GUIDANCE ON CHANNEL SELECTION FOR DISTRIBUTION OF INSECTICIDE-TREATED NETS

AUGUST 2025

amp | The Alliance for Malaria Prevention
Expanding the ownership and use of mosquito nets

School-based distribution in Tanzania
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Cover Photo: School-based distribution in Tanzania
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Back cover photo: Last-mile delivery of ITNs via a motorbike
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PURPOSE OF DOCUMENT

It has been well-established and demonstrated in recent programme experience that increasing insecticide-treated net (ITN) access will decrease malaria incidence[1,2]. ITNs are one of the most cost-effective measures for preventing malaria. Alongside programmatic achievements to deploy more than 1.25 billion ITNs in the past five years, there has been only a modest increase in access to ITNs from 68 per cent in 2015 to 73 per cent in 2023[3]. The reasons for this marginal gain over time include per capita malaria funding which has not increased in the face of population growth, higher commodity costs associated with the ITNs needed to address pyrethroid resistance, operational barriers for ITN distribution through routine antenatal care (ANC) or Expanded Programme on Immunization (EPI) services which reduce access for some vulnerable populations, and variable durability of ITNs, for which the median retention time does not span the expected three years between ITN mass distribution campaigns. To maximize malaria protection for populations, national malaria programmes (NMPs) are having to choose between type and quantity of ITNs, target areas and deployment channels based on context and operational feasibility, availability of ITNs and operational resources to deliver them.

Selection of ITN type, ITN access targets and the optimal mix of ITN distribution channels to achieve those targets is critical to maximizing impact on malaria.

The most effective ITNs should continue to be selected according to insecticide resistance profiles. After ITN type selection, NMPs are encouraged, in line with use of data for decision-making at sub-national levels, to explore optimal channel mixes to ensure sustained ITN access and use.

With the objective of optimal distribution of ITNs to populations who need them, the purpose of this document is to provide guidance for NMPs and partners to:

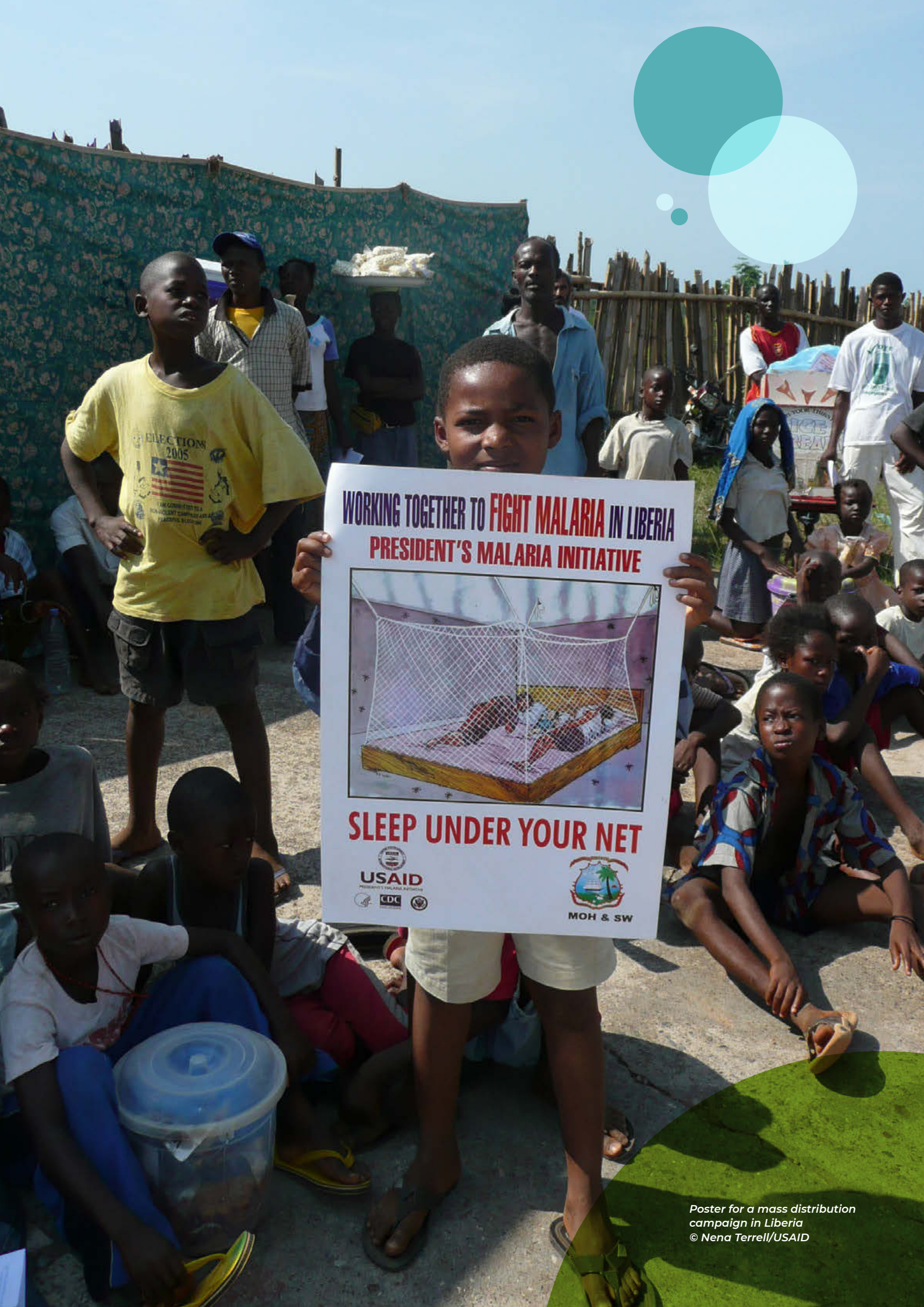
1. Assess existing ITN distribution channel capacity, effectiveness and efficiency in reaching and maintaining equitable access in the targeted populations.

2. Understand strengths and limitations of each ITN channel and distribution strategy.

3. Determine the optimal ITN distribution channel mix based on data and local context.

An adaptable tool to aid NMPs through the assessment accompanies this guidance, and a summary of potential cost elements can be found in the Annexe.

1. Bhatt S, Weiss DJ, Cameron E, Bisanzio D, Mappin B, Dalrymple U, et al. The effect of malaria control on *Plasmodium falciparum* in Africa between 2000 and 2015. Nature 2015;526(7572):207-11
2. Wagman, Joseph (2023). Presentation to the RBM Vector Control Working Group, 2023. The Effectiveness of Dual-AI ITNs Distributed at Scale. https://endmalaria.org/18th-annual-meeting-vector-control-working-group.
3. WHO, World Malaria Report (2022). https://www.who.int/teams/global-malaria-programme/reports/world-malaria-report-2022.



Poster for a mass distribution campaign in Liberia
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INTRODUCTION

NMPs lead the development of five-year National Malaria Strategic Plans (NMSP), with technical support from the World Health Organization (WHO) coordinating harmonized support across malaria partners. NMSPs are aligned with National Health Sector Strategic Plans, which incorporate key guiding principles of inclusive and coordinated partnership; accountability; evidence-based and results-oriented management; socio-economic inclusivity and equity[4]. NMSPs typically define ITN distribution channel options and mixes – mass campaigns and continuous distribution – for achieving malaria prevention targets.

While NMSPs may describe a range of channels for ITN distribution, many NMPs have maintained a two-channel approach, with the focus being on three-yearly mass distribution campaigns with intercurrent continuous distribution to pregnant women and children under five via ANC and EPI during routine health visits. This status quo approach is unable to achieve and maintain stable, 80 per cent population access to ITNs in most malaria-endemic countries, given that most ITNs are retained/serviceable for fewer than the expected three years[5].

Sufficient evidence exists for NMPs to consider a multi-channel approach to ITN distribution, with channel mixes determined based on disease burden, ITN durability and retention data, costs, operational feasibility and other factors to maintain consistent, optimal ITN access for populations in need. This requires selecting the appropriate combination of campaigns and continuous distribution channels, including distribution through routine ANC and EPI services, school-based, and/or community-based channels according to local context[6]. Additional channels, including the distribution of ITNs through commercial sector distributors, wholesalers and retailers, should also be considered but are not discussed in detail in this document.

