This update reports on 2014 long-lasting insecticidal nets (LLIN) supply, deliveries and 2015-2016 demand. UNICEF anticipates launching a new tender during 3Q 2015 to improve LLIN pricing and align long-term procurement arrangements with calendar year durations.

A more recent note covering LLINs exists. Please visit [http://www.unicef.org/supply/index_54214.html](http://www.unicef.org/supply/index_54214.html)

1. Summary

- UNICEF procurement of long-lasting insecticidal nets (LLIN) in 2014 totalled ~26.5 million units. Despite the slight reduction in LLIN procurement through UNICEF from 29 million in 2013, overall global deliveries increased from 165 million to 211 million LLINs between 2013 and 2014.
- In 2014, overall global deliveries exceeded the projected annual requirement for Sub-Saharan Africa (SSA) of 150 million LLINs, which included replacement LLINs procured in 2010-2011.
- UNICEF’s LLIN weighted average price (WAP) continues to decline. It went from $5.00 in 2010, to falling below $3.00 in 2014. UNICEF anticipates the WAP to decrease further during 2015, especially given reductions in LLIN producers’ input costs as a result of falling oil prices.
- UNICEF will re-launch its LLIN tender during the second half of 2015, taking the opportunity to revise its long-term arrangements (LTAs), improve LLIN pricing, and align LTAs with calendar year durations.

2. Background & Recent Procurement Trends

Supply trends are commonly articulated either as number of nets procured or number of nets delivered. Substantial differences are noted between annually reported LLIN deliveries and LLIN procurement. Long-lead delivery times due to shipments by sea, and subsequent transit to community level distribution points, which can span across calendar years, account for some of the difference. In 2014, UNICEF procured 26.5 million LLINs on behalf of 35 countries (Figure 1). As illustrated below, year-to-year demand can vary significantly for each country. Some large-scale rollout projects and countries procuring LLINs on a two-three year cycle affect UNICEF’s overall LLIN procurement trends. While UNICEF’s procurement ranged between 20 and 30 million LLINs per year, the contribution to global LLIN procurement share declined to 14% due to the increasing centralisation of procurement by other major partners, notably the Global Fund to Fight AIDS Tuberculosis and Malaria (the Global Fund) and the US President’s Malaria Initiative (PMI) (Figure 2).

![Figure 1 UNICEF’s Global ITN Procurement Trend 2007-2014](image1)

![Figure 2 Sub-Saharan Africa Deliveries: Total versus UNICEF 2007-2014](image2)

Source: Net Mapping Project / UNICEF Supply Division.
The Net Mapping Project, developed by the Alliance for Malaria Prevention (AMP), a multi-sectorial partnership within the Roll Back Malaria initiative, monitors the global delivery of LLINs on a quarterly basis. The 2014 reported figure for LLINs distributed across SSA reached 189 million, exceeding the annual target of 150 million by 26%. The significant growth in the global LLIN market can be attributed to two major buyers, 46% through the Global Fund, and ~20% through the PMI.

3. Current Market Update

3.1. Price and procurement trends

UNICEF’s WAP for LLINs declined by 41% over the last 5 years, reducing from $5 in 2010 to ~$3 in 2014 (Figure 3). Manufacturers have indicated that LLIN prices could decline further on account of reductions in the cost of production inputs, most notably oil and oil-based derivatives. UNICEF, with the Global Fund, will co-host an industry meeting in September 2015 and re-launch its LLIN tender during September 2015, aiming to have procurement arrangements in place by January 2016. The new contracts anticipate securing more favourable pricing and align LTAs with calendar year durations, which will improve forecasts if aligned with country forecasts and annual budgets.

Source: UNICEF Supply Division.

UNICEF publishes a retrospective list of LLIN prices for each LLIN supplier that holds an LTA with the organization, which may be referenced. However, prices do not reflect volume discounts, price decreases or increased costs due to incurred customization during the LTA period.

3.2. Supplier Base and Capacity

WHO’s Pesticide Evaluation Scheme (WHOPES) promotes and coordinates the testing and evaluation of pesticide safety, efficacy and operational acceptability of public health pesticides. The scope of their work covers LLINs, including norms, standards, life-cycle management and specifications for quality control, and product international trade. WHOPES currently recommends eleven LLIN products manufactured by ten suppliers. WHOPES has an additional eight LLIN products from eight suppliers (five are new suppliers, three are existing suppliers) currently under evaluation for recommendation, of which four are in Phase III. However, the WHOPES evaluation process can take up to 2-3 years to complete, which limits the speed and number of products entering the market.

