

PACKAGING MATTERS WEBINAR

Repurposing of Humanitarian Assistance Packaging and Plastic "Waste": What's the story?



Thursday 21st September
15:00–16:00 CET
09:00–10:00 EST

<https://tinyurl.com/JI-webinar5-reg>



Margit Bach, Product Innovation Centre,
UNICEF Supply Division



Erica Cirino, Communications
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Coalition



Namiko Motokawa, Programme
Policy Officer, World Food
Programme

JOINT INITIATIVE FOR
SUSTAINABLE HUMANITARIAN
ASSISTANCE PACKAGING
WASTE MANAGEMENT

Episode 5 of “Packaging Matters”

Thursday 21st September 2023


WHAT IS THE JOINT INITIATIVE?

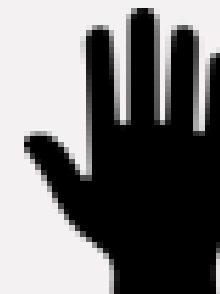
- Partner-driven, collaborative initiative, 25 humanitarian stakeholders
- Funded by USAID's Bureau for Humanitarian Assistance
- Aims to reduce the environmental footprint of humanitarian assistance, with a focus on packaging waste
- Holistic approach to waste management - upstream and downstream
- Supports information and knowledge-sharing across the humanitarian sector: webinar series part of this



GOLDEN RULES

- Don't hesitate to enable “captions” if English isn't your first language
- Please introduce yourself in the chat box
- Please mute your microphone unless you are speaking
- Please raise your hand or use the chat box for questions and comments
- The meeting will be recorded (please voice any objections to this)

 Turn on live captions



PROGRAM

15h- 15h15	Opening and Introduction	The Joint Initiative for Sustainable Humanitarian Assistance Packaging Waste Management
15h15-15-25	Upcycling – Transforming waste into resources	Namiko Motokawa (Head of Resilience, Cox’s Bazar, WFP)
15h25-15h35	“Project Play”: repurposing RUTF cardboard boxes and other packaging as fun and appropriate toys	Margit Bach (Nutrition Innovation Specialist, UNICEF)
15h35-15h45	Assessing benefits and risks of incorporating used “waste” plastic in construction materials	Erica Cirino (Communications Manager, Plastic Pollution Coalition)
15h45-16h00	Discussion, key messages and wrap-up	The Joint Initiative for Sustainable Humanitarian Assistance Packaging Waste Management

GUIDELINES FOR PACKAGING WASTE MANAGEMENT IN HUMANITARIAN OPERATIONS

July 2023



South Tangerang, Banten, Indonesia. Bird's Eye View of a Landfill. Photo credit: Tom Fisk.

New publication!

- Includes a decision tree to select appropriate packaging waste management methods in humanitarian operations.
- Based on the 5 Rs: refuse, reduce, reuse/repurpose, recycle, and responsible disposal.
- Includes guidance on packaging collection, sorting, storing, shredding, washing, recycling and disposal.
- Explains the impact of improper packaging waste reuse, repurposing and recycling on human /environmental health.

Conclusions & recommendations

- Reducing packaging **upstream** is key, because **downstream** waste management options have limitations (e.g. **recycling is challenging** and still creates emissions).
- Packaging can be reused or repurposed if **innovative designs** are used.
- However, improper reuse, repurposing and recycling of packaging can be harmful to human/environmental health, and **risk assessments should be conducted**.
- **Collaboration** between humanitarian organizations, donors, governments, private waste management facilities, local communities and suppliers is needed to implement **efficient waste management strategies**.

OPTIONS FOR HUMANITARIAN PACKAGING REUSE, REPURPOSING, AND RECYCLING

July 2023



Metal vegetable oil container repurposed as a basin in the Central African Republic. Photo credit: Magnus Lindsjö

New publication!