Global Fund, GC7 Programmatic Reprioritization Approach, 2025[7]

- If universal coverage via mass campaigns is not possible, aim for as high coverage as possible in high and moderate areas by implementing lower coverage targeted campaigns or higher throughput CD channels such as annual school-based distribution.
- Ensure routine channels are functional in all at-risk areas to cover biologically vulnerable groups.
- Consider when alternative channels might be appropriate, given the local context and/or if the quantity of nets reduces so far as to make campaigns uneconomical. For example, annual school-based distributions are a strong alternative to campaigns as they can be adapted to the number of nets available, target children missed by ANC/EPI delivery and can channel nets to households between campaigns to address net attrition.

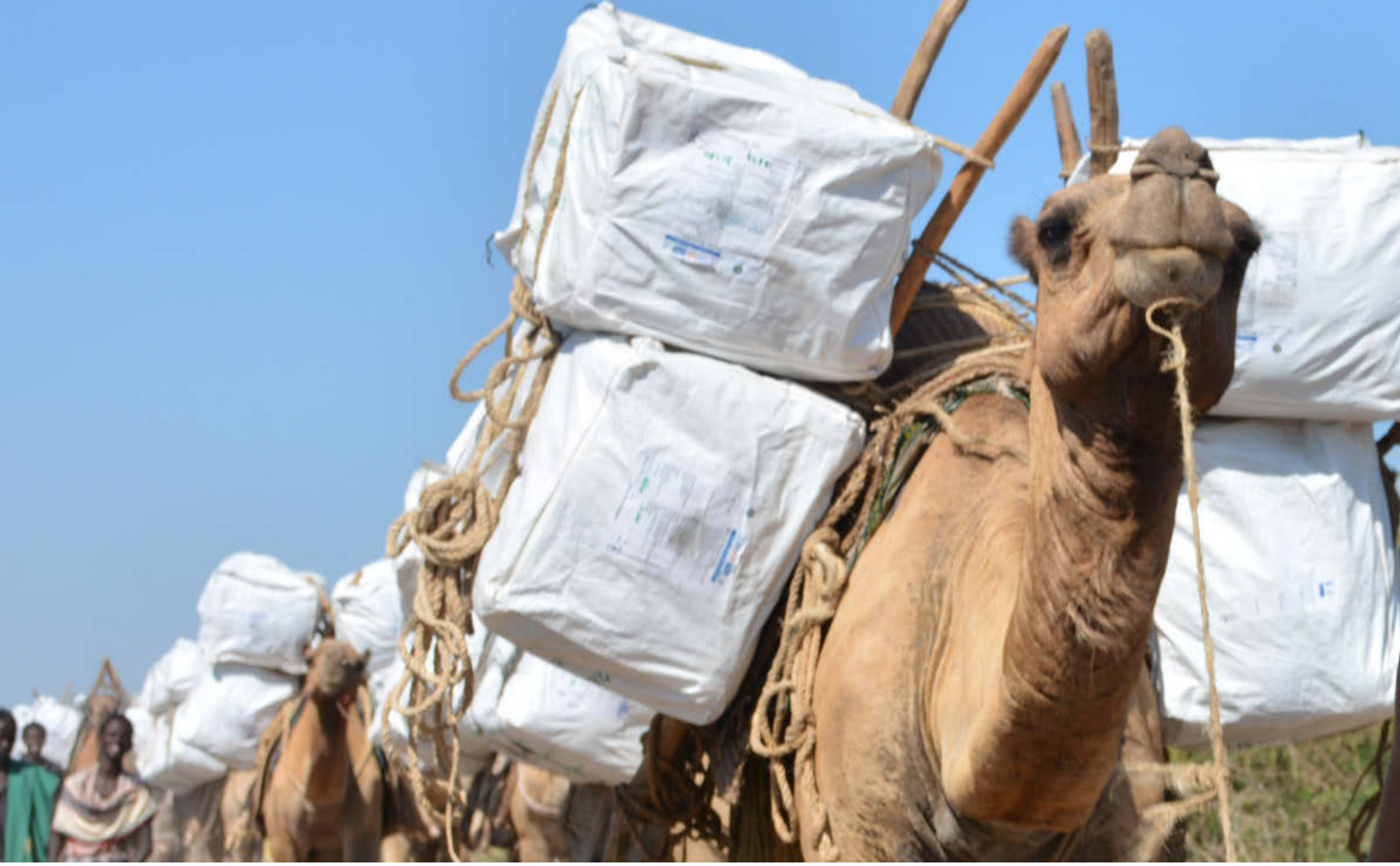
4. Manual for developing national malaria strategic plans. Brazzaville: WHO Regional Office for Africa; 2018. https://iris.who.int/bitstream/handle/10665/324995/9789290234197-eng.pdf
5. Koenker, H., Yukich, J., Erskine, M. *et al*. How many mosquito nets are needed to maintain universal coverage: an update. *Malar J* 22, 200 (2023). https://doi.org/10.1186/s12936-023-04609-z
6. Ibid.
7. https://resources.theglobalfund.org/media/sveowiic/cr_gc7-programmatic-reprioritization-approach_summary_en.pdf

In cases where there are insufficient resources to maintain ITN access for all at-risk populations, it may be necessary to prioritize the most vulnerable and to select the most appropriate channel(s) for reaching them. Having channels that prioritize specific groups is a helpful way to maintain wide awareness of the vulnerability of these groups and ensure households within these groups have sufficient ITNs. It is important to note that the main purpose of any distribution channel is to ensure nets reach households to contribute to maintaining access to nets in the family, but there is no expectation that the specific group targeted by the channel will be the sole users.

Channels may include national or sub-national mass campaigns (targeting the whole population or priority populations by age or other vulnerable groups); tailored continuous distribution through routine ANC, EPI or other health services to target biologically vulnerable people; comm unity- or school-based distribution, as described below.

In all contexts, NMPs will need to foster a data-driven continuous improvement culture, where selected ITN channels can be reviewed and adjusted, added or dropped to meet overall ITN access goals[8].

8. Alliance for Malaria Prevention (2024). ITN distribution: Best practice update. https://allianceformalariaprevention.com/wp-content/uploads/2024/08/Best_practice_distribution_ITN_EN.pdf



ASSESSING THE PERFORMANCE OF CURRENT ITN CHANNELS

The WHO Global Technical Strategy for Malaria 2016—2030 sets an ambitious target of "Reducing malaria mortality and case incidence by 90 per cent by 2030, as compared with 2015"[9]. As a first step in considering whether adjustments to the current ITN distribution channel selection and mix are needed, it is necessary to consider ITN access data in general, and then specifically for the current mix of channels and each channel individually.

Each channel should be assessed in terms of its functioning to achieve equitable, continuous and cost-effective ITN access, as well as its implementation costs (human resources, time and funding). Any consideration for modifying the current mix of ITN distribution channels will need to build on or maintain strengths and address weaknesses in the distribution channels in use.

> To achieve and maintain optimal coverage, countries should apply a combination of mass free net distribution through campaigns and continuous distribution through multiple channels, through ANC clinics and the EPI. Complementary continuous distribution channels are also required because coverage gaps can start to appear almost immediately post campaign due to net deterioration, loss of nets and population growth.
>
> WHO Malaria Guidelines

9. Global technical strategy for malaria 2016–2030, 2021 update. Geneva: World Health Organization; 2021. https://www.who.int/publications/i/item/9789240031357

Last-mile delivery using a camel caravan to transport ITNs in Ethiopia
© Mikiyas Tesfaye/GHSC-PSM

Key illustrative considerations[10] for how well each ITN channel currently in use contributes to achieving targets based on NMSPs include:

- Target levels of access as measured by the percentage of households receiving an ITN among households eligible to receive an ITN, by channel
- Equity of access across and within households, as measured by population access
- Continuity of access across years as measured by percentage of households with at least one ITN; percentage of population with access to an ITN each year
- Cost-effectiveness, as measured by cost per ITN distributed

Channel-specific practical and operational advantages or challenges and the resources required to support the current strategy should be considered when determining an optimal mix of distribution channels or modifications to the current channel mix and strategies. Assessment learnings should focus on geographic areas and population groups expected to be targeted by future ITN channel mixes, to maintain relevance of findings.

