



The Alliance for  
Malaria Prevention

# Waste management and End of Life ITNs – Preliminary Results

May 8, 2023

AMP Lunch Session Day 1

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## ***The Problem:***

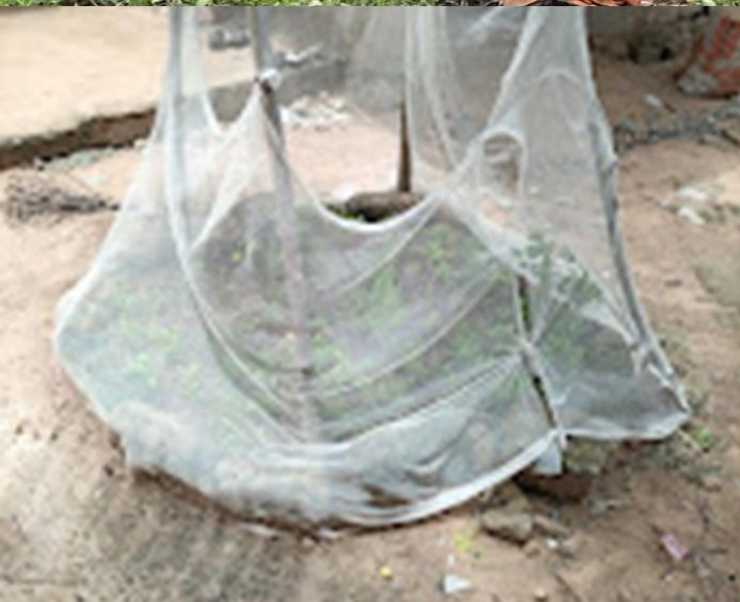
**In 2022 alone, 191 million ITNs were delivered to endemic countries, equaling ~100,000 MT of plastic**

*The environmental impact of ITN distribution has mandated additional review*

***Your engagement is essential to operational guidance development***



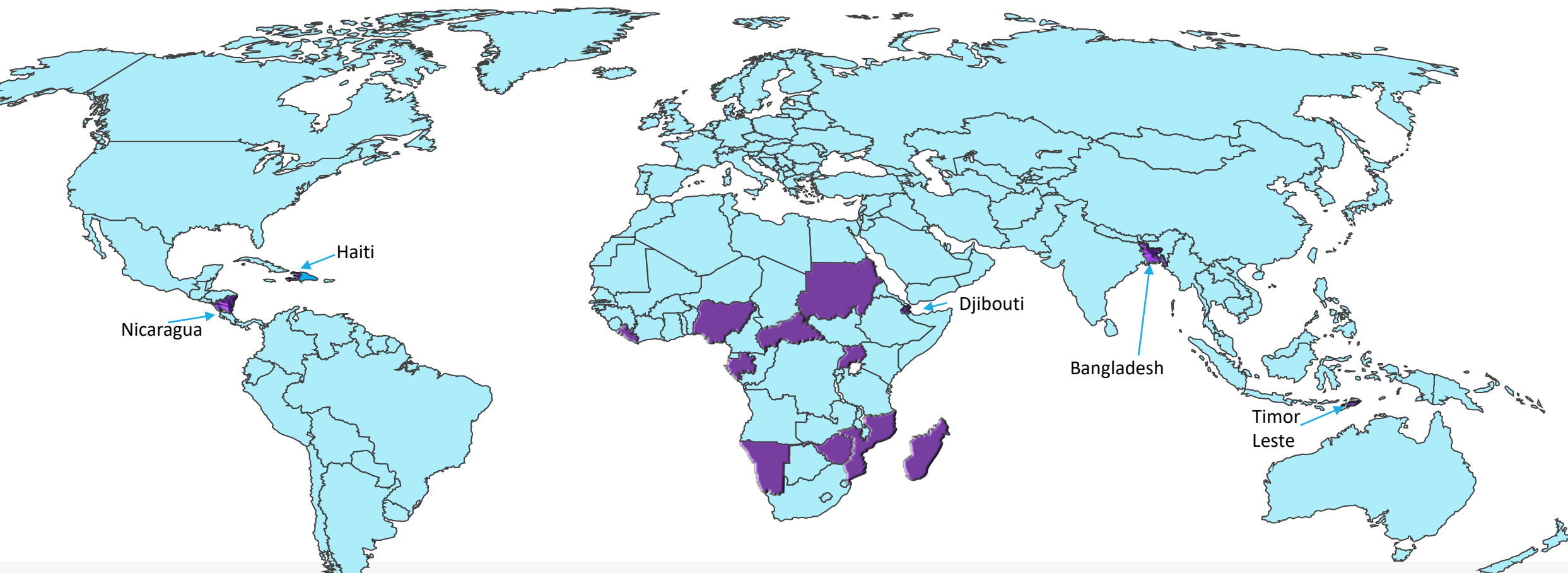




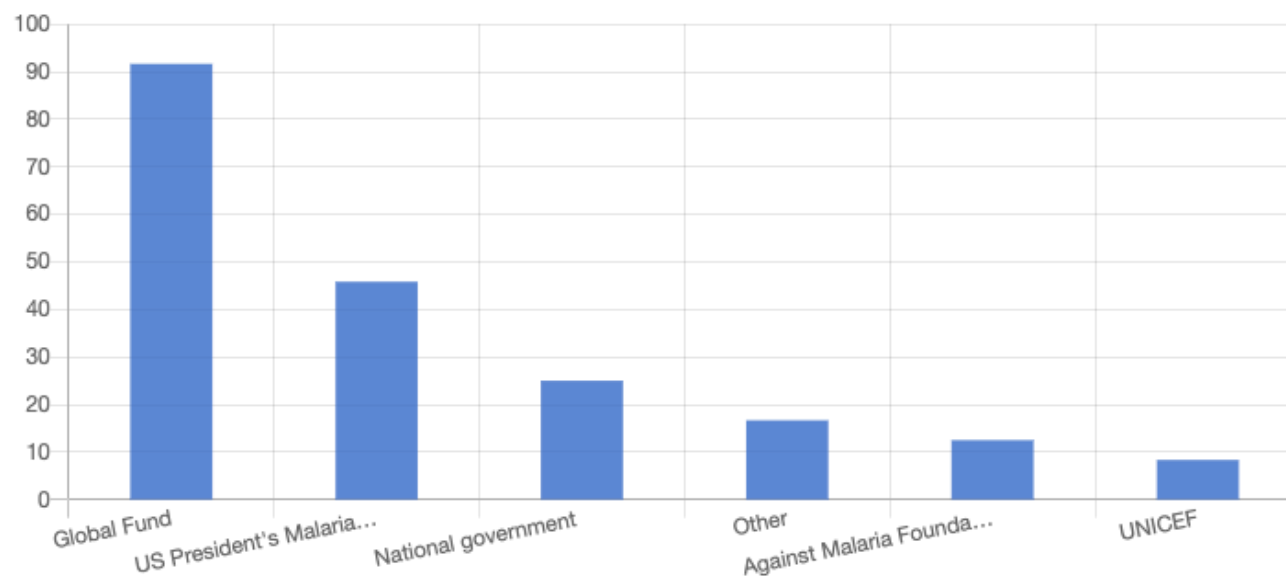


# AMP Online Questionnaire Countries

- In 2022, AMP requested NMPs to respond to an online questionnaire requesting country input to Waste Management and ITN policies and procedures
- 23 responses received from 15 countries (in purple below)