- Includes 18 initiatives
- 7 types of packaging explored:
 - Polypropylene (PP) woven bags
 - Jerry Cans
 - Pallets
 - PET bottles
 - Steel tin cans
 - Metallized laminated sachets
 - Cardboard boxes
- Includes a summary of each project, scale-up opportunities, challenges, environmental risks and contact



SAVING
LIVES
CHANGING
LIVES



Upcycling – Transforming waste into resources

21 September 2023

Rohingya refugee crisis

- Over **960,000 refugees** resides in Cox's Bazar refugee camp (UNHCR, August 2023)
- **325,000 children** receives nutrition and school feeding support (WFP, June 2023)



Collection of empty packets

- **Over 600,000 empty nutrition packets** collected from 45 centres across refugee camp
- Upcycling project was initiated in 2020 to ...
 - 1) Reduce waste disposal in camp
 - 2) Create employment and skills development opportunity for the refugees



Upcycling process

Collection & Sorting



Clean & Dry



Cut & Heat pressed



Production

Tailoring



Bamboo crafts



- **400 refugees** are engaged in the project

Collectors	100
Waste operator	100
Producers	200





Wayforward/Sustainability

Access to market

Employment & skills development opportunity for the refugees

Circular economy within the camp



SAVING
LIVES
CHANGING
LIVES

THANK YOU



Project Play

Joint Initiative Webinar:

Repurposing of Humanitarian Assistance
Packaging and Plastic

Margit Bach, Nutrition Innovation Specialist
UNICEF Supply Division

Project outline



- ✓ 'Project Play' was launched by UNICEF in 2021, with the purpose of providing **play stimulation** through **packaging**.
- ✓ **Psycho-social stimulation is recommended by WHO** to improve child development and treatment outcomes of e.g. in wasting programmes with 'Ready-to-Use Therapeutic Food' (RUTF) treatment.
- ✓ Use of an existing **RUTF supply chain for product delivery**:
 - Address a **current programme gap** of cognitive stimulation
 - **Repurpose cardboard** thereby addressing waste management
- ✓ The vision: **Toys for every child to play, develop and thrive**
 - Scale up plan to broaden concept to other supplies and formats



Principles of engagement with suppliers



- ✓ Co-creation process, adapt to existing packaging, make it **easy to 'opt in'**
- ✓ Create minimal disturbance to production lines and focus on respecting and **maintaining structural integrity of packaging**
- ✓ **Zero or minimal cost increases** to an already expensive product.
- ✓ Attempt to **address waste management and sustainability aspects** adhering to ISO 14001 (Environmental Responsibility) standards
- ✓ A thorough **risk and mitigation assessment** has been undertaken, and all supplier packaging should use:
 - Food grade glue, water based/food grade non-toxic ink, no bleach.
 - All toys should be big enough to **avoid any choking hazard** in small children
 - All toys to be pre-cut (perforated) to reduce any risks related to cutting



Considerations around designs









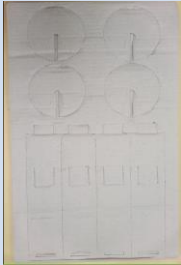







- ✓ Design catalogue of **66 designs** from 'Cardboard mache' to using 2-3-4 boxes for a robot
- ✓ For the RUTF box/health facility use case:
 - Providing **cognitive stimulation** for children 6-59 months
 - **Playability** for 1, 2, several children and also across age groups
 - **Inclusivity** (contrast colors, 3D/easy grip toys, auditive elements due to the nature of cardboard)
 - **Maximum number of toys** per box (6-8)
 - **Simplicity/ease of assembling** – no glue, thread, tape or scissors needed
 - **Toys small enough** to fit into flaps/insert of boxes – but at same time **use as much of cardboard as possible**