10. This list is not exhaustive and needs to be adjusted to national objectives, targets and indicators.

Key considerations for reviewing existing ITN distribution channels:

- **ITN access** at sub-national level (differentiate urban, rural, hard-to-reach, complex operating environments and other areas) and among priority populations for targeted areas.

  For each channel in use, assess:

  - Where were access objectives reached? Why? How?
  - Where were access objectives not reached? Why?
  - What is needed, for currently used channels, to reach access targets for ITN distribution?

  After assessing each channel individually, NMPs should assess the channel combination being used to see if it is achieving the access targets established in the NMSP and consider the following:

  - Can identified operational issues be addressed through adjusted ITN distribution strategies and/or operations **OR** through adjusting the channels for distribution **OR** a mix of both?

- **ITN distribution operations** are important to assess as access and use may be optimized and/or efficiencies gained by adjusting operational strategies. ITN distribution operations include, for example, the strategies used for each channel – door-to-door versus fixed sites for campaigns, class selection for school-based distribution or criteria for inclusion in routine health facility distribution.

  For each channel in use, assess:

  - Were strategies successful for achieving ITN access targets - as measured by the percentage of households receiving an ITN among households eligible to receive an ITN, by channel?
  - Which strategies were the most successful? Which strategies were the least successful?
  - In which geographic areas were ITN distribution activities high performing and which lower performing? Why? What was the difference?

After assessing each channel individually, NMPs should consider the channel combination they are using and assess:

- Can identified operational issues be addressed through adjusted ITN distribution strategies and/or operations **OR** through adjusting the channels for distribution **OR** a mix of both?

- **Operational costs** for each channel, including time, human resources and funds for the targeted areas.

  For each channel in use, assess:

  - How much did it cost (per net, per individual recipient) to reach the target areas with ITNs? How much time did it take?

  - Were there sufficient resources (time, human resources and funds) to implement the ITN distribution channel as planned? If not, what and where were the gaps?

  After assessing each channel individually, NMPs should consider the channel combination they are using and assess:

  - Can operational costs be reduced/gaps filled through adjusted ITN distribution strategies and/or operations **OR** through adjusting the channels for distribution **OR** a mix of both?

When considering the specific channel combination, ITN access, distribution operations and operational costs should be considered holistically as there will inevitably be trade-offs between the three components. Decisions based solely on operational costs are not recommended as cost alone does not consider the relative health impact achieved by channels and their different approaches to targeting.

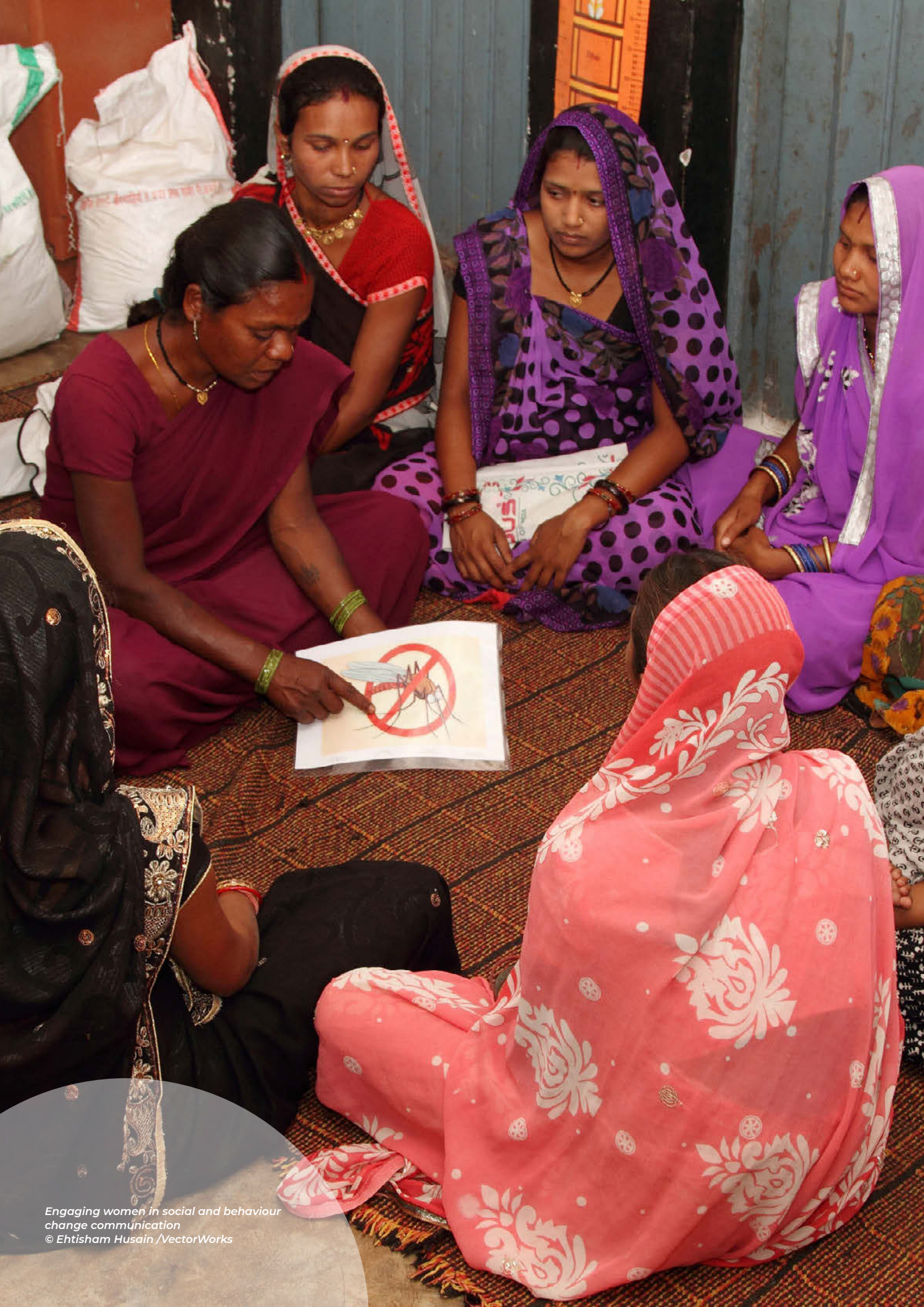
Definitions

ITN mass distribution campaign strategies include but are not limited to:

- A fixed-site distribution strategy with separate household registration process, in which households often receive a voucher or other means of identification to exchange for the requisite number of ITNs at a pre-determined ITN distribution site.
- A "door-to-door" approach in which household registration and distribution are conducted either during a single-phase campaign, which involves registration and ITN distribution during a single visit, or during a double-phase campaign, which involves a first visit to the household to conduct registration and a second visit for ITN distribution.

Campaign strategies may also vary in their target coverage (national, sub-national, rural, etc.) and, relatedly, in their target groups (full population or a sub-group defined by age or other vulnerability). Where ITN mass campaigns target a specific population group, such as children under five, the two strategies described will be adjusted as no household registration process is required to identify the target group to receive ITNs.

ITN continuous distribution (CD) includes distribution of ITNs via routine health services such as ANC or EPI, community- and/or school-based channels as further described below.



Engaging women in social and behaviour change communication
© Ehtisham Husain /VectorWorks

ITN DISTRIBUTION CHANNELS

The sections below provide an overview of the main distribution channels, summarizing their strengths and weaknesses and providing information on key considerations (access, target groups, quantification, operational costs and operational considerations).

The intent is to give decision-makers high-level information to prompt further discussion of context-specific options to reinforce strengths and address weaknesses of the status quo approach. A key consideration for NMPs will be cost for shifting or adjusting channel mixes, specifically whether it will take more/fewer resources to achieve targets as well as how, where and why.