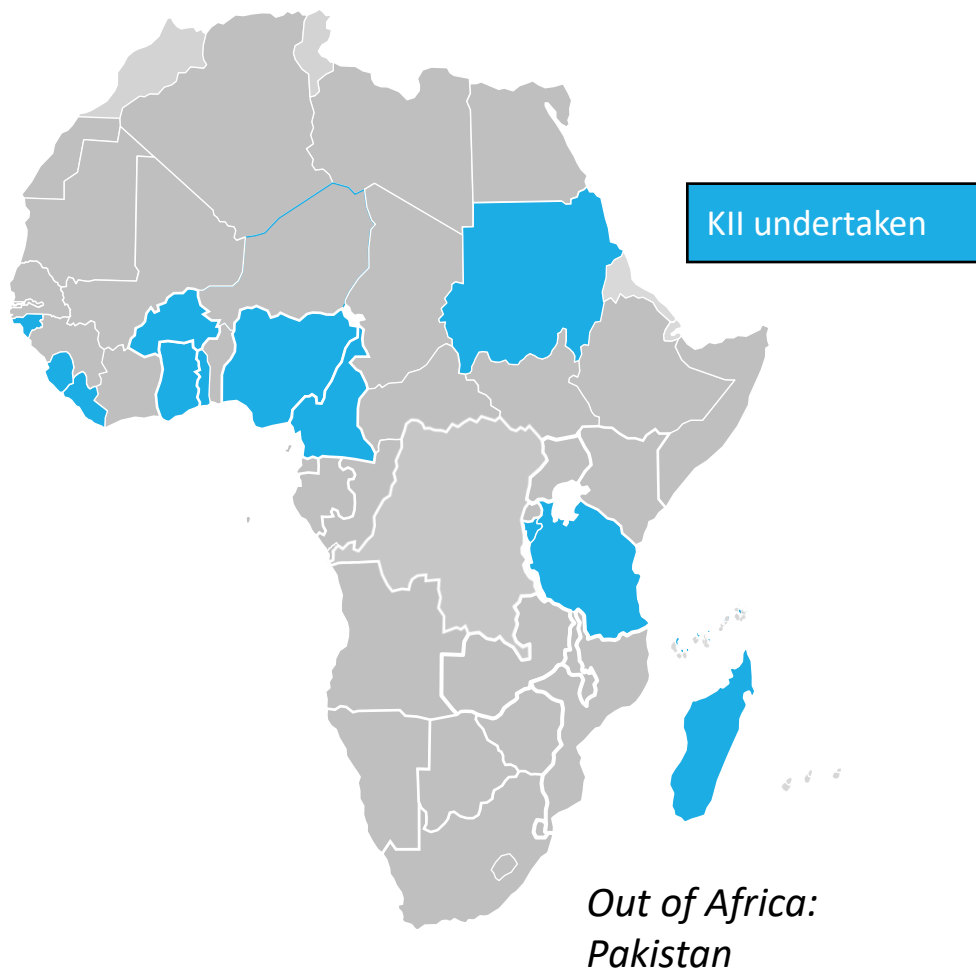


# QQ Repliers & ITN Donors



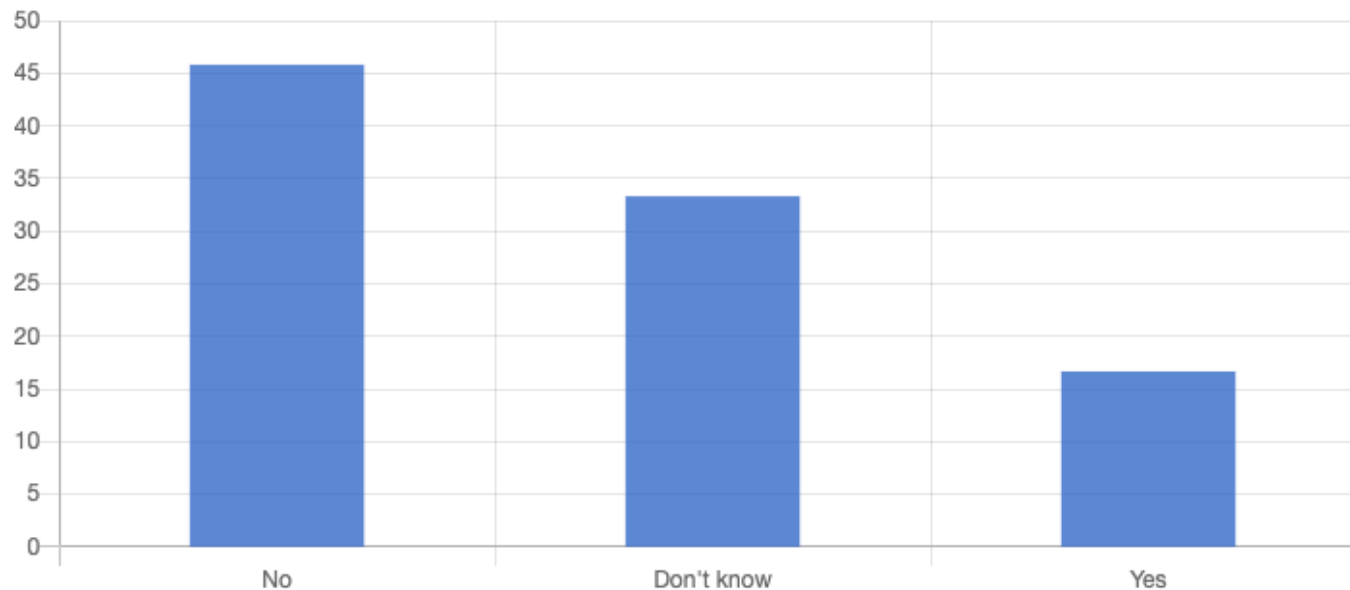
Other is generally Philanthropic such as Givewell (AMF), Fondation Sylvia Bongo Ondimba (FSBO); BICIG; CNAMGS

# AMP Key Informant Interview Countries & Topics



# Plastic Bans

Does your country have regulations or bans in place for the importation of plastic materials?



***AMP 2020 review showed 29 countries in SSA have some ban on plastic impacting ITN procurement/supply.***

- 3 respondents noted that bans affect the specifications for ITNs that are ordered and 1 noted that buying without bags is the outcome
- 2 responded that bans affects their orders for routine distribution mandating ITNs without bags
- 3 responded that bans **DO NOT** affect their orders for continuous distribution while 1 noted it mandates ordering ITNs without bags



# Plastic Policy Examples



Burundi has no specific policy on plastic goods, particularly the ITNs. Nevertheless, in a bold move towards environmental sustainability, **the government of Burundi has made it illegal to produce, import, or sell plastic bags and other plastic packaging.**



"Plastic is really banned in Rwanda". Rwanda's policies on ITNs and plastic waste are exemplary and have garnered international attention. **The government has implemented a nationwide ban on single-use plastic bags, greatly reducing litter and improving the environment.**



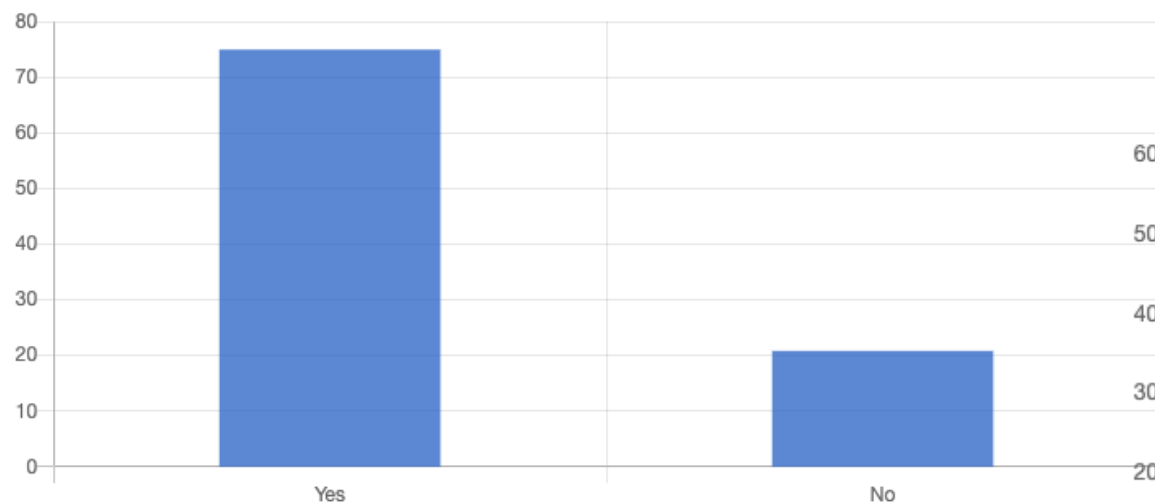
Cameroon has recognized the increasing ITN and other plastic-related waste problems. **The country has established a national plastic waste management plan on reducing plastic usage, promoting recycling, and enforcing penalties for littering.** Additionally, Cameroon has **banned the production and importation of non-biodegradable plastics** and has encouraged the use of alternatives such as biodegradable bags.



The Guinea-Bissau NMP policy is designed to **prevent the circulation of insecticide-laden bags** that pose a toxic threat to the population. To achieve this, **bags are held at distribution sites from mosquito nets that are individually packaged.**

# Awareness & Use of WHO WM policies

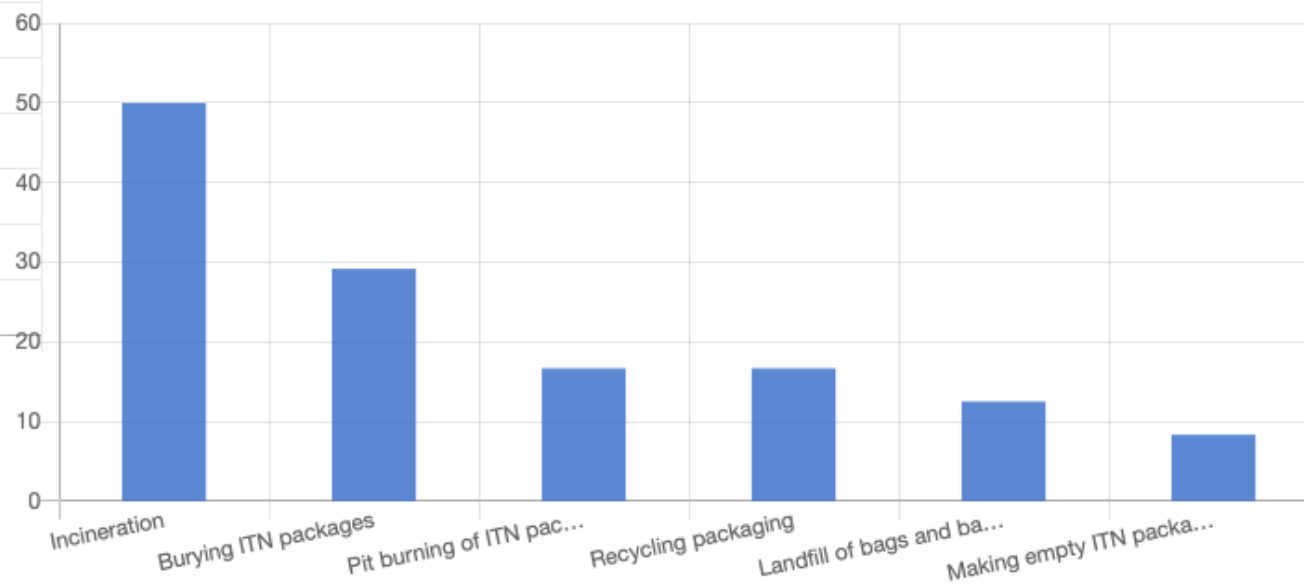
Are you aware of WHO policies on ITN waste management?



