the 1Q 2014 tender process, UNICEF introduced additional end-to-end supply chain Value-for-Money criteria for the evaluation of awards, as previewed at the 20 August Joint Pre-Tender Briefing.
- UNICEF will further engage with partners to work towards categorization of LLINs on evidence-based durability to inform appropriate product selection and reduce cost per year of use. As fabric durability remains a major concern, WHO, together with partners and industry, is identifying indicators to measure LLIN netted material durability.
- UNICEF will work with partners and governments to improve ethics of the marketplace and reduce specifications that result in sole-sourced procurement.
- UNICEF will continue to monitor the impact of a reduction in supply capacity and work with partners to ensure continued stability, availability and access to quality LLINs.
- UNICEF will update this note following completion of next tender activities.

Table 4 2014 Expected Tender Timeline and Milestones

Date	Activity
February 2014	Request for Proposal prepared.
March 2014	Request for Proposal issued (21 March 2014).
April 2014	Tender closing date (7 April 2014).
April 2014	End of clarifications and evaluation (est. 25 April 2014).
May 2014	Announcement of Awards (est. 20 May 2014).
June 2014	Start of new LTAs (est. 1 June 2014).

For further questions or additional information, please contact:

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Other UNICEF information notes can be found at: http://www.unicef.org/supply/index_54214.html.