The information below is based on current evidence and experience: experience and data on some channels is more available than others and as more evidence is built this guidance will be updated. Operational costs are an area where additional work is needed. Indicative costs for selected channels are available in the published literature, but NMPs will need to assess channel costs locally, considering the contribution from different resources (domestic, international). Across the countries included in the costing research, "from the international donor perspective, there was little difference between the four channels studied (3.30–4.55 USD) … Mass distributions are heavily financed by donors, while CD relies more heavily on domestic contributions … Donors and other planners of ITN distribution systems need to consider in-country contributions in the planning process, even though these may not have explicit budget implications"[11].

11. Scates, S.S., Finn, T.P., Wisniewski, J. et al. Costs of insecticide-treated bed net distribution systems in sub-Saharan Africa. *Malar J* 19, 105 (2020). https://doi.org/10.1186/s12936-020-03164-1

KEY CONSIDERATIONS – MASS CAMPAIGNS

Considerations	Recommendations
Access: Campaigns are a key channel for rapidly scaling up access to ITNs. Generally, mass campaigns achieve high and equitable access to ITNs across populations, even those with limited access to routine health services or low school enrolment, in a short period of time. This is true of campaigns that target only children under five, as well as campaigns targeting full population access. As mass campaigns are typically implemented every three years, the timeline may not be aligned to demonstrated ITN lifespans in the field, and thus ITN access should be carefully monitored and options to fill gaps identified to maintain access above NMSP target levels until the next campaign is implemented.	To maintain ITN coverage, NMPs are encouraged to align with WHO Malaria Guidelines as well as malaria donor recommendations; review operational and financial data; and consider the best distribution targets and strategies to maintain ITN access in various sub-national contexts and settings. Tailored strategies based on malaria epidemiological, entomological and human-behavioural data are important for prioritizing resources to optimize ITN access. For example, urban and peri-urban areas, which are often low burden, can use significant mass campaign resources and may divert resources from higher-burden rural areas. Continuous distribution channels may provide a more cost-effective approach to achieve access for the most vulnerable in those settings. Aligning ITN access targets to epidemiological data for sub-national areas may create resource efficiencies. Conducting mass campaigns every two years has been shown to require far more ITNs than adopting a continuous distribution strategy and is therefore not recommended[12].
The **target group** for campaigns may be the entire population in each area, with prioritized geographical areas defined based on malaria epidemiological data or priority populations by age (e.g. children under five) or other vulnerable groups (e.g. migrant, internally displaced persons [IDPs], refugees, etc.).	
Timing: ITN campaigns are typically planned with an interval of 30—36 months, with the objective of rapidly scaling up ITN access lost since the previous campaign. Campaigns may last several months, may continue over a year or more, or may be continuous (different areas targeted each year), straining health personnel and systems and putting at risk the achievement of broader malaria programme targets and efficient use of resources.	

12. Koenker, H., Yukich, J., Erskine, M. et al. How many mosquito nets are needed to maintain universal coverage: an update. *Malar J* 22, 200 (2023). https://doi.org/10.1186/s12936-023-04609-z

Considerations	Recommendations
Quantification for ITN mass campaigns to date has generally been based on the estimated population targeted divided by 1.8 to allow for rounding up of ITNs allocated to a household to achieve high intra-household coverage. This approach to achieve population access needs to be adjusted based on decisions by the NMP considering available funding and campaign coverage targets, varying the 1.8 factor as appropriate. Where NMPs are targeting only children under five, the quantification for ITNs can be based on national estimates and checked against EPI data.	The quantification factor of 1.8 may still be sufficient, where NMPs are still trying to achieve population access. However, in a context of limited resources, national programmes may take different decisions based on targets (ITN access, populations, etc.), including adjusting how ITNs are allocated to households (e.g. rounding down rather than up for households with an odd number, providing a fixed number of ITNs per household). Country-specific data may indicate a need to modify targets at a national or sub-national level in line with malaria burden.

Considerations	Recommendations
Cost: There are important national and sub-national variations in cost for ITN distribution through mass campaigns, as well as – in many places – significant opportunities to reduce costs. Mass campaigns generally require significant mobilization of the health workforce, recruitment and training of thousands of community level personnel for registration and distribution activities, and significant funding for campaign processes such as microplanning, household registration, logistics-related operations, ITN distribution and supervision and monitoring. Some cost elements may be shared in the context of integrated service delivery (e.g. ITNs and seasonal malaria chemoprevention [SMC], ITNs and EPI, ITNs and mass drug administration for neglected tropical diseases [NTDs]). Examples include the reuse of household registration data and shared costs for digital devices and other field materials during integrated campaigns.	While many NMPs may be able to find efficiencies to reduce operational costs, others may not be able to reduce costs, particularly those where robust attempts to optimize costs have already been made, or in complex operating environments (COE). In COE contexts, other channels and/or strategies may provide a more operationally feasible and/or less costly option for ensuring ITN access targets are achieved and maintained.
Operational considerations: Campaign distribution strategies need to be tailored to the operational context. For example, a door-to-door approach in a hard-to-reach area may be most appropriate, while fixed site distribution may be best for a community in a more accessible area. See: https://allianceformalariaprevention.com/events-and-conferences/ta-monthly-calls/	Appropriate distribution strategies will require sub-national tailoring (similar to decision-making about which ITN types to distribute and where), considering operational and epidemiological context.

Considerations	Recommendations
Epidemiological considerations: While campaigns achieve high and equitable ITN access immediately post distribution, in some cases operational approaches during campaign household registration and ITN distribution may inadvertently reduce ITN access in remote and hard-to-reach areas where planning is not aligned to context. Additionally, ITN allocation during campaigns (often one ITN for every two people) may not reflect household sleeping patterns, reducing ITN intra-household access for some members of a household.	Campaigns are an important channel for achieving high ITN access including for remote populations and in COE where specific operational strategies are adopted in line with the context. They are appreciated by communities and supported by the Ministry of Health (MoH), administrative authorities and donors as providing "quick wins". To address resource constraints, NMPs may consider implementing reduced coverage campaigns or specific prioritized group campaigns (e.g. children under age five). Deciding where to implement these will require sub-national tailoring, considering operational and epidemiological context, and should be done with support from WHO or other technical partners.

KEY CONSIDERATIONS – ROUTINE DISTRIBUTION

Considerations	Recommendations
Access: Routine distribution is a key channel for ensuring a continuous flow of nets into households, maintaining wide awareness of the vulnerability of the targeted groups to malaria and ensuring households with these groups have sufficient ITNs. Routine distribution is included in most NMSPs and implemented nationally in most malaria-endemic countries.	To overcome noted challenges of ITN distribution through routine channels not reaching priority vulnerable populations, it is critical for NMPs to review weaknesses in the system and make plans to address them for optimal functionality. This has been shown to increase achievement of programmatic targets and improve access for pregnant women and young children. Access to ITNs through routine health services can be improved by ensuring the channel is reaching a maximum number of pregnant women and children under one year.
Target group: Currently, routine distribution of ITNs prioritizes primary healthcare channels with a high volume of patients, including ANC and EPI.	Clarifying eligibility instructions to specify which priority groups are eligible and reducing administrative burdens impeding receipt of ITNs (e.g. ID card requirements) and disseminating this information widely to health facility teams is an important element in reinforcing ITN access through ANC and EPI services. As NMPs address resource constraints and potentially withdraw large-scale vector control in some areas, consideration should be given to expanding the criteria for routine distribution to ensure those at highest risk still have access to ITNs. For example, NMPs could consider giving more than one ITN to clients at ANC and EPI or providing ITNs to patients discharged after hospitalization for severe malaria to ensure that they are protected when they return home.
Timing: Eligibility is often based on established NMP (and Mother Child Health where applicable) policies for ITN provision (e.g. at first ANC visit, at assisted birth, with measles vaccination or with last malaria vaccine) and should continue irrespective of campaign or other ITN distribution timing.	