*Yes, we have recommendations from the WHO, we have always followed this since we did distribution ...we take the updates that we have on the WHO from groups like the AMP or from WHO representatives directly here ...”.*

*“No, we are not aware of any of those policies - we are trying to request for those policies unsuccessfully”.*

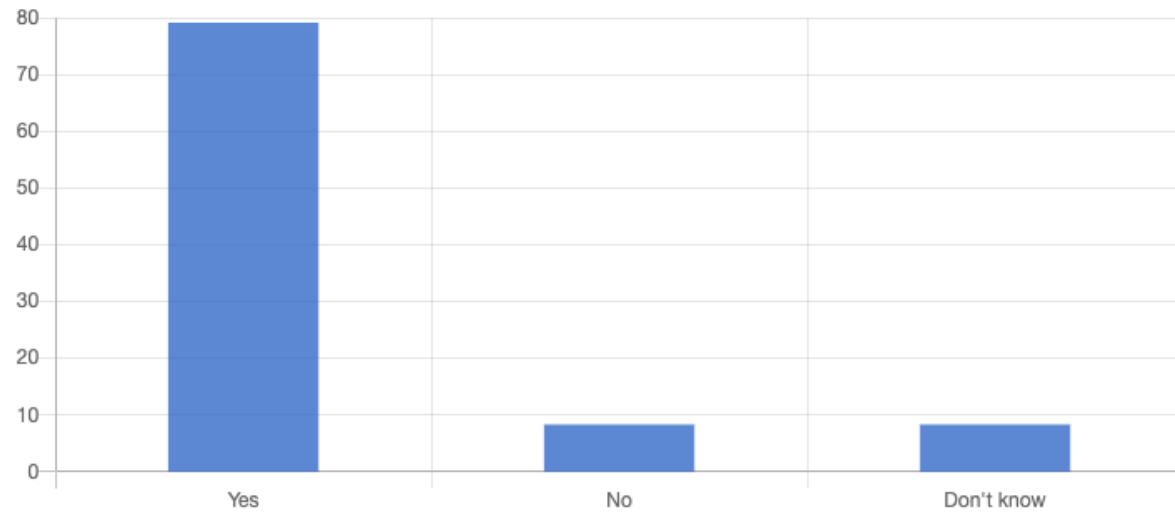
Which WHO waste management recommendations for ITN packaging are being implemented in your country?





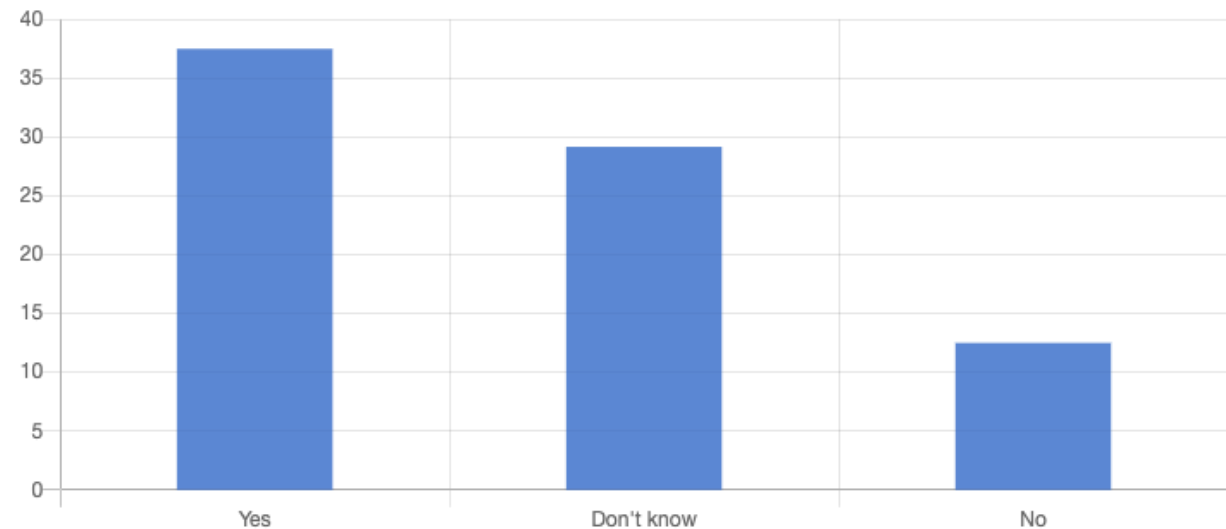
# Incineration

Are incinerators available in your country?



Of the 19 replying to the location, most noted that incinerators are used for burning medical and pharmaceutical waste, including expired and obsolete drugs, equipment, and in 1 case - insecticide solid waste.

Are any incineration facilities in country capable of reaching the temperature of 850-1200°C?



5 respondents noted that those high-temp incinerators are at regional level

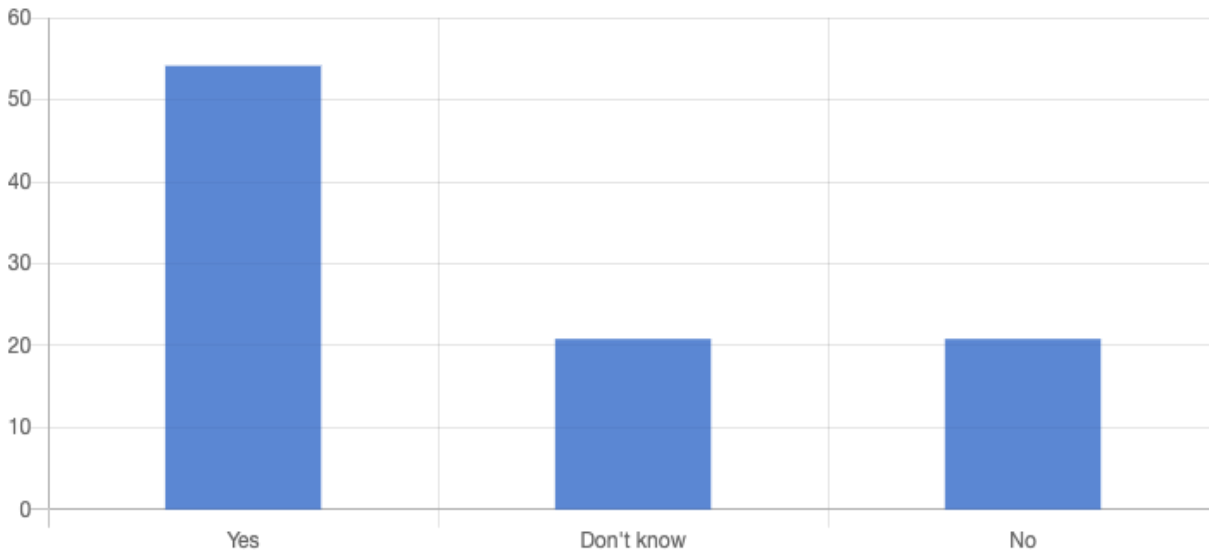
3 noted national level

2 noted district level

***“Incinerators are only found in hospitals, and they are only there for burning of wastes from hospitals not otherwise. Plastic wastes are collected by individuals for personal purposes and ... so collected for recycling purposes”.***

