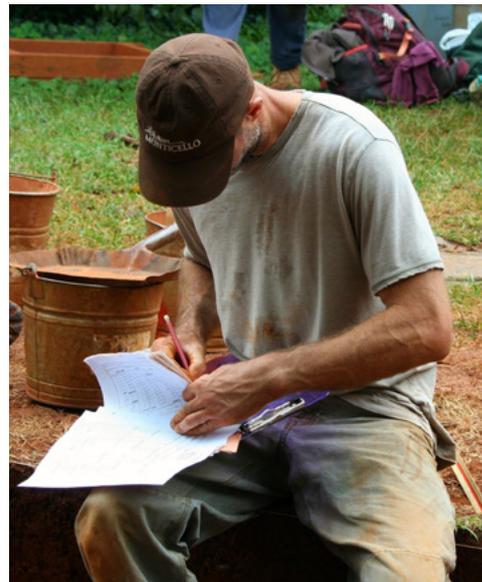


WHAT IS THE UNHRD LAB?

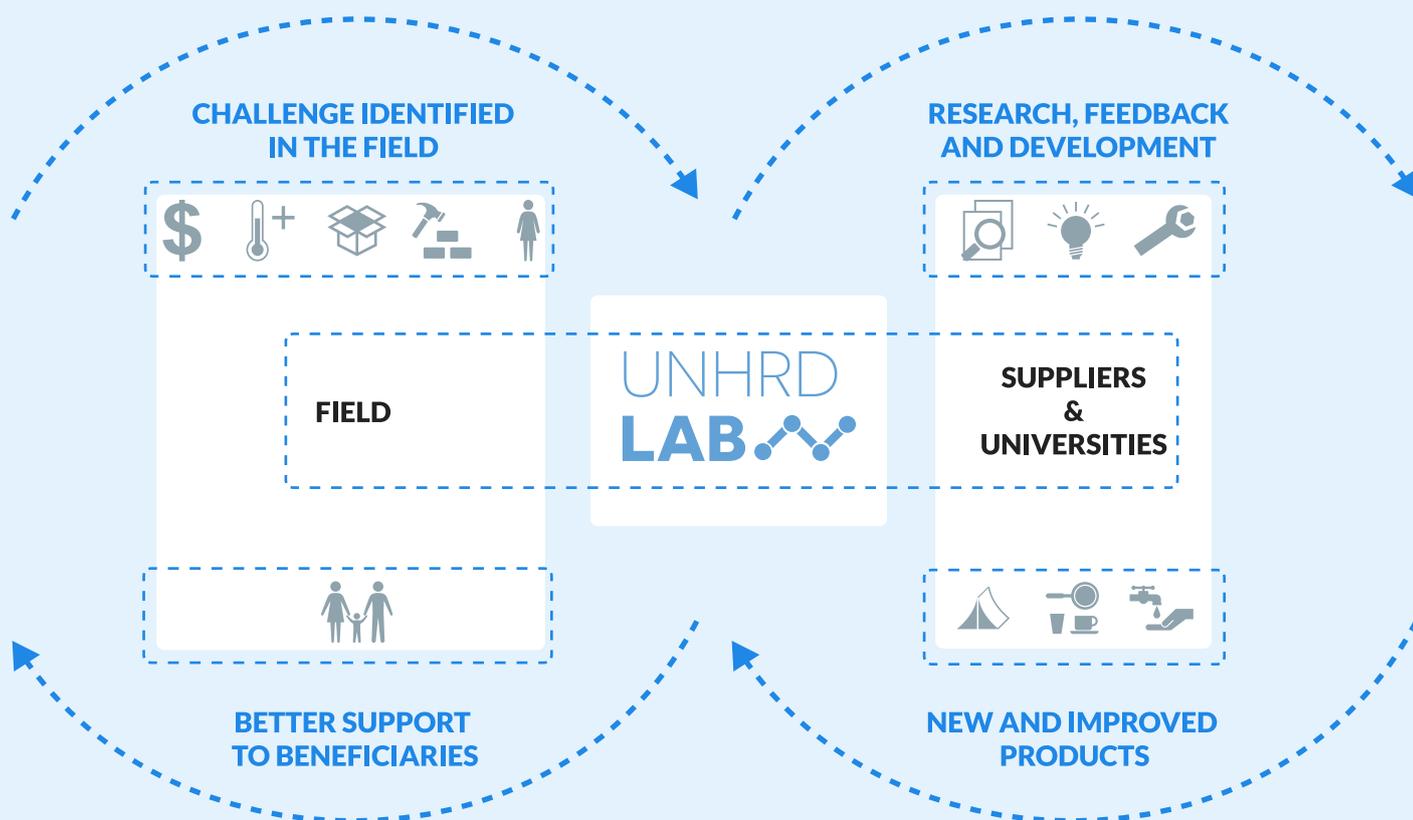
The UNHRD LAB is a **research and development** unit that **reviews, optimizes and tests** products used in humanitarian settings, as well as helps develop innovative products for humanitarian operations. It provides organisations with the **best specifications for field items** that incorporate new and green technologies, and user-friendly parts. As the UNHRD Network is a Common Service to 70 humanitarian organisations and has solid relationships with suppliers, it is well placed to help identify more appropriate, standardized and cost-effective items through the UNHRD LAB.