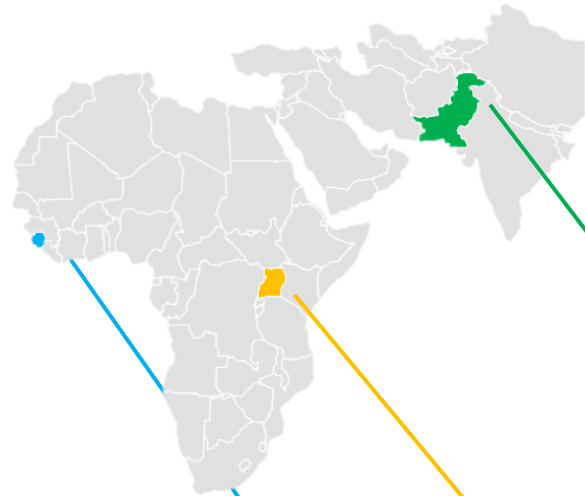


Models of integration



MODEL	TOY ELEMENT	% OF CARDBOARD REPURPOSED	SUPPLIER PACKAGING WITH TOY INTEGRATION
BOX	<ul style="list-style-type: none"> 1-2 toys (savanna scene, stacking tower and little truck) 	15% of packaging (approx.)	  
BOX FLAPS + INSERT	<ul style="list-style-type: none"> 4 triangular figures 1 play sheet with print (stabilizer insert) 	67% of box cardboard repurposed	   
INSERT + SEPARATORS	<ul style="list-style-type: none"> 4 disks/2 balls 4 triangular figures Separator inserts may be used for play stimulation 	<ul style="list-style-type: none"> 12.8% increase in weight not volume Or 24-36% of box packaging repurposed 	      

Project Play – ‘Proof of Concept’ pilots



Pilots outline

Pakistan

Project included in floods emergency response in Sindh province.

- Inclusion of toys in RUTF packaging (local supplier) as part of wasting treatment
- Inclusion of Project Play into existing ECD kits.

Uganda

Project implemented in drought-affected areas of Karamoja and Kamwenge and in Kampala general Referral Hospitals.

Inclusion of toys in RUTF packaging (regional supplier) as part of wasting treatment for children 6-59 months

Sierra Leone

Project implemented in food insecure areas. RUTF packaging inclusion (int. supplier) to wasting treatment for children 6-59 months clinics (in/out-patient)

Achievements

- 5,432 cartons** of ‘Project Play RUTF cartons’ delivered by local supplier for free under existing RUTF PO.
- Each box insert includes **6 toys** = **32,592 toys** for children to play with.
- Implementation is **ongoing** in Sindh through MoH and local partner
- Monitoring and learning** component implemented by external partner

- 2,900 cartons** of ‘Project Play RUTF cartons’ delivered by regional supplier for free to UNICEF CO
- Each box includes **8 toys** = **23,200 toys** for children to play with.
- 67%** of the cardboard, has a **second use** as play stimulation in addition to packaging.
- Implementation is **ongoing**
- Monitoring & learning** - University of Makerere/MoH

- Eat-play toys from international supplier **already included** in existing PO; 1-2 toys/box
- Implementation is **ongoing in 5 regions**
- Monitoring and learning** through external research body