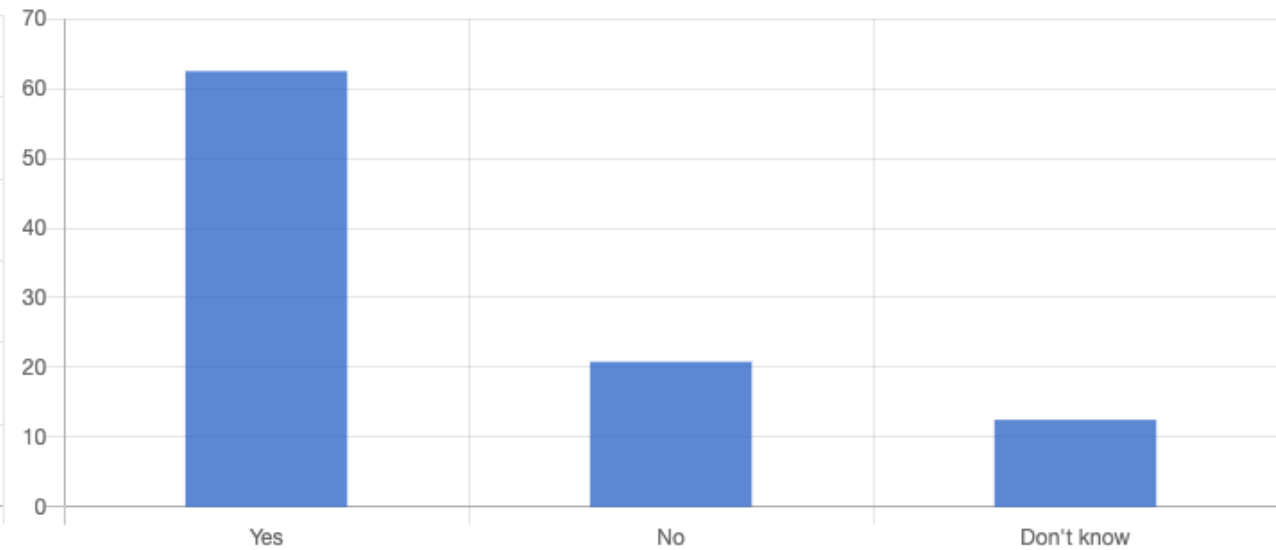
# Plastic Recycling

Are plastic recycling facilities available in your country?



54% of 13 respondents noted that these facilities are private

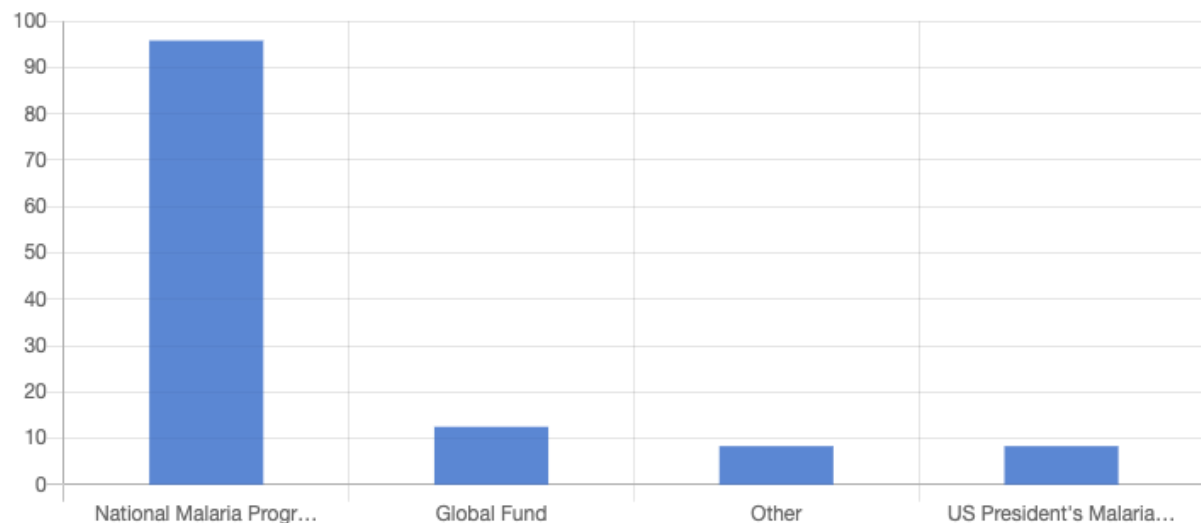
Do you think recycling is an option to manage ITN packaging material (and expired nets as applicable) in the country?





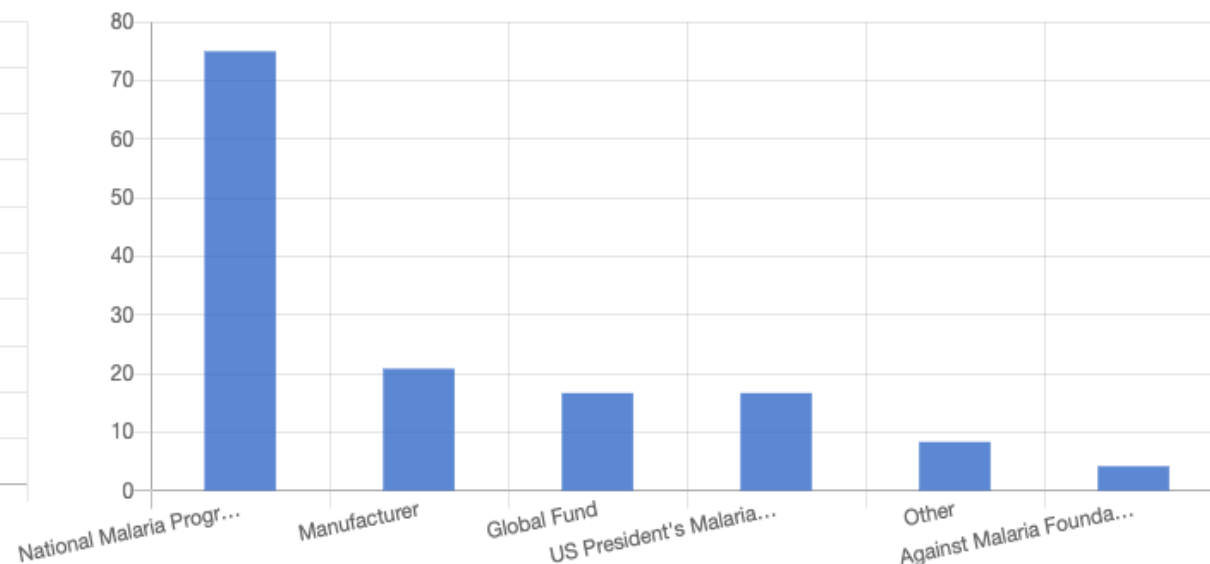
# Specifications

Who sets the specifications for ITNs to be distributed in your country?



*"This is done by the National Government guided by the Vector Control Technical Working Group. Guidance is also tapped from the WHO PQ list of products from where the selection is picked. Net durability and integrity studies also contribute to the priority product selection. The Global Fund also helps in guiding on options."*

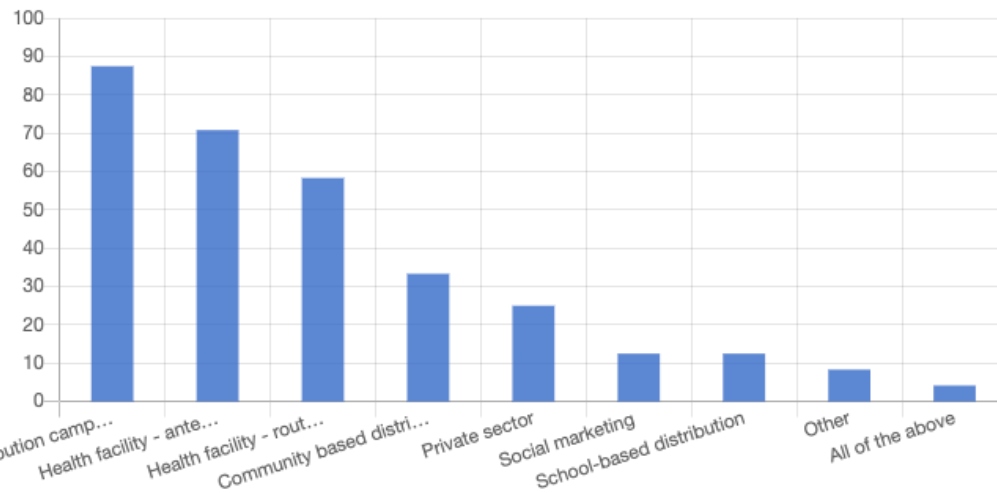
Who sets the packaging specifications for ITNs to be distributed in your country?



*"Sometimes the FM/GF delivers ITNs without packaging (bulk packaging) and which are grouped in bundles of 50 pieces with a single package and others with individual packaging. Frankly, I do not know who fixes this."*

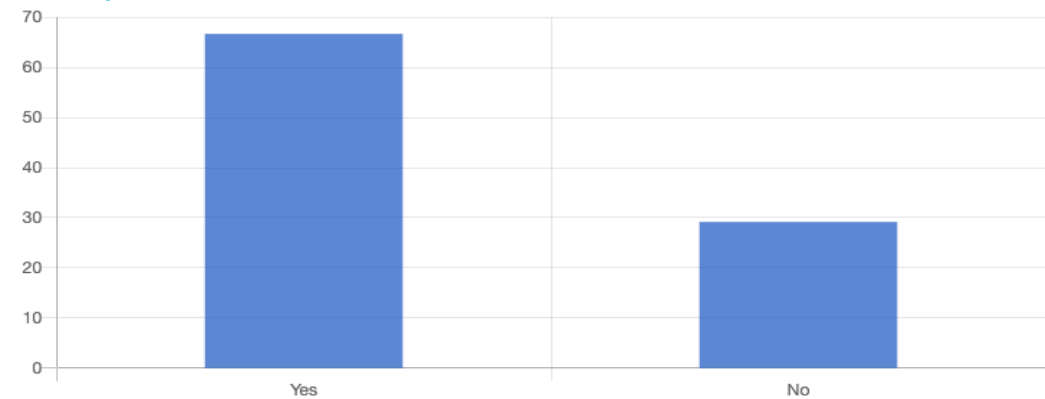
# Distribution Channels & Packaging

What channels are ITNs distributed through in your country (select all that apply)?