Considerations	Recommendations
Quantification is based on the percentage of the population that comprises children in the target age group and (separately) pregnant women. Quantification is often country-specific and can also consider the performance of the channel (e.g. past level of attendance at ANC and EPI consultations, and ITNs issued to the target group).	Quantification should consider improvements to the channel to optimize it, as well as an expanded target group where either or both of these are being considered. The ITN Quantification site includes an estimate of six per cent of the population reached by ITN distribution through ANC and EPI services.
Cost: Historically, a higher proportion of the costs of routine distribution have been covered by domestic funding compared to costs for mass campaigns and school-based distribution. This reflects the "continuous nature of community and health facility-based CD and the level of commitment required from the government"[13]. When considering international donor funding, the cost per net delivered is comparable across all channels described in this document.	While delivery costs are typically shared with EPI, Reproductive, Maternal, Neonatal and Child Health (RMNCH), and/or Primary Health Care (PHC) departments, gaps may be identified which need to be included in NMP plans and budgets. For example, budgets must include transport of ITNs from regional and district warehouses to health facilities.

13. Scates, S.S., Finn, T.P., Wisniewski, J. et al. Costs of insecticide-treated bed net distribution systems in sub-Saharan Africa. Malar J 19, 105 (2020). https://doi.org/10.1186/s12936-020-03164-1

Considerations	Recommendations
Operational considerations: Routine distribution is generally implemented in collaboration with the Primary Health Care (PHC) division of the MoH, relying on trained PHC personnel at regional, district and facility levels to manage storage, logistics, social and behaviour change (SBC), ITN distribution, data collection and accountability. While many NMPs have extensive experience with routine distribution of ITNs, the channel does not always function optimally for various reasons. One multi-country review found that ITN issuing varied from 31—93 per cent of pregnant women reached and 39—92 per cent of children via EPI services[14]. Challenges include lack of available guidelines, supply chain challenges particularly for ITNs to reach health facilities, provider reticence in some cases to provide ITNs systematically to eligible pregnant women and caregivers, poor reporting of ITNs distributed and updating of ITN stock and requisition needs and lack of coordination with relevant stakeholders including EPI, RMNCH and PHC.	A review of the functioning of the routine channels should be done by NMPs with relevant stakeholders (e.g. EPI, RMNCH, PHC) to ensure gaps are identified and plans/budgets adjusted.
Epidemiological considerations: As a standalone channel, if well performing, it is estimated that routine distribution can provide approximately 20 per cent of the need in a household with members in the target population. Furthermore, ITN distribution through routine ANC and EPI channels directly provides ITNs to pregnant women and young children who are biologically vulnerable in malaria-endemic settings.	Note that even if combined with a campaign every three years, this combination of channels will still be insufficient to provide sustained optimal access to the populations targeted.

14. Miller JE, Malm K, Serge AA, Ateba MJ, Gitanya P, Sene D, Kooma EH, Kandeh B, Gerberg L, Nuñez L. Multi-country review of ITN routine distribution data: are ANC and EPI channels achieving their potential? *Malar J.* 2022 Dec 3;21(1):366. https://pmc.ncbi.nlm.nih.gov/articles/PMC9719175/

KEY CONSIDERATIONS – SCHOOL-BASED DISTRIBUTION (SBD)

Considerations	Recommendations
Access: ITN distribution is targeted to specific classes and age groups on an annual basis to provide sustained ITN access to households, either complementary to or as a replacement for mass campaign distribution.	Like ANC and EPI, SBD can be a useful continuous distribution channel using an established system and can ensure that some of the gaps in intra-household access observed in campaigns due to the ITN allocation approach can be filled. It is important to use data to assess the level of equity that can be achieved in different sub-national contexts through SBD, particularly if poor or marginalized populations do not attend schools but live in high burden areas. In areas with low school enrolment, consider community-based distribution as an alternative or complementary channel.
Target group: School-based distribution generally targets specific age groups (classes) of children based on an analysis of the target ITN access level that the NMP is trying to achieve, the number of school-aged children in each class and the number of ITNs available. Primary schoolchildren are often selected as enrolment rates are higher than in secondary schools. In some countries both primary and secondary classes are included to reach more households.	Each NMP should assess the options (mix of classes, frequency of distribution) and align the SBD strategy to the sub-national context using available data. The target group and the timing for ITN issuance should be based on achieving the objectives set in the NMSP, distribution within the school calendar, and avoiding overlap with exams or school holidays. While ITNs are distributed to schoolchildren, it is important to reinforce that the ITN is for the household.
Timing: ITN SBD is often conducted annually.	

Considerations	Recommendations
Quantification: Quantification is based on a population quantifier that varies depending on the overall channel mix and the NMP's target for ITN access. Applied to the population in the target geography(ies), the quantifier is used to estimate total ITN need for SBD. For more detailed planning and quantification at the school level, NMPs should collaborate with the Ministry of Education (MoE) to obtain accurate class and attendance data for all relevant school grades in target geographical areas.	The ITN Quantification site provides country-specific quantifications and quantifiers across ITN distribution scenarios to meet targets for ITN access, considering ITN retention times specific to each country. NMPs can use the quantifiers to estimate ITN need for a given ITN access target, using the population in the area in which SBD will be implemented. Where Demographic and Health Survey (DHS) data or other data indicate that the level of current primary school enrolment is equal to or greater than needed (number of children to achieve access targets as per the objectives detailed in the NMSP), full-scale annual ITN SBD provides a feasible option for maintaining ITN coverage, alongside routine ITN distribution.
Cost: ITN SBD leverages existing MoE as well as MoH systems, thus reducing costs for items including ITN storage and security. However, SBD requires significant human resources and resource mobilization costs for coordination, ITN issuing and reporting. Thus it is more resource intensive than ITN routine distribution but less so than ITN mass campaign distribution. Further information to support detailed costing for SBD can be found here.	In addition to the capital costs of ITN procurement, shipping and customs clearance, the items below should be considered in planning SBD but should be integrated as much as possible with existing processes, training and planning: • Planning meeting(s) and coordination with civil society and community groups • Training of community health workers (CHWs) • Printing and distribution costs for training, job aids, SBC materials, logistics tracking forms, distribution and reporting forms • Reporting tool development • Transport of ITNs to schools • Supervision

Considerations	Recommendations
Operational considerations: School-based distribution allows targeted distribution to students that can be easily quantified, where they will receive their ITN in a location where they travel each day, and where social and behaviour change messages can be shared. SBD is generally implemented in collaboration with the MoE, relying on educated and skilled teachers to issue the nets, collect data on nets distributed and recipients and ensure ITN accountability throughout the process.	Areas with a well-functioning education system and a sufficient proportion of the population currently attending primary school should start SBD closely following a mass campaign when baseline ITN access is high. SBD should be implemented alongside ITN distribution through routine ANC and EPI services and may be considered as the main channel for maintaining population-level ITN access instead of a mass campaign. It is recommended to involve all types of schools in the distribution (i.e. public, private, boarding, religious/Koranic) to ensure high and equitable access to ITNs according to context.
Epidemiological considerations: A well-functioning school distribution channel in a context of high enrolment and high proportion of families with school-age children will ensure continuous access to ITNs for a large percentage of the population (determined based on the strategy for the school-based distribution, including classes and age groups targeted).	SBD can reach a large proportion of the population but may not reach all in a targeted geographic area as not all households may have children enrolled in school.