Project Play: Documentation



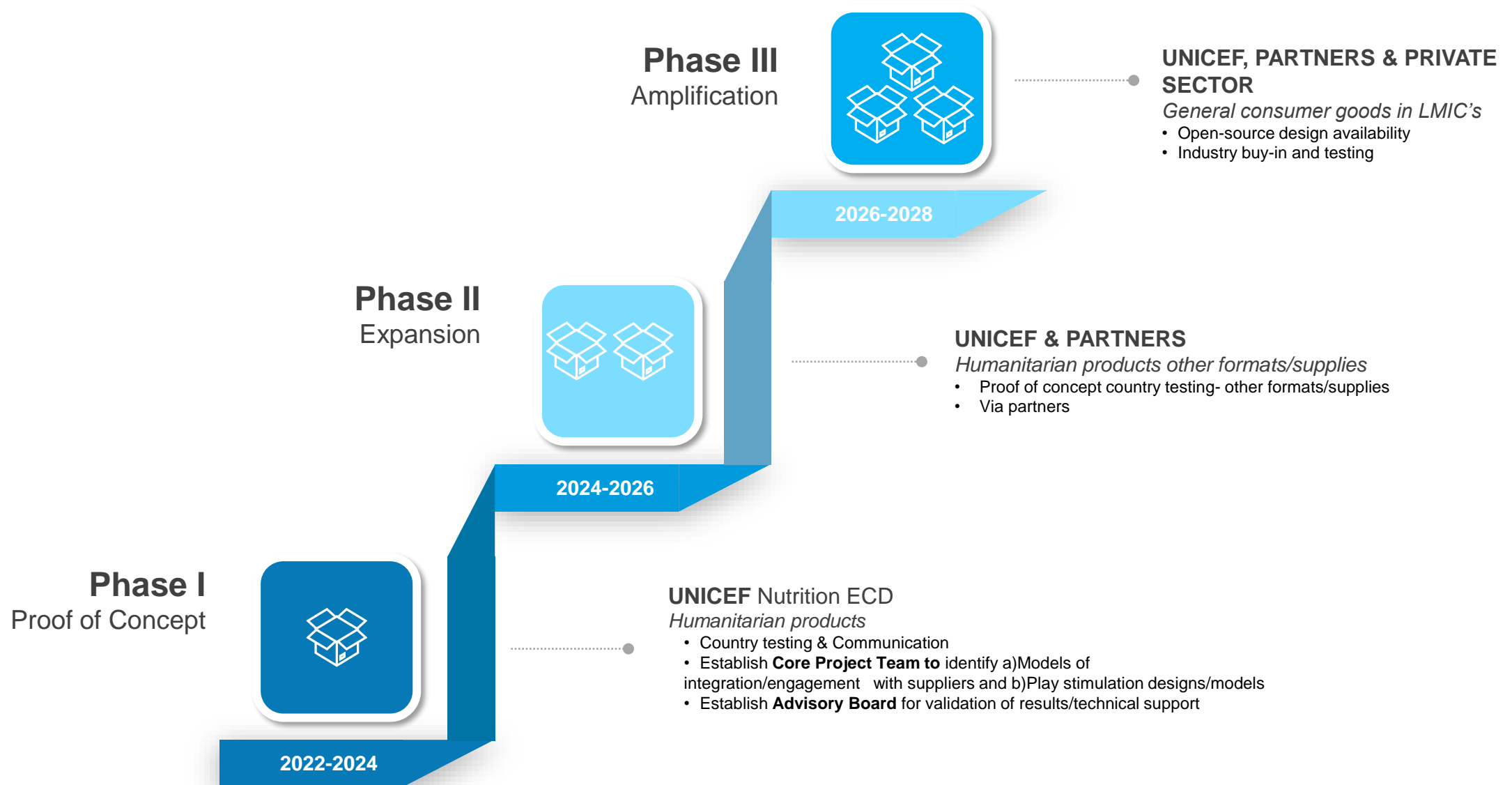
Next 6 months will focus on: **Initial learnings and evidence generated**

Collecting and documenting learnings on:

- **Supply chain** aspects
 - Supplier perspective (ease of adoption, process, customization, feasibility of scale up etc.)
 - CO perspective (process, arrival of supplies, condition etc.)
- **Delivery platform** and modalities
 - The health facility as a delivery platform
 - Parent engagement and awareness
- Product **acceptability** and **usability**
 - Playability and awareness creation
 - Inclusion
 - Durability and safety



Scale up - plan



‘My son liked it so much that (he) was folding and unfolding the animals constantly and his mind was completely engaged’.

- Sundai- mother of a 3-year-old boy from Umerkot, Pakistan.



Assessing benefits and risks of incorporating used “waste” plastic in construction materials



Single-use is the typical go-to in humanitarian situations...



Distributing humanitarian assistance after an earthquake in Nepal.
Photo by U.S. Indo-Pacific Command



Distributing humanitarian assistance from World Food Programme helicopter in Mozambique after cyclone.
Photo by U.S. Africa Command

...which creates a lot of “waste” that must be dealt with...



Plastic pollution at Lesbos, Greece, refugee camp. Photo by L-BBE



Tires: microplastics, benzene, heavy metals (lead), PAHs, other carcinogenic compounds

Ecobricks: microplastics, 13,000+ plastic chemicals, potential contaminants such as pathogens that cause cholera + other disease

Earth sheltered building out of tires, cob, compressed earth bricks, "ecobricks" and glass bottles at the Delft Early Childhood Development center in Cape Town, South Africa.