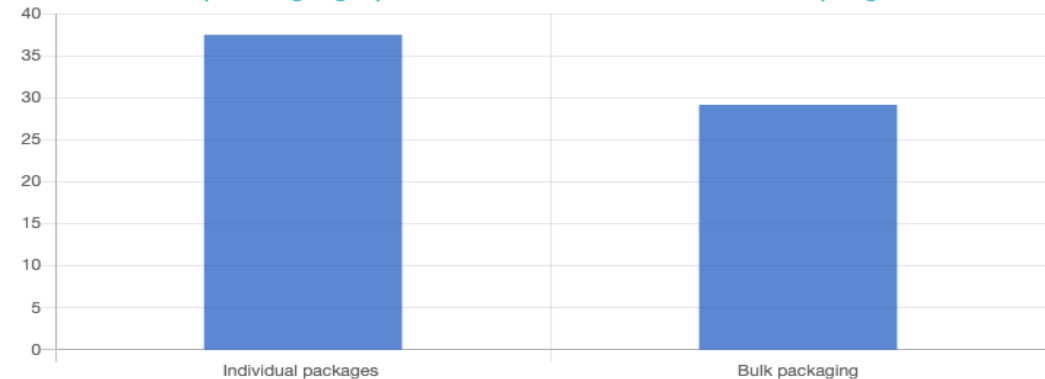


Other: Response to humanitarian emergencies; IDPs, refugee camps and during malaria outbreaks

Are ITNs with individual packages procured for distribution through any channel?



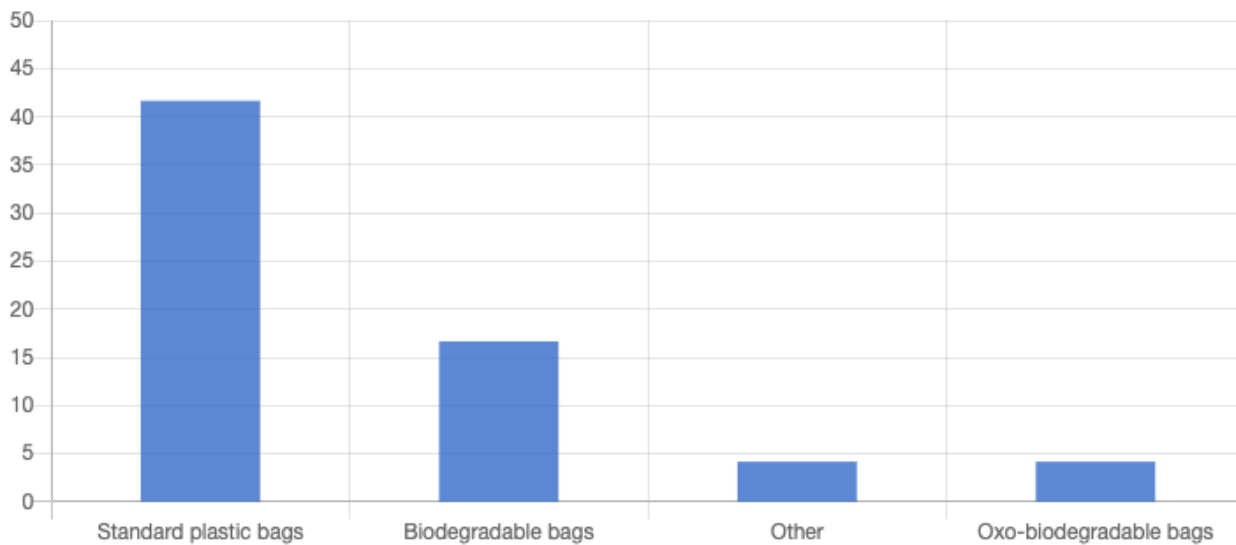
What are packaging specifications for mass ITN campaign distribution?





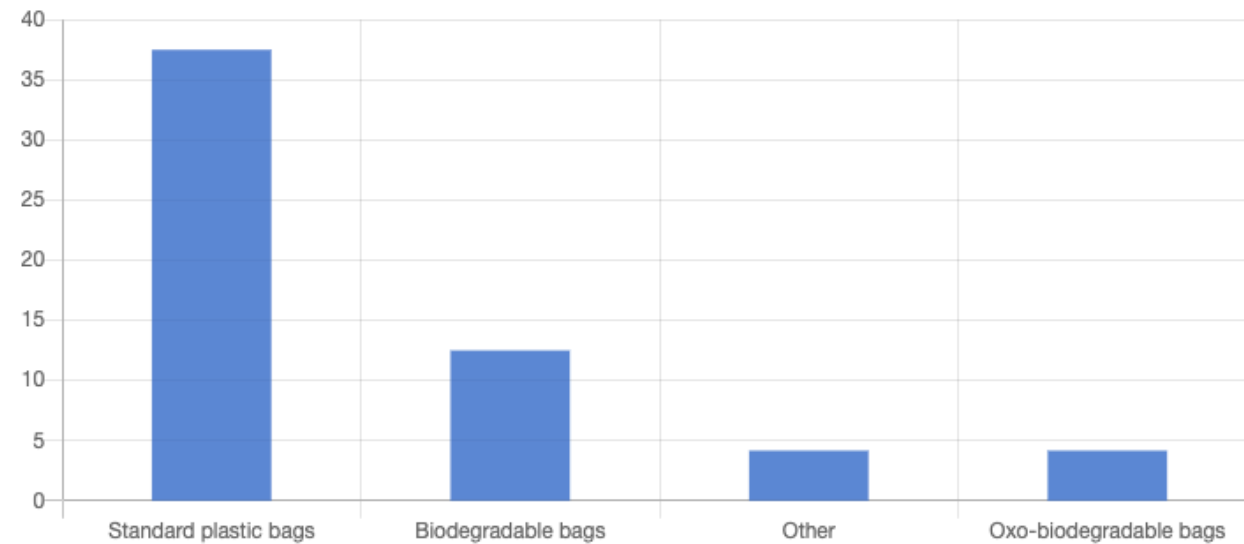
# Packaging (2)

What material (if any) is used to package individual ITNs for routine (health facility) distribution?



50% of school-based distribution are in individual bags – a small percentage is delivered in bulk packaging

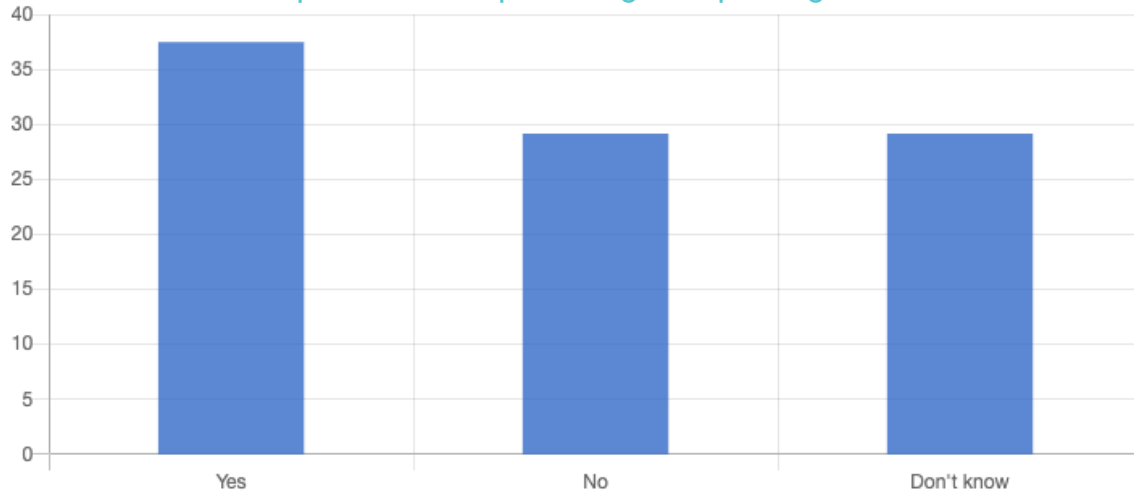
What material (if any) is used to package individual ITNs for school-based distribution?