KEY CONSIDERATIONS – COMMUNITY-BASED DISTRIBUTION (CBD)

Considerations	Recommendations
Access: Community-based distribution (CBD) of ITNs has been adopted in several countries and engages communities and community actors to provide community members ongoing access to ITNs, based on criteria established by the NMP.	CBD is a useful channel for ensuring that populations have continuous access to ITNs and that uncovered sleeping spaces and new community members can be covered. A functioning CBD system is reactive to gaps in access and can rapidly close them.
Target group: Community-based distribution generally aims to ensure that all members of the community are covered, though NMPs may opt to prioritize specific populations or age groups. Community-based distribution allows for targeted distribution to households that have insufficient ITNs to cover either all or certain age groups.	In collaboration with civil society and community groups, NMPs can define eligibility criteria for community-based distribution of ITNs. For example, criteria may include biologically vulnerable populations, including pregnant women and young children who did not receive ITNs through other channels; populations who have lost ITNs due to damage, insecurity or other events; recent arrivals in the community; newly married couples; households without school-age children; and others.
Quantification: Quantifying ITN needs for CBD is more challenging than for other channels and will depend on the eligibility criteria used. Initial quantification will be based on best estimates using, for example, data on population counts, household composition and/or number of sleeping spaces, estimates of ITN lifespan, and annual in-migration and births. Civil society partners familiar with the implementation areas can help ground truth estimates. Close monitoring during the first year will help inform ongoing estimates of need.	The ITN Quantification site provides country-specific quantifications and quantifiers across ITN distribution scenarios to meet targets for ITN access, considering ITN retention times specific to each country. NMPs can use the quantifiers to estimate ITN need for a given ITN access target, using the population in the area in which CBD will be implemented. Initial demand for nets through CBD is likely to be higher than ongoing demand. Planners should ensure a conservatively high number of ITNs are available in the first year to support a smooth start to distribution.

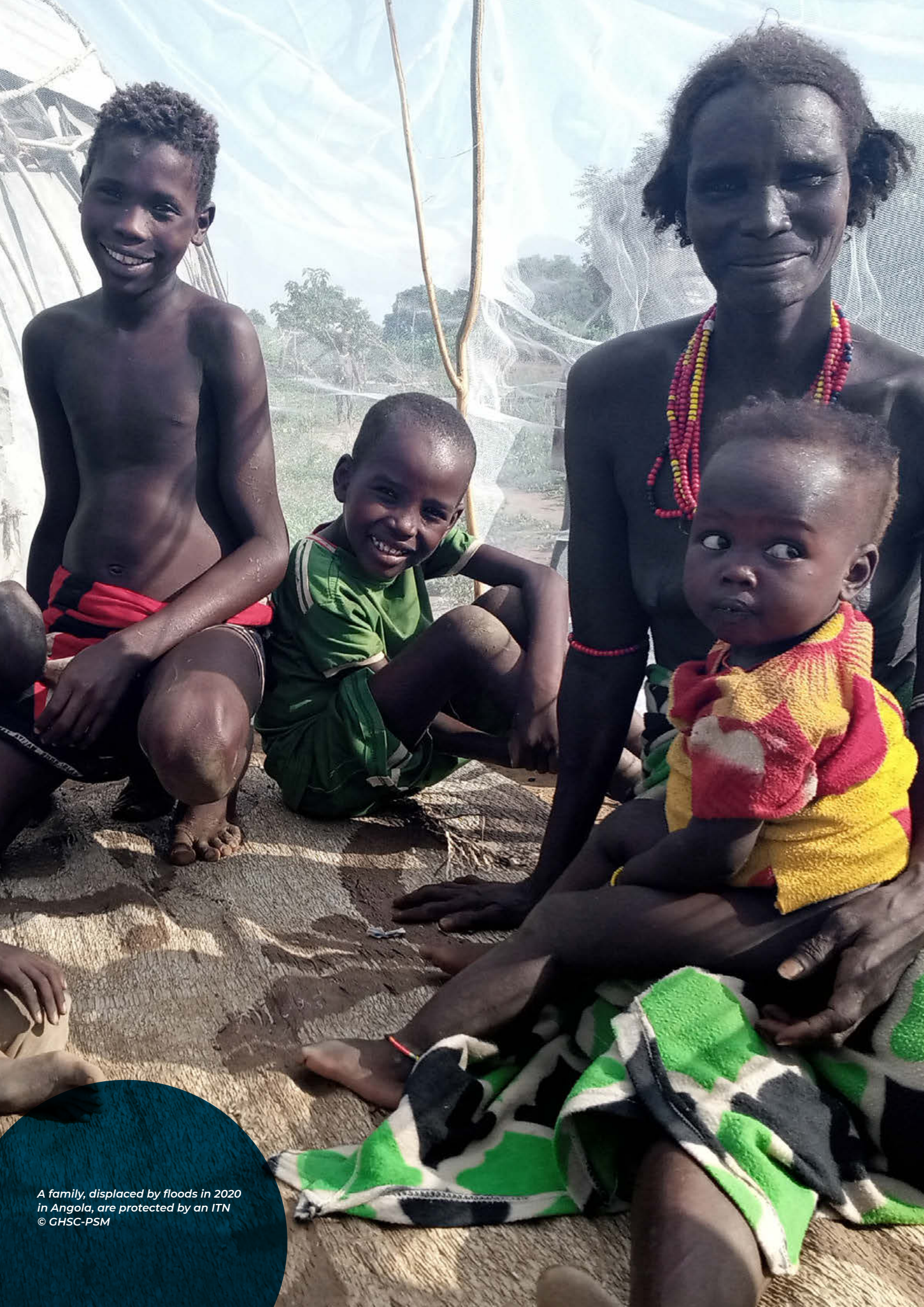
Considerations	Recommendations
Cost: Where investments are being made to strengthen the community health system, the costs of ITN distribution are likely to be reduced as ITNs are incorporated alongside other community health interventions. Community health interventions include integrated community case management of malaria, diarrhoea and pneumonia (and malnutrition or other interventions depending on the national package); nutrition programmes; and community health campaigns including seasonal malaria chemoprevention, deworming and others.	In addition to the capital costs of ITN procurement, shipping and customs clearance, the items listed below should be considered in planning CBD but should be integrated as much as possible with existing processes, training and planning: • Planning meeting(s) and coordination with civil society and community groups • Training of CHWs • Printing and distribution costs for training, job aids, SBC materials, logistics tracking forms, ITN coupons/vouchers (or alternatives such as e-tokens), distribution and reporting forms • Reporting tool development • Transport of ITNs to communities • Supervision
Operational considerations: Community-based distribution can operate in different ways (for example, CHWs identify uncovered sleeping spaces or people and provide a voucher for them to access ITNs at the nearest health facility, or CHWs provide ITNs directly, for example during a single monthly distribution for those registered).	The operational strategy for community-based distribution should be determined based on contextual and operational criteria (such as presence and strength of CHW network). In some contexts, community-based distribution may be managed by community leaders where access is difficult due to conflict or insecurity, and where equity and accountability can be ensured. CHWs can be trained to implement ITN distribution according to the eligibility criteria established; to track ITN distribution, remaining stock and resupply needs; to deliver key SBC messages and to conduct follow-up visits to reinforce consistent use and care of ITNs alongside their other community health interventions.

Considerations	Recommendations
Epidemiological considerations: A well-functioning community-based distribution channel will ensure continuous access to ITNs for populations in need (as identified by CHWs, community leaders or through another mechanism).	CBD is an important channel for hard-to-reach populations, complex operating environments (including those with health facility closures), and contexts with low school enrolment in which SBD is not efficient, particularly where community health and civil society networks are in place, appreciated by communities and supported by the MoH and administrative authorities and donors where feasible.

Key terms

Channel: The operational means through which populations can access ITNs. The ITN policy (or NMSP) should describe the optimal use and mix of channels for ITN distribution, which will include a combination of continuous distribution channels, such as ITN distribution through routine health services, schools and community health workers, as well as mass campaigns. Some NMSPs include other channels, such as bundling of ITNs with non-food items (NFI) packages for reaching hard-to-reach areas and populations (such as internally displaced persons, refugees), as well as private sector sales (subsidized as part of social marketing efforts or full price) for specific geographical areas (such as urban and peri-urban). These channels are not considered in this guidance.

Strategy: A strategy in the context of ITN distribution is a high-level plan designed to achieve an overall target and specific objectives through an identified channel. A strategy is developed for each distribution channel to ensure that it will achieve its intended targets. For schools, this would include the selection of classes and age groups to be prioritized, while for mass distribution campaigns, this would include door-to-door or fixed distribution point strategies; integration of ITNs with other health interventions delivered through campaigns, and/or consideration of coverage targets or campaign target groups. ITN distribution strategies are often determined after ITN channel decisions, with contextual information used to define what will operationally work best to achieve set targets.