Assistance from the UNHRD LAB is freely available to all UNHRD Partners.

The UNHRD LAB is based within UNHRD Brindisi's facilities and is made up of field experts and engineers, including an engineer from the University of Bologna and a Junior Professional Officer (JPO) from Norway. They engage leading research centres, suppliers, Mercer University – School of Engineering, University of Bologna, government agencies and UNHRD Partners to review relief items and undertake comprehensive market analysis.



HOW DOES IT WORK?



WHAT DOES IT FOCUS ON?

GREEN TECHNOLOGY

Providing easy-to-set-up and cost-effective green solutions

INNOVATION

Finding new, tailored made solutions to field challenges

TECHNICAL ADVICE

Advising organizations on the best specifications for their activities

KITS

Analysing the use of kits in the field and proposing upgrades to suppliers

STANDARDISATION

Standardising items to maximize economies of scale and encourage loans

COMPLETED UNHRD LAB ACTIVITIES

PROJECT NAME

INSULATED MOBILE STORAGE UNIT POWERED BY RENEWABLE ENERGY

PARTNERS INVOLVED

WFP, W. GIERTSEN HALLSYSTEM AS, UNIVERSITY OF BOLOGNA



+ 45°C
WITHOUT INSULATION
25°C
WITH INSULATION

In collaboration with the **University of Bologna and W. Giertsen Hallssystem AS**, the UNHRD LAB is helping develop an insulated Mobile Storage Unit (MSU) which will be used in hot locations to provide cool storage for medicine, specialized nutritious food and other items that have specific temperature-controlled storage

requirements. In addition to insulated inner liners, this MSU includes 250m² of solar panels that provide enough energy to run a refrigerated system, allowing all goods to be kept below 25°C. Using solar energy will reduce the amount of fuel used for generators and will reduce the operational carbon footprint.

Usually, the medicine or specialised food would need to be dispatched very quickly but this MSU helps extend their shelf life because of the temperature-controlled storage, thus resulting in significant savings not just with the items but also the onward transport options. The expected impact of this MSU will not only include cost-savings and environmental efficiencies along the supply chain, but it will also enable better, more targeted, longer-term programme planning with items that require temperature-controlled storage. These MSUs could be placed in more remote locations, which would cut transport lead time and costs, and those newly-available resources could be used to support beneficiaries in other ways.



ONGOING UNHRD LAB ACTIVITIES

PROJECT NAME

REFLECTIVE SHADE NET

PARTNERS INVOLVED

WFP



+ 45°C
WITHOUT INSULATION
25°C
WITH INSULATION

Shade nets offer protection from overheating, UV and IR radiation for people and structures. When they are used on top of prefabricated structures, they reduce the inside temperature so less air-conditioning is needed and therefore less diesel used. The UNHRD LAB is currently testing the functionality of reflective shade nets and equipment on several structures. Afterwards, shade nets will be offered to UNHRD Partners as part of an optional kit to accompany prefabricated units, as they do not increase the weight and the cost only increases by 2%.



PROJECT NAME

SOLAR COOKERS

PARTNERS INVOLVED

UNIVERSITY OF BOLOGNA

A solar cooker is a device that uses the energy of direct sunlight to heat, cook or pasteurize food or drink. As they do not use fuel and there are no additional operating costs, many non-profit organizations promote their usage to help reduce fuel costs, air pollution, deforestation and desertification caused by gathering firewood for cooking. The UNHRD LAB is working with suppliers and partners to develop a solar cooker whereby the packaging is used to attract the sun rays and generate enough power for cooking. Beneficiaries will therefore be able to boil water and slow-cook their food, and the device incorporates all parts of the product - including the packaging - while still being user-friendly.