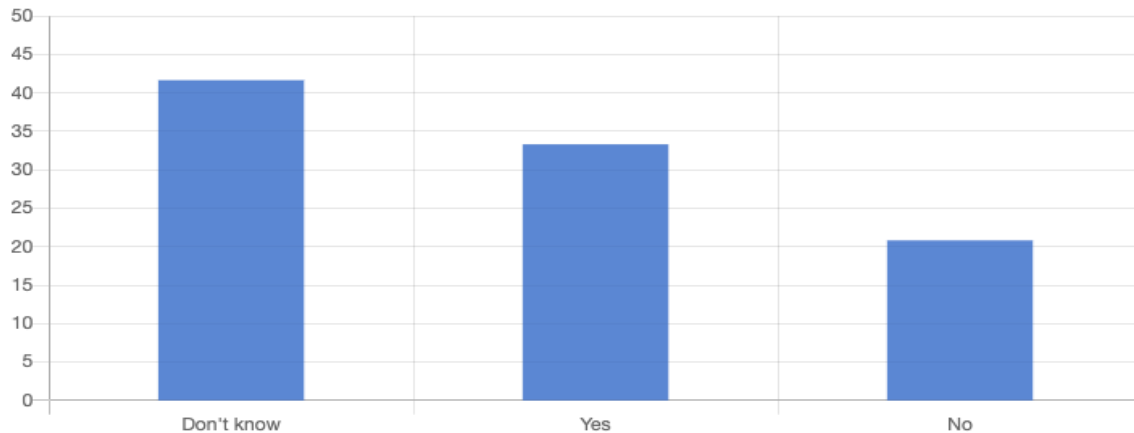
Other is generally bulk packaging or N/A.

# Packaging Supply & Cost Implications

Are there cost implications for procuring bulk packaged nets?



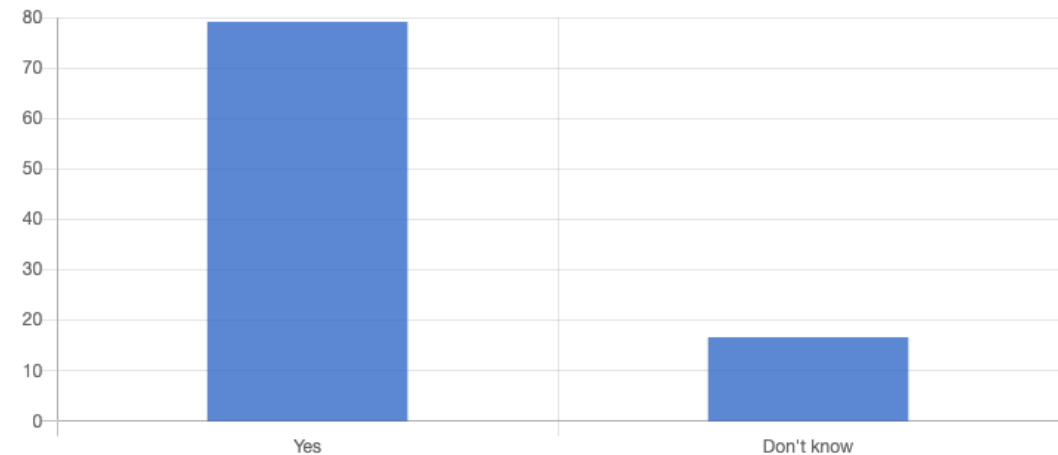
Are there cost implications for procuring individually packaged nets?



Note:

- The majority of the 9 replied stated that bulk packaging typically reduces cost while 1 noted that it increases inventory holding costs

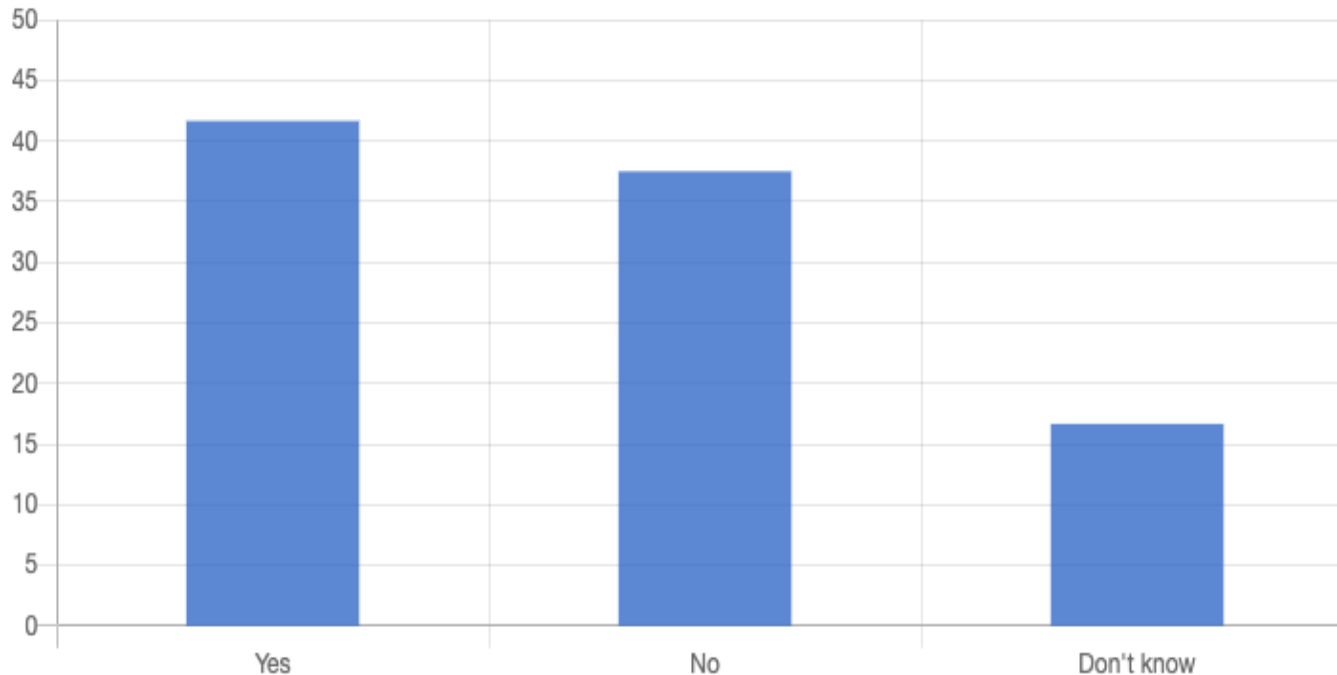
Are ITN packaging specifications met by suppliers?





# Budgeting for Waste Management

Are waste management plans and an associated budget developed for ITN mass campaign distribution?



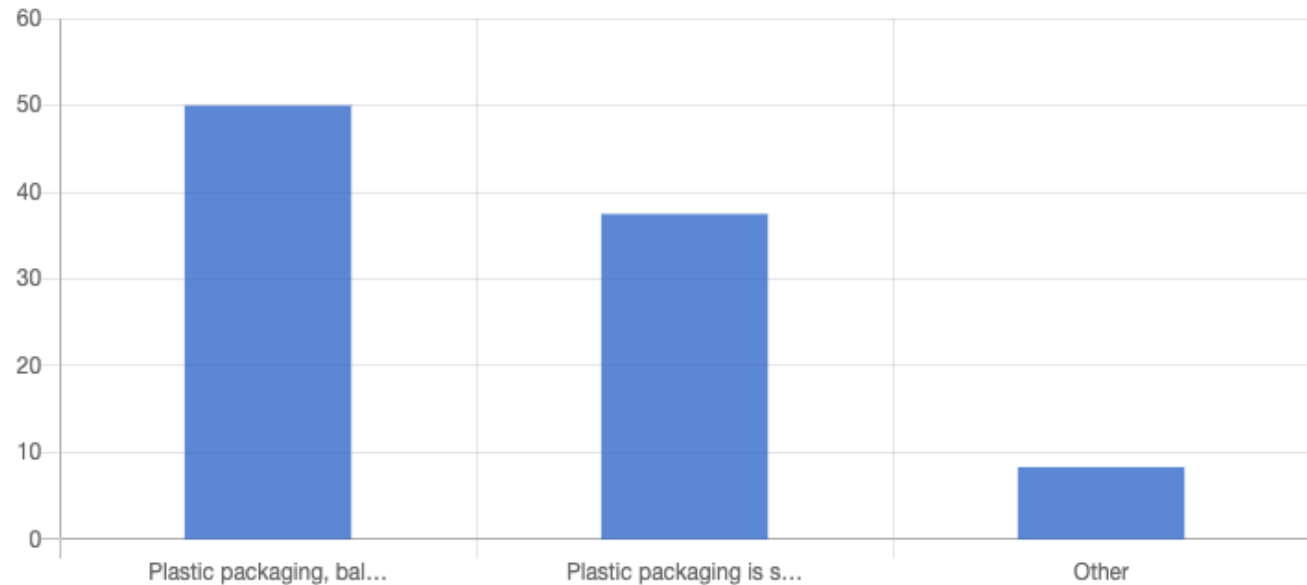
## YES

- Collection of waste at the distribution point/hub, transportation to health facility or point of incineration, mapping of incinerator locations across the Ward/LGA
- Cost of movement of the packages to their final disposal sites
- Waste is reversed back to the state level and the waste disposal is handled by the stat
- A small budget of 12 dollars for each of the 543 Admin Units to dispose of the outer packaging.
- Transportation of all the waste managed by the packaging; 2. ensure the transport to the incineration site of the office of the road of Djibouti. 3. To provide the expenses of loading and unloading for the workmen.