A family, displaced by floods in 2020 in Angola, are protected by an ITN
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ANNEXE: SUMMARY OF COST ELEMENTS FOR EACH ITN DISTRIBUTION CHANNEL

ITN distribution cost categories by channel

Some costs are covered by MoH, administrative and local civil society organizations

Cost categories	Campaign	Routine	School-based	Community-based
Capital costs: Costs for the purchase of goods or services with a lifespan longer than one year.				
ITN procurement, global shipping and customs clearance	The most effective ITNs should continue to be selected according to insecticide resistance profiles and data from sub-national levels and, regardless of the distribution channel, the most effective ITNs should be distributed and ITN types should be harmonized in geographical areas where more than one channel is being used.			
Recurrent costs: Costs incurred for goods or services lasting less than one year.				
Coordination and planning	Meeting venues, refreshments or other costs for coordination and planning (such as development of macroplanning documents). Microplanning trainings and workshops at national and sub-national levels and data validation. As much as possible, these costs should be covered by the government or MoH as they are related to staff roles and responsibilities in their daily work. Free/virtual venues should be used.	Coordination e.g. with MCH, and planning needed to review issuing data and identify operational improvements to increase the percentage of pregnant women and young children receiving ITNs through routine services. As much as possible, these costs should be covered by the government or MoH as they are related to staff roles and responsibilities in their daily work. Free/virtual venues for meetings should be used.	Coordination and planning needed for MoH and MoE logistics, training, supervision and M&E. As much as possible, these costs should be covered by the government or MoH as they are related to staff roles and responsibilities in their daily work. Free/virtual venues for meetings should be used.	Coordination and planning often needed for logistics, training, supervision and M&E. As much as possible, these costs should be covered by the government or MoH as they are related to staff roles and responsibilities in their daily work. Free/virtual venues for meetings should be used.

Cost categories	Campaign	Routine	School-based	Community-based
Household registration (for campaigns targeting population access to ITNs versus specific target groups such as under fives)	Per diems for campaign personnel; vouchers or other means of household identification; training; communication; supervision; data collection, digitalization; reporting. Approaches and costs may differ for fixed-site and door-to-door approaches. Digitalization efforts should prioritize use of open-source software and a "bring your own device" strategy.	Not applicable	Existing school enrolment and/or MoE information system records used. Digitalization efforts should prioritize use of open-source software and a "bring your own device" strategy.	Community health workers (CHWs) are generally responsible for ensuring that they have done a listing of households in their area of responsibility, which can include ITN ownership, condition and needs for new ITNs so this is not a separate activity from routine work.

Cost categories	Campaign	Routine	School-based	Community-based
Storage	MoH or other warehousing should be identified, preferably free of charge or at the cost of the government in each area (e.g. at district level). Where necessary, storage spaces may need to be rented due to the large volume of ITNs for mass campaigns. Warehouse assessments often undertaken to ensure that spaces meet needs; these should be digitalized where possible to reduce costs for teams moving to physically assess warehouses. ITNs often remain in storage at different levels for weeks or months and are stored for limited time at the last storage level due to security concerns.	Storage generally assured through MoH at each level of the in-country supply chain, including health facility level.	Storage often assured through MoH and MoE at each level of the in-country supply chain, including school level. ITNs distributed as soon as possible after delivery (often the next day) to avoid protracted storage at the school.	Storage at health facilities or civil society or community storage sites where available, some of which may need to be budgeted. Preferably, storage should be free of charge or at the cost of the government in each area.
Transport	Includes transport of ITNs and key distribution materials to regional, district, health facility and/or community levels – through direct contracting and/or third-party logistics companies.			
ITN security	Security during storage, transport and distribution.	Security often assured through MoH security in place, including at health facilities.	Security often assured through MoH and MoE security in place, including at schools.	Security may be assured through MoH and civil society storage security in place, including at health posts and CHW homes, some of which may need to be budgeted.

Cost categories	Campaign	Routine	School-based	Community-based
Personnel stipends	Required according to MoH policies.	Not applicable	Not applicable	Yes, but may be included as part of CHW tasks and therefore cost-shared across multiple activities and interventions.
Training for ITN distribution, data collection and reporting	Where possible, e-training should be considered, particularly for countries using digitalized data collection systems. Where in-person training is necessary, particularly at the implementation level, free venues should be used.			
Supervision and monitoring for ITN distribution, data collection and reporting	Where possible, virtual supervision and monitoring should be considered, particularly for countries using digitalized data collection systems. Where in-person supervision and monitoring are necessary, careful consideration should be given to where and why, as well as to the number of people needed and from which levels.			
Social and behaviour change	SBC is an important element for mobilizing people to access ITNs and use them. SBC channels, activities and messages should be targeted based on data, e.g. where use given high ITN access is low.	SBC often assured through MoH health facility ANC and EPI providers. SBC messages should be targeted based on data and with a focus on ITN use, care, repair and repurposing (as applicable).	SBC often assured through school health communication. SBC messages should be targeted based on data and with a focus on ITN use, care, repair and repurposing (as applicable).	SBC often assured through CHW interpersonal communication (IPC). SBC messages should be targeted based on data and with a focus on ITN use, care, repair and repurposing (as applicable).
ITN issuing	Approaches may differ for fixed-site and door-to-door approaches. For door-to-door distribution, a significant cost driver may be last mile logistics and cost-efficient options should be identified.	Issuing directly from MoH health facility ANC and EPI providers and/or through vouchers or coupons as part of staff roles and responsibilities. Where possible, alternatives to vouchers or coupons should be identified to reduce costs for ITN distribution.	Issuing conducted directly by teachers and added to staff roles and responsibilities.	Issuing directly from CHWs and/or from community structures through vouchers or coupons as part of CHW roles and responsibilities. Where possible, alternatives to vouchers or coupons should be identified to reduce costs for ITN distribution.

Cost categories	Campaign	Routine	School-based	Community-based
Redirecting ITNs and/or reverse logistics	Where possible, ITN reverse logistics should be minimized through pre-positioning nets based on microplanning or household registration data (not macroplanning data). Where reverse logistics is needed, ITNs should be redirected to health facilities for routine or community distribution with limited transport costs due to small quantities and short distances.	Not applicable.	Once all school needs met, remaining nets are generally redirected to health facilities for routine or community distribution with limited transport costs due to small quantities and short distances.	Not applicable.
Waste management	Cost and level of effort (LOE) will depend on whether ITNs are bulk (lower cost) or individually packaged (higher cost).	ITNs for routine distribution are individually packaged and therefore generate waste. Cost and level of effort will depend on whether packages are retained at health facilities for disposal/ destruction or whether information is provided through SBC for household-level waste management. If packages are retained at health facilities, they are generally incinerated or buried with limited cost implications (no transport to other levels for management).	Cost and LOE will depend on whether ITNs are bulk (lower cost) or individually packaged (higher cost) and on whether packages are retained at schools for disposal/ destruction or whether information is provided through SBC for household-level waste management. If packages are retained at schools, they will need to be transported for disposal.	ITNs for community distribution are individually packaged and therefore generate waste. Cost and LOE will depend on whether packages are returned or moved to health facilities for disposal or whether information is provided through SBC for household-level waste management. If packages are returned or moved to health facilities, they are generally incinerated or buried with limited cost implications, but transporting waste from community to health facility or other location may involve costs.

Cost categories	Campaign	Routine	School-based	Community-based
Data collection and reporting	Production of data collection tools and support for the collection of data from operational through to national level should be included in NMP planning and budgeting. In many cases, data collection and reporting are digitalized so costs are associated with platform development, configuration, storage and management.	Data collection and reporting assured through health facilities and through MoH reporting, HMIS/DHIS2 in place.	Some data collection and reporting assured through school and MoE reporting, in collaboration with MoH. Production of data collection tools and support for the collection of data from operational through to national level should be included in NMP planning and budgeting. In many cases, data collection and reporting are digitalized so costs are associated with platform development, configuration, storage and management where the existing HMIS/DHIS2 is not used.	Data collection and reporting often assured through CHWs as part of a broader package of health services provided, with data provided to health facilities and through MoH reporting, HMIS/DHIS2 in place. Production of data collection tools and support for the collection of data from operational through to national level should be included in NMP planning and budgeting. In many cases, data collection and reporting are digitalized so costs are associated with platform development, configuration, storage and management where the existing HMIS/DHIS2 is not used.