Photos by Peter McIntosh





Plastic filled “ecobricks” are covered in cob to build a wall and secure them for the long-term from degradation. Photo by Russs95 (Wikimedia Commons)

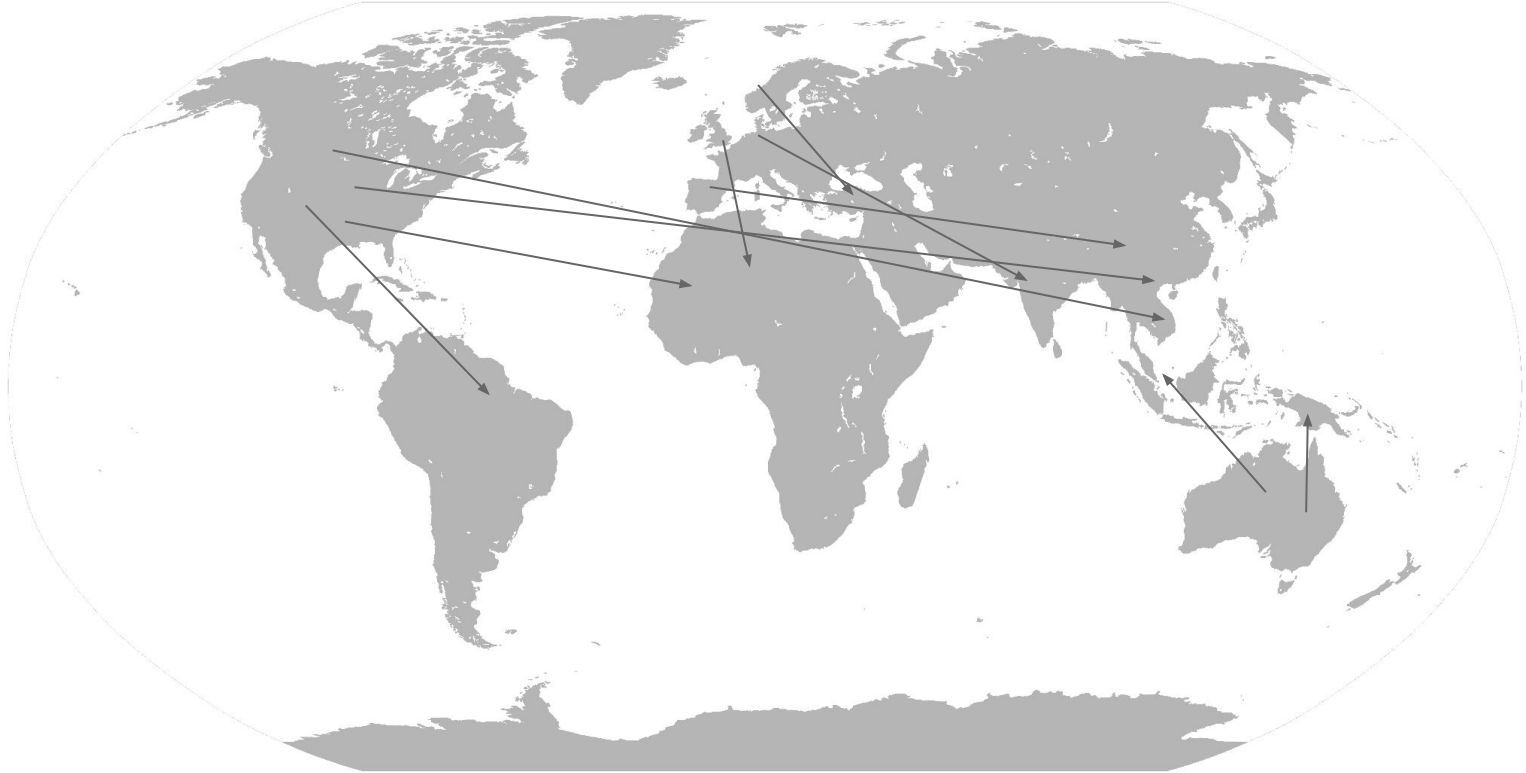


“Ecobrick.” Photo by Sangianense (Wikimedia Commons)

Where do
re-purposed
plastic materials +
products go at the
end of their
usefulness?