## NO

- The country has no capacity for the centralized collection and management of waste (no capacity to collect all waste in the community); no temporary storage facilities to store waste before finally disposed of, and no appropriate disposal facilities with capacities to handle the large volumes of waste generated annually from the ITN distributions
- There is no funding.

- Plastic packaging, bale and other waste is retained at the distribution point (or storage location for door-to-door distribution) for later management (50%)
- Plastic packaging is sent to households with net recipients and bale and other waste is retained at the distribution point (or storage location for door-to-door distribution) for later management (37.5%)



If waste (packaging and/or bale and other waste) is retained, how is it managed at the end of the distribution?

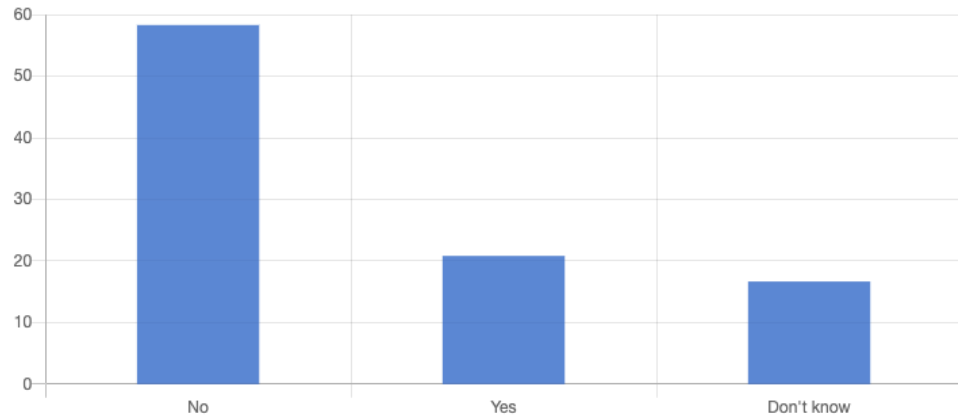
- Packaged and transported to upper level (e.g. district, region or national)
- Disposed at distribution point/lowest storage location/health facilities
- Left at distribution point/lowest storage location/health facilities pending decisions from national malaria programme
- Other: transported to administrative units and burned or other

# How is ITN waste managed at the point of distribution during ITN campaigns?



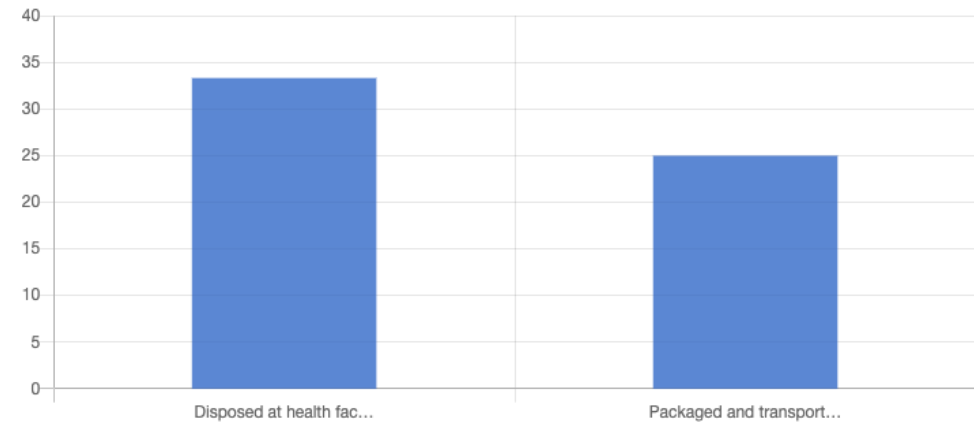
# Planning & Budgeting

Are waste management plans and an associated budget developed for routine ITN distribution through health facilities?



- Collection of waste at the health facilities and disposing along with other medical waste in the incinerator
- The waste is either dealt with at the facility level or sent back to an upper level
- Destroy all packaging through incineration
- Just distribute to target group
- Disposed by the district chairman

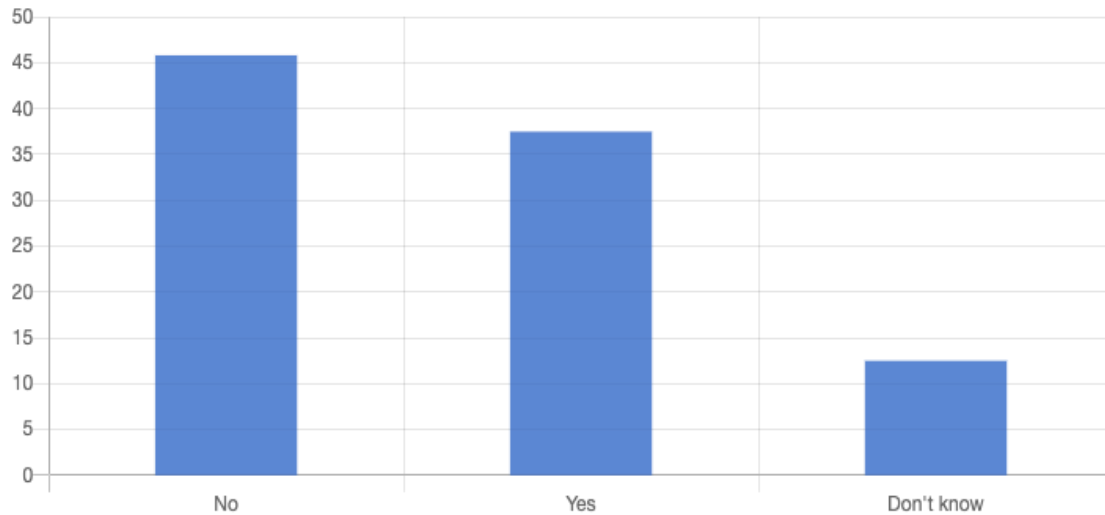
If waste (packaging and/or bale and other waste) is retained at the health facility, how is it managed?



***“Yes, there is a plan to manage waste and also there is a budget, although it is not enough ... but it made it possible to destroy most of the waste from the distribution campaign.”***

# Household Packaging Management

Are ITNs with individual packages distributed to recipients for management at household level through any channels?



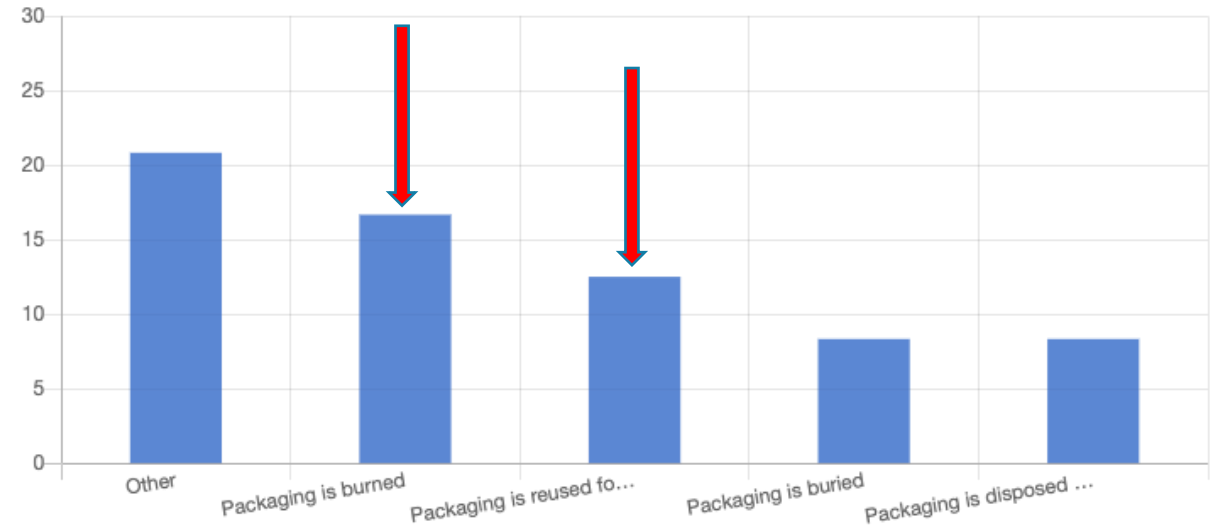
Are instructions provided to household recipients of packaged nets about how to manage the plastic waste at home?

Of the 9 replies:

**29.17% said NO**

8.3% said YES

How is ITN packaging material managed at household level?