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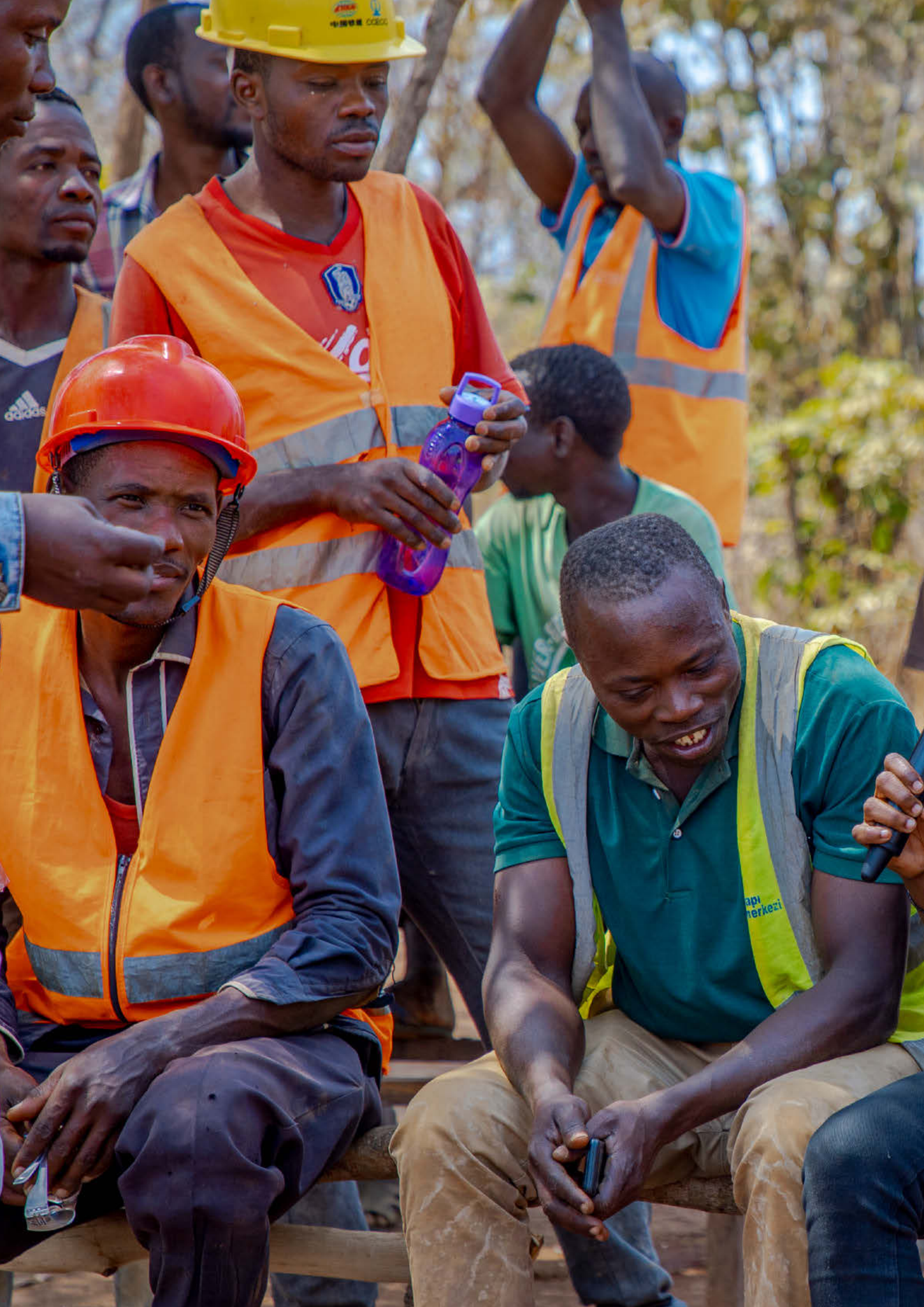

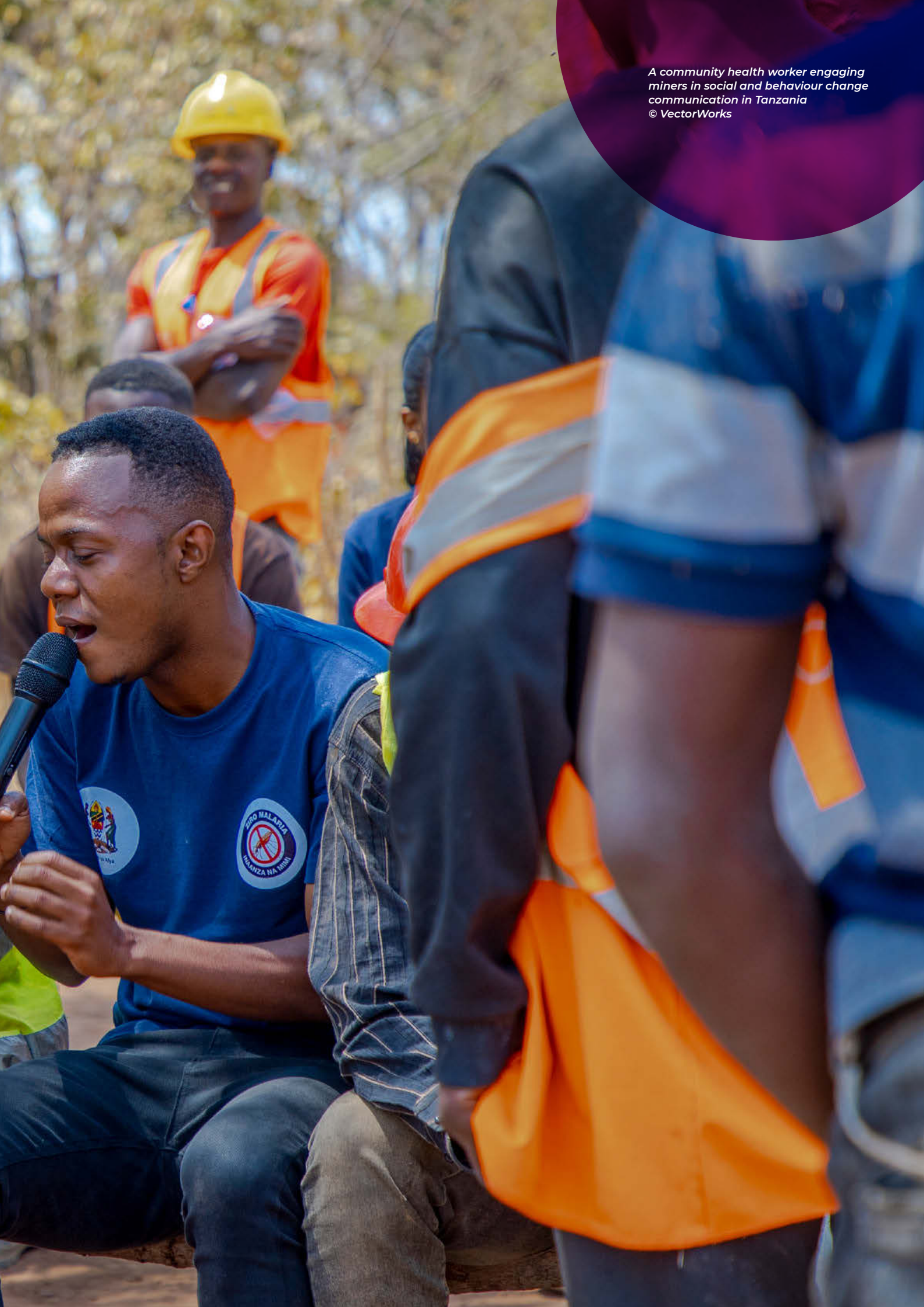

A community health worker engaging miners in social and behaviour change communication in Tanzania
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