WHOPES approved suppliers estimated their total global installed production capacity of recommended standard-sized LLINs to be 334 million nets per year (though in practice, requirements for non-standard size nets and customization reduce this aggregate capacity).

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2 Data based on all LLIN products (standard and customized) and adjusted to account for rebates and other product costs.
3 LLIN price based on LLINs: 190 x 180 x 150 cm; minimum 100 denier; colour white.
UNICEF currently has six LTAs with six suppliers (Table 1).

Table 1 UNICEF LTAs with Suppliers 2014-2015

<table>
<thead>
<tr>
<th>Manufacturer</th>
<th>LTA Duration</th>
<th>Start Date</th>
<th>End Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>Net Health Ltd</td>
<td>18 months</td>
<td>23/06/2014</td>
<td>31/12/2015</td>
</tr>
<tr>
<td>Shobikaa Impex Private Ltd</td>
<td>18 months</td>
<td>02/07/2014</td>
<td>31/12/2015</td>
</tr>
<tr>
<td>Tana Netting FZ-LLC</td>
<td>18 months</td>
<td>03/07/2014</td>
<td>31/12/2015</td>
</tr>
<tr>
<td>Tianjin Yorkool International</td>
<td>18 months</td>
<td>24/06/2014</td>
<td>31/12/2015</td>
</tr>
<tr>
<td>Vestergaard Group SA</td>
<td>18 months</td>
<td>18/06/2014</td>
<td>31/12/2015</td>
</tr>
<tr>
<td>V.K.A. Polymers Pvt Ltd</td>
<td>18 months</td>
<td>02/07/2014</td>
<td>31/12/2015</td>
</tr>
</tbody>
</table>

Source: UNICEF Supply Division.

3.3. Durability and Life-Cycle Cost

Current WHO laboratory testing guidelines expect 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.\(^4\) WHOPES evaluations do not differentiate between LLIN products based on their relative durability, as the assumption is that they have undergone the relevant field trials, they are all sufficiently durable. However, LLIN serviceable life depends on various factors in addition to textile durability and insecticide efficacy, such as a net’s attrition rate and damage to the net depending on the way the net is used in the household. Following the publication of WHO’s guidance on monitoring LLIN durability in 2013, numerous reports were published documenting that there are variations in longevity between different brands.\(^5\) Since the latest reports follow the WHO monitoring guidance, results of the studies are becoming more and more reliable for comparison. However, results are still very country- and culture- specific and not enough public data exists to inform global procurement decisions.\(^6\)

Progress has been made in defining criteria to inform future procurement decisions using laboratory-based LLIN evaluation results as a basis. In 2014, Results for Development (R4D) made significant progress in analysing the root causes of LLIN failures. They identified potential laboratory tests that could inform the target product profile of a more durable future LLIN.\(^7\)

UNICEF will continue to support efforts to incorporate durability criteria into programme and future procurement decisions. UNICEF’s areas of focus will not only aim to improve product specifications, but include enhancing advocacy to sustain this important work, and maintain the momentum among global partners by:

- Ensuring transparency around (and sharing of) completed durability studies’ empirical results,
- Coordinating work towards harmonised global durability indicators such that multiple quality metric regimes do not develop in parallel leading to divergent metrics / methodologies,
- Contributing to WHO’s definitive list of durability indicators during 2015,
- Encouraging supplier participation and engagement in establishing durability indicator sets,
- Consulting manufacturers on warranty provisions and/or further innovations in this area of work.

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\(^6\) A. Kilian et al., Field Durability of the Same Type of Long-Lasting Insecticidal Net Varies Between Regions in Nigeria Due to Differences in Household Behaviour and Living Conditions, Malaria Journal, Liverpool, 2015.

\(^7\) Results for Development, Developing Bednet Durability Criteria to Inform Procurement Decisions and Innovation, Washington, 2014.
UNICEF will apply any definitive durability indicators once agreed into future procurement activities with partners and industry.