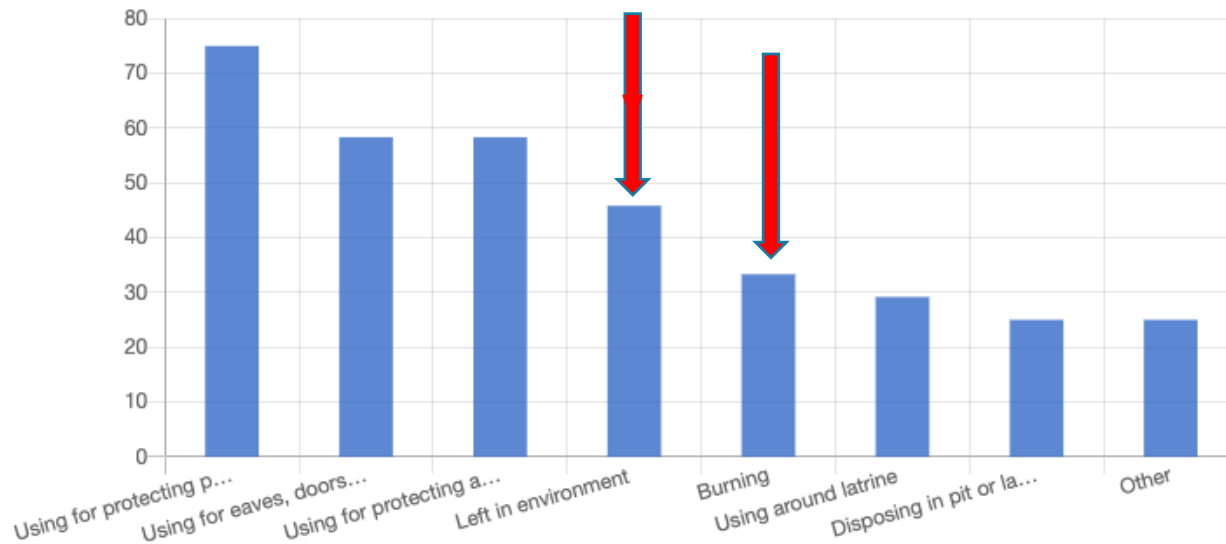


**Other: left on ground and/or disposed as household waste**

**20.83**

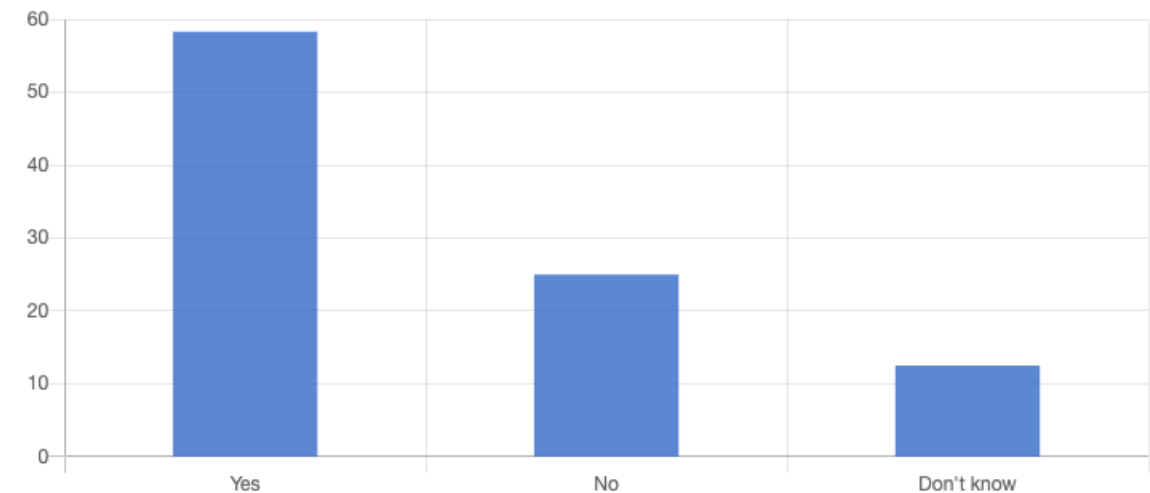
# End-of-Life ITNs

What are households doing with unserviceable or end-of-life nets that they are no longer using to sleep under?



Using for protecting plants	75
Using for eaves, doors and/or window screens	58.33
Using for protecting animals	58.33
Left in environment	45.83
Burning	33.33

Do you think that collection of unserviceable or end-of-life nets from households is possible?



**Over 50% agree** that collection of unserviceable or end-of-life nets from households is important

Most countries **DO NOT** have EOL policies in place or collect EOL ITNs.

*“..it’s not very developed but there are associations which are now starting to process plastic waste by manufacturing things like tiles”.*



# KII Waste Management Recommendations

Country	ITN packaging options	ITN waste management	Policies and practices
<b>Sierra Leone</b>	Having naked nets	Having good plan for the waste management campaign	**
<b>Ghana</b>	Adopt paper packaging	Having a large-scale collection and incineration of waste	Promote recycling culture
<b>Burkina Faso</b>	Have biodegradable packaging	**	Need for general policy on ITN and related products
<b>Liberia</b>	Procuring naked nets	Conducting logistic training in waste management and monitoring	**
<b>Madagascar</b>	Current practice is good	Establish recovery system	**
<b>Cameroon</b>	Have biodegradable packaging	**	**
<b>Togo</b>	Having naked nets in the shops to really minimize the waste management cost	Eliminate a large aviation of waste	Having mosquito nets in bulk of 50 PCs
<b>Pakistan</b>	Avoid individual packing	Reduce the burden of the waste to save the costs	There should be a broader policy and advocacy campaign
<b>Tanzania-Mainland</b>	Have biodegradable packaging.	Having a well-coordinated system of collecting the torn nets from the community	Enforce policy implementation on social behavior change
<b>Tanzania-Zanzibar</b>	Having naked nets	**	Having mosquito nets
<b>Burundi</b>	Having naked nets	Forming specific teams for waste recovery	Limit the importation of individual mosquito net bags
<b>Rwanda</b>	Biodegradable packaging (as naked nets)	Recycling/Re-use	Strengthen education on behavioral change communication
<b>Nigeria</b>	Having naked nets in bales	Adopt the use of incinerators	Repairing the nets if they are torn up
<b>Guinea Bissau</b>	Having naked nets (more than 50 nets per bale).	Proper planning for waste management	Need for one document on ITN and related waste management
<b>Sudan</b>	Not having packaging at all	Do waste management at local administrative level	Recycling policy



## Menti Time!

*Your engagement is essential to operational guidance development!*

*Please log in to [menti.com](https://menti.com) and use this code:*

**8436 1851**

## *Contribute to the Online Questionnaire*



[Collection of information related to waste management and insecticide-treated net policies and procedures](#)



<https://ee.humanitarianresponse.info/x/SPE5IG5O>



Thank you!    Merci!    Gracias!  
Asante sana!

**amp** | The Alliance for  
Malaria Prevention

**EVIDENCE BASED APPROACHES FOR THE MANAGEMENT OF END OF LIFE  
INSECTICIDE TREATED NETS**

Project Update Nigeria

# Findings of the scoping study

## 1 Collection: preliminary findings

### Executive summary



#### ■ ITNs are found in almost all households in sizable numbers

- ✓ Each household has on average 1-2 nets, depending on household size
- ✓ Most (76%) of the ITNs were 3 years and above in age (last mass campaign was in 2019)
- ✓ 60% of households had end-of-life ITNs that are no longer used for malaria prevention

#### ■ The general perception among households is that end-of-life ITNs have no value and are not useful

- ✓ Overall, 55% of households indicated they will not use what they perceive to be old ineffective ITNs for malaria prevention, but most keep end-of-life ITNs within the household
- ✓ 97% of Households willing to give up their end-of-life ITNs
- ✓ **54% of households are willing to give up their end-of-life ITNs if it is replaced with a new ITN**



# Findings of the scoping study

## 1 Collection: preliminary findings

### Executive summary



#### ■ Lack of environmental awareness

- ✓ Households most likely burn their ITNs when the end of life is reached or just leave them unused (either stored or kept along with other household materials)
- ✓ 71.4% of households were not aware of any negative environmental consequences of end-of-life ITNs. As most ITNs are repurposed

#### ■ Likelihood to collect the nets and potential quantities

- ✓ Based on the sampled LGAs surveyed, it would be possible to retrieve/collect end-of-life ITNs from 60% of household (about 6 in every 10 households). At least 50% of the last campaign ITNs are available for retrieval.
- ✓ Potential operational and logistics challenges include
  - ✓ access to households (hard to reach and geographic barriers)
  - ✓ funding for the collection
  - ✓ warehousing and transportation to the destination for incineration or recycling

# Steps for proof of concept

- Scoping study conducted in Cross River state to understand perceptions and attitudes of households about EOLINs.
- Study provided assurance about the recoverability of EOLIN
- Dissemination of findings to GFATM/USAID-PMI/NMEP
- Formal inauguration of EOLIN task team to develop a protocol for the proof of concept
- Development of the protocol for proof of concept
- The Cross River ITN mass campaign 2023 (Partnerships)
- Entry meetings and state engagement for the PoC
- Activities across thematic areas (SBC/Implementation & M&E/Logistics)