Start building by drinking water.
Problem

Greece, Lesvos
Temporary refugee camps on the Aegean Islands are currently overflowing with refugees at six times their capacity. This leaves the refugees to survive in inhumane conditions, lacking basic resources like a proper shelter. Furthermore, poor waste management in the camps results in rivers of (plastic) trash.

Picture sources:
**Biomimetic Strategies**

**BottleBricks** are inspired by organisms which are experts on survival under harsh weather conditions.

**Saharan silver ant (cooling)**
*(Cataglyphis bombycina)*

Can withstand high temperatures by maximising light reflection and heat dissipation. These properties arise from the structure of the ant’s hairs which are elongated along its body. When zooming in, one can see that the triangular hairs have corrugations running along their length.

Covering its elliptical body with these hairs, the ant is able to reflect over 90% of incident light at a wide distribution of incident angles.

By recreating the filled, triangular and corrugated structure around the bottle, we emulate the heat reflecting function. The side of the bottle with these structures will reflect heat away on sunny days, thereby having a cooling effect.

**Nacre (aragonite) in molluscs (stacking)**

An interlocking system between small sections makes the overall structure strong. The triangular ridges can be interlocked between bottles to provide strength and stability to a full wall construct.

**Silk cocoons (insulation)**
*(S. cynthia , A. pernyi and A. mylitta)*

Still air trapped within the porous cocoons provides a thermal buffer to protect against outside temperature changes. The crystals on the outer surface decrease wind penetration, creating an enclosed structure and effectively maintaining thermal insulation under windy conditions. Using an enclosed structure is an efficient way to trap stagnant air for insulation in cold environments.
**Solution & Product**

**BottleBricks**
Multifunctional water bottles delivered to refugees as their daily water supply.

Two sides enable for adaptability to seasons:
- **The smooth side** will capture sun energy in winter.
- **The ridged side** will reflect sunlight and protect from heat in summer.
- **The enclosed structure** traps air and provides insulation in all seasons.
Customer Profile

We principally target humanitarian aid agencies.

Customer Goals
- Provide basic needs for camp inhabitants, such as water, food, accommodation and equipment.
- Set up and maintain a safe and hygienic environment.
- Organize, distribute and maintain resource capacity and regulate rules/institutions.
- Inform and connect volunteer help organizations for aid and supplies.

Customer Pains
- Demand for help and settlement exceeds capacities.
- Is guided/limited by overarching regulations from European government – asylum Law.
- Severely constrained by funding limitations.

Preferred channels
- Traditional Ads
- Online & Social Media
- Referral
- Guerrilla Efforts & PR
Revenue Model

Our revenue model is in development.

Currently, our focus is on exploring a licensing model.

Thereby, the aim is to set up collaborations with existing plastic bottle producers.

These producers will be authorized to manufacture the bottle shape design of BottleBricks.
Outreach

Supporters

- Biomimicry Institute
- Part of the Biomimicry Global Design Challenge Finals
- Utrecht University

Publicity

- Biomimicry Institute
- BioSCOPE (local Biology magazine)
- Utrecht University
- RTV Utrecht (local radio station)
The success behind BottleBricks is that we all have a shared goal; 

*To create innovative solutions that contribute to a more sustainable and social future. Thanks to a composition of people with different educational backgrounds and personal strengths we complement each other ideally as a team.*

Our advisors:  
Lindsay James & Louisa Ulrich-Verderber
Contact

We are looking for contacts that have **experience** working on the **Greek Aegean islands**. Specifically, investors, partners and organisations that can **assist** us with **licensing agreements**.

Currently, we are working on developing the first **prototype**. Can you, or do you know people who can help us?

Please contact us through one of our channels!

- **Email**: bottlebricksnl@gmail.com
- **LinkedIn**: [https://www.linkedin.com/company/bottlebricksnl](https://www.linkedin.com/company/bottlebricksnl)
- **Instagram**: [https://www.instagram.com/bottlebricksnl/](https://www.instagram.com/bottlebricksnl/)