3.4. UNICEF’s View of Demand

For 2014, UNICEF procured 26.5 million LLINs for 35 countries. The current 2015-2016 forecast through UNICEF totals 22.9 million nets to be delivered to 16 countries.

Figure 4 Estimated LLIN Needs in SSA during 2013-2016

Funding predictability has improved compared to 2012, which has supplemented UNICEF’s ability to procure additional LLINs to meet country needs. Suppliers have also increased production capacity to accommodate the increase in global demand expected through 2017. For 2015, the African Leaders Malaria Alliance (ALMA) identifies a need for ~213 million LLINs, of which 158 million are already funded (Figure 4).

Source: Alma.

WHOPEs-recommended products are accepted in most countries. However, many countries rely on their own in-country registration requirements. In-country registration, or lack thereof, can be a barrier to access LLINs. To ensure supply security, UNICEF strongly promotes the registration of multiple manufacturers by each country. Country product choice is often determined by in-country product registration, although some countries have only one LLIN product registered (e.g. Sudan, Iran, Bolivia), which limits supply flexibility and availability. UNICEF is focusing efforts to ensure LLIN product registration in countries. Together with countries procuring through UNICEF, UNICEF will compile a comprehensive list of LLIN registration requirements during 2015.

Supplier misconduct can threaten sustainable supply. UN rules and regulations reflect a zero tolerance to bribery and corruption. The consequences of such behaviour are included in the clauses of LTAs. LLIN suppliers wishing to supply the UN are required to subscribe to the UN Global Compact to mitigate any risk and ensure a transparent and ethical marketplace. After the suspension of two LLIN suppliers in 2014, The Global Fund hosted an industry-led initiative to combat fraud. All major partners supported the initiative, and all LLIN manufacturers signed an Integrity Pact for Global LLIN Procurement. Suppliers also agreed to fund an independent integrity monitor.

4. Issues

- Improved partner coordination and forecast accuracy remain dependent on sustained communication efforts to counter unpredictable LLIN funding, and help manage product customisation, country-specific variance in product preferences, concentration of demand, and donor requirements.
- The forecasting model needs to be streamlined and harmonized. It would improve the procurement outlook and encourage increased LLIN funding security, which would reduce the prospect of under-procurement and any risks to supplier production capacity.

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Efforts to address market transparency and ethics need to be continued in order to prevent supplier misconduct, and to avoid supplier suspension.

Some countries do not have multiple registered LLIN manufacturers. Countries that have a limited supplier base have an increased risk to supply insecurity.

LLIN supply insecurity could be exacerbated by any possible supplier market exit, or supplier suspension, if a product fails to meet quality standards.

Performance specifications using a harmonized set of global durability indicators have yet to be finalized and applied through WHOPES evaluation criteria, and WHO guidelines procedures.

5. Next Steps

UNICEF’s will continue to foster collaboration with global partners, including the Global Fund, DFID and USAID, to improve aggregate forecasts, monitor implementation, and ensure alignment of policy and practice in an effort to improve coordination and the stability of demand.

During the 3Q 2015, UNICEF will launch a new tender process to improve LLIN pricing through LTAs, align LTAs with calendar year durations (Table 2), and continue using additional end-to-end supply chain Value-for-Money criteria (as highlighted in UNICEF’s previous May 2014 LLIN Supply Update) for the evaluation of awards.

UNICEF will further engage with partners to work towards different LLIN categorization 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 and diversify LLIN product registration in countries only sourcing one LLIN registered product.

UNICEF will update this note following the completion of the next tender activities during 4Q 2015.

Table 2 2015 Expected Tender Timeline and Milestones

<table>
<thead>
<tr>
<th>Date</th>
<th>Activity</th>
</tr>
</thead>
<tbody>
<tr>
<td>September 2015</td>
<td>Joint Industry meeting.</td>
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<tr>
<td>01 October 2015</td>
<td>Request for Proposal issued.</td>
</tr>
<tr>
<td>15 October 2015</td>
<td>Tender closing date.</td>
</tr>
<tr>
<td>16 November 2015</td>
<td>End of clarifications and evaluation.</td>
</tr>
<tr>
<td>December 2015</td>
<td>Announcement of Awards.</td>
</tr>
<tr>
<td>1 January 2016</td>
<td>Start of new LTAs.</td>
</tr>
</tbody>
</table>

Source: UNICEF Supply Division.

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.