Marco Island, Myanmar

Who is inflicting these “waste” projects on whom?



Our research



MINI REVIEW article

Front. Built Environ., 05 July 2023

Sec. Sustainable Design and Construction

Volume 9 - 2023 | <https://doi.org/10.3389/fbuil.2023.1206474>

This article is part of the Research Topic
Circularity by Design: Opportunities for
Systemic Change in the Built Environment

[View all 4 Articles >](#)

Assessing benefits and risks of incorporating plastic waste in construction materials



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Highlights:

- 100 studies
- 19 categories of homogenous + mixed used plastics in construction materials
- **Secondary recycling (re-purposing or downcycling) is not circular**
- Assessed costs + benefits across:
 - Economic
 - Environment
 - Health
 - Social
 - Performance
- Many projects deployed across Global South
- **Negative/harmful health, environmental, and social costs often overlooked**



Review: Costs and Benefits of Plastic Waste in Construction Materials

KEY

Material

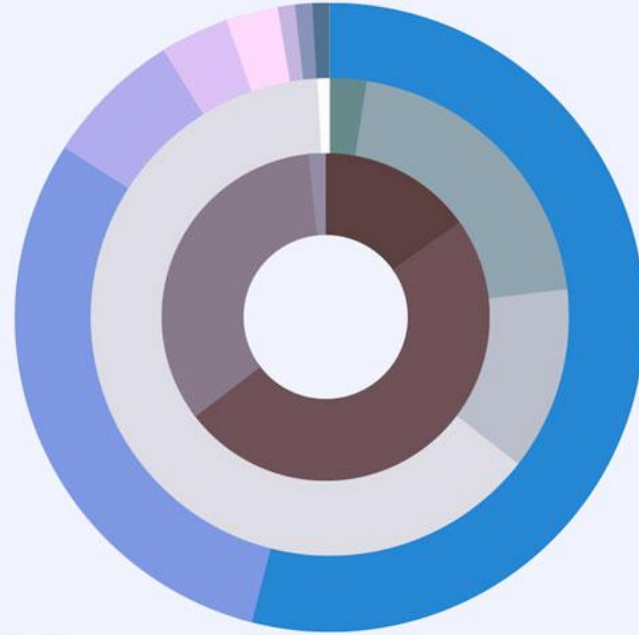
- COMPOSITES 54%
- ROADS 30.1%
- SYNTHETIC TURF 7.1%
- LUMBER 3.5%
- SOIL STABILIZERS 2.6%
- ADHESIVES 0.9%
- INSULATION 0.9%
- RAMMED EARTH 0.9%

Costs

- PERFORMANCE 59%
- ENVIRONMENTAL 22.4%
- HEALTH 15.7%
- ECONOMIC 2.2%
- SOCIAL 0.7%

Benefits

- ENVIRONMENTAL 47.1%
- PERFORMANCE 34.4%
- ECONOMIC 16.9%
- SOCIAL 1.6%
- HEALTH 0%



Prevention is always preferable

BETTER ALTERNATIVES NOW B.A.N. LIST 2.0

An analysis and call-to-action to phase out the most polluting plastic products used in the United States

The waste hierarchy



©European Commission

Avoid entrapment in toxic cycles



Marco Island,
Myanmar

Making humanitarian aid more sustainable



Humanitarian efforts should engage with local people + place, not work to inflict more waste colonialism on communities. Many “solutions” to humanitarian problems, like plastic water bottles, only really compound harms.

Best practices:

- Improve logistics, coordination, and preparedness for short- + long-terms
- Engage local communities and humanitarian organizations in giving aid
- Coupling reduction with any efforts to re-purpose (downcycle) is essential
- If repurposing materials in humanitarian settings, work to minimize health, social, environmental risks
- Consider not just “carbon footprint” but materials during and after their usefulness
- Reduce waste by engaging in reuse, refill, regenerative aid practices
 - Reusable wooden crates/pallets/containers over cardboard, plastic
 - Purification/storage of local water supplies when possible
 - Foods delivered in reusable containers/bags rather than plastic/paper

LEARN MORE AND GET INVOLVED

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