High Performance Tents

unicef
for every child
Supply Division



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Overview

The challenge

During emergencies UNICEF uses multipurpose tents for schools, health clinics, nutrition facilities, distribution points and child-friendly spaces. The old tents have served the organization well for many years, however, new emergency contexts demonstrated a need for improvement. Some challenges included difficulties in transportation and installation, collapsing due to strong winds and rain, and poor internal climate that doesn't suit extremely hot or cold environments.

The response

UNICEF looked to the market for a solution, but couldn't find it, so took it upon themselves to drive product development through an innovation process.

First, UNICEF communicated the needs to industry through consultations and the launch of a Target Product Profile, indicating over 1,000 requirements including resistance to high winds, heavy rain, snow, and hot and dry environments; hard flooring; electricity; more spacious area; and improved installation and transportation practices.

Interested manufactures engaged with UNICEF to find a solution to meet the indicated needs. Through a trial and error approach, prototypes were developed and tested in labs and the field to understand the usage in emergency contexts in different climates: Uganda for hot and dry, the Philippines for wet and humid and Afghanistan for cold.

The final product – UNICEF's High Performance Tent – lasts three times longer than the previous tents, can withstand 80km/h winds, and are packed in smaller bags to enable transportation to hard-to-reach locations. A straight-wall design also increases usable floor space by 20 per cent. They also have new and durable anchoring systems and improved installation guidance. In addition, there are a number of add-ons to suit various programmatic needs and climatic conditions, including hard flooring, electrical and solar kits, and winter liner.

The impact

The new tents provide safe environments for children coming from devastating situations such as conflict, earthquakes, or extreme weather events like cyclones and heatwaves. They offer improved environments for learning, play, and accessing health, child protection, and nutrition services.

They have a significant impact to emergency programming worldwide, bringing a higher quality and efficiency of services with a fit-for-purpose and value-for-money product.

UNICEF is now working to scale the product globally to improve humanitarian responses worldwide.

Key figures

Requirements

- **1,000** technical needs
- **500** sample requirements
- **350** field trail requirements
- **18+** months durability
- **50** kilo per bag transportation
- **80** km/h+ wind resistant
- **300**N/m2 snow load capacity

$ Investment (in USD)

- **3 million** industry investment
- **526,000** UNICEF investment

Manufacturers

- **80** companies started
- **10** companies proposal stage
- **4** companies sample stage
- **3** companies selected

Final product

- **3** tent sizes: 24, 48, 72 m2
- **5** add-on features
- **90** minute set up time (48m2)
- **3** instructional languages
- **3** layer window system
- **20%** more usable floor space

High Performance Tents

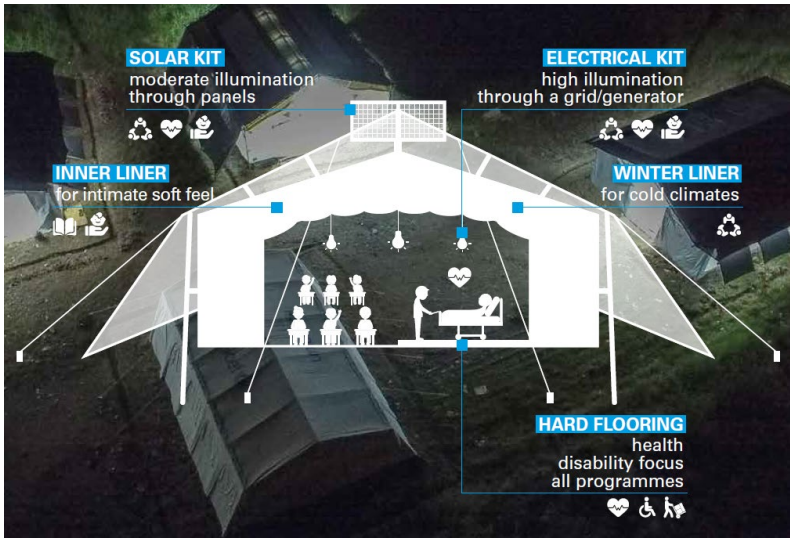
Key features

- **New anchoring** system adapted to keep the tent well-secured.
- **Straight walls** create a better indoor setting with increased space capacity.
- **Three layer window** system (mosquito net, transparent sheet and full cover) provides ideal light and ventilation.
- **Full size windows** provides optimal temperature control and light.
- **Elevated shade net system** facilitates temperature control, providing optimal internal climates.
- **Mesh-fuse sections** within the shade net trigger when stressed, preventing rain/snow build-up that could otherwise cause collapse.*
- **Large gable openings** provide increased airflow and easy access.*
- **Carry-on bags** is a key component to reach last mile destinations.
- **Easy-to-use installation** instructions are available via video and print (in English, French and Arabic)
- **Reusability** of the tents and add-ons for multiple emergency responses.
- **Partitioning kit** allows the space to be used for separate rooms.

The add-on options include:

- **Hard flooring** allows for transportation (i.e. via forklift) and storage of heavy equipment.
- **Electrical kit** provides illumination and energy through a grid/generator, allowing for 24h health services and safety at night.
- **Solar kit** provides illumination and energy through panels, allowing for 24h health services and safety at night.
- **Winter liner** facilitates programming in cold climates, including the ability to install a stove within the tent.
- **Inner liner** creates a more comfortable/ intimate space for children to learn, play and access psychosocial support.

*Only available in some versions. UNICEF uses designs from three manufacturers to ensure sufficient supplies are available during an emergency.



Facilitating a co-creation process

During the R&D phase, a co-creation model was applied where UNICEF facilitated a high level of collaboration with industry while maintaining a transparent and competitive environment.

Samples were proposed by the manufacturers and repeatedly tested against the requirements. This included testing of wind resistance, thermal performance and ventilation rates in a large wind tunnel facility in addition to field testing in Uganda, Afghanistan and the Philippines to see the performance in hot/dry, cold and wet/humid climates. The manufacturers joined each round of testing to learn how they could improve the prototypes. This included travelling to the Jules Verne Wind Tunnel in France and to each field location where they interacted with UNICEF emergency staff to understand how the prototypes could be improved.

Scaling up

With over 70 years of delivering life-saving products to millions of children worldwide and a presence in over 190 countries and territories, UNICEF is uniquely positioned to be a leader in innovating for children. With this comparative advantage, UNICEF ensures new quality products reach those who need it most. For the High Performance Tents, this means including it in UNICEF's Supply Catalogue so it is available for procurement while providing guiding documentation and support to emergency programmes worldwide.





Left: Testing in Jules Verne Wind Tunnel, France; Right: Testing in Uganda. ©UNICEF/Sorensen

For more information: www.unicef.org/innovation/productinnovation

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