



# Waste Management & End of Life Nets- Successes and Challenges

Ghana & Sierra Leone SBD

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*Evolving Vector Control to Fight Malaria*

# Background

- Ghana has implemented school-based distribution (SBD) of ITNs since 2012 and has distributed over ten million ITNs through this channel.
- Sierra Leone piloted SBD in the Kono district in April 2023.
- Both countries were supported by PMI Evolve and had ITN waste management as part of the distribution plan.



# ITN Packaging

Both countries distributed individually packed ITNs involving bailing and individual bags

- Bailing: packaging including outer wrapping, straps and bands
- Individual bag: Covering that encase an ITN
- ITN packaging: Either individual bag, bailing material or both.





Question: How are the ITN packaging disposed of?.





# ITN Waste Disposal Guidance



## Recommendations on the Sound Management of Packaging for Long Lasting Insecticidal Nets (LLINs)

November 2011

### Background

More than 88 million long lasting insecticidal nets (LLINs) were delivered in 2009, over 145 million in 2010 and more than 45 million in the first two quarters of 2011.<sup>1</sup> In all, over 339 million LLINs have been distributed to sub Saharan Africa between January 2008 and July 2011. It is expected that similar volumes of nets and packaging will be distributed in the forthcoming years. Millions of LLINs are also distributed in other WHO regions. All of these nets will need to be replaced regularly.

Each single net typically comes in an individual bag which is then wrapped together with other bags in bales. Although each package weighs just a few grams, the aggregate result is several tones of packaging for every million nets distributed. There is therefore a growing awareness of potential health and environmental impacts that might result from exposures to millions of plastic bags that have been in contact with treated netting and may have absorbed pyrethroids, the class of insecticides present in LLINs.

This document was developed by the Global Malaria Programme (GMP) as a response to enquiries from WHO Member States and partners engaged in LLIN distributions. It is based on consultations with various partners, individuals and institutions with relevant expertise in this subject. Information on the fate of LLIN packaging is still insufficient and therefore this document only provides recommendations pending further research and evidence. This guidance addresses the specific question of what should be done with the LLIN waste packaging left from LLIN distribution.

These recommendations are drawn from two major documents: the *FAO/WHO Guidelines on Management Options for Empty Pesticide Containers*<sup>2</sup> and the *Basel Convention Technical Guidelines for the Identification and Environmentally Sound Management of Plastic Wastes and for their Disposal*.<sup>3</sup>

However, WHO recognizes that the options available in the field will sometimes make it not feasible to conform strictly to the practices recommended in the above mentioned guidelines. It is for this

<sup>1</sup> USAID, Net Mapping Project.

<sup>2</sup> *FAO/WHO Guidelines on Management Options for Empty Pesticide Containers*:

[http://www.who.int/whopes/recommendations/Management\\_options\\_empty\\_pesticide\\_containers.pdf](http://www.who.int/whopes/recommendations/Management_options_empty_pesticide_containers.pdf)

<sup>3</sup> *Basel Convention Technical Guidelines for the Identification and Environmentally Sound Management of*

*Plastic Wastes and for their Disposal*: [http://www.basel.int/meetings/cop/cop6/cop6\\_21e.pdf](http://www.basel.int/meetings/cop/cop6/cop6_21e.pdf)

See also *Basel Convention Technical Guidelines on Incineration on Land*:

<http://www.basel.int/meetings/sbc/workdoc/ald%20dacs/tech-d10.pdf>

- The 2011 WHO recommendation on the sound management of packaging for LLINs details Do's and Don'ts to ensure ITN packaging is disposed off in a sound environmentally safe manner.
- PMI Evolve TA on the subject is anchored on the WHO recommendation, best practices developed across vector control activities (ITN, IRS, LSM) and country level guidance.

# Recommendations

## **Do's**

1. Bury ITN packaging 100m or more away from water sources and residences.
2. Incinerate under high temperatures (850-1100 degrees C). Mostly available in district hospitals.

## **Don'ts**

1. Packaging should NOT be burned in open air
2. Packaging including bailing straps should NOT be reused for any purpose
3. Do not dispose ITN packaging as part of ordinary waste or in improper sanitary landfills

# Successes and Challenges

## Successes

- Each school has just a few ITN bailing to manage
- Individual bags are managed at household level and never gets aggregated
- Guidance on re-purposing of old ITNs
- ITN packaging and end of life nets contain limited insecticide and are not overly hazardous
- Biodegradable packaging available

## Challenges

- Ensuring conformity
- Inadequate funding for SBC to promote sound ITN waste management
- Seemingly lack of appreciation of the environmental and health impact of ITN packaging
- Limited guidance on disposal of end-of-life ITNs
- Lack of incinerators in schools and community clinics.

# THANK YOU

