



HydroPacks for Disaster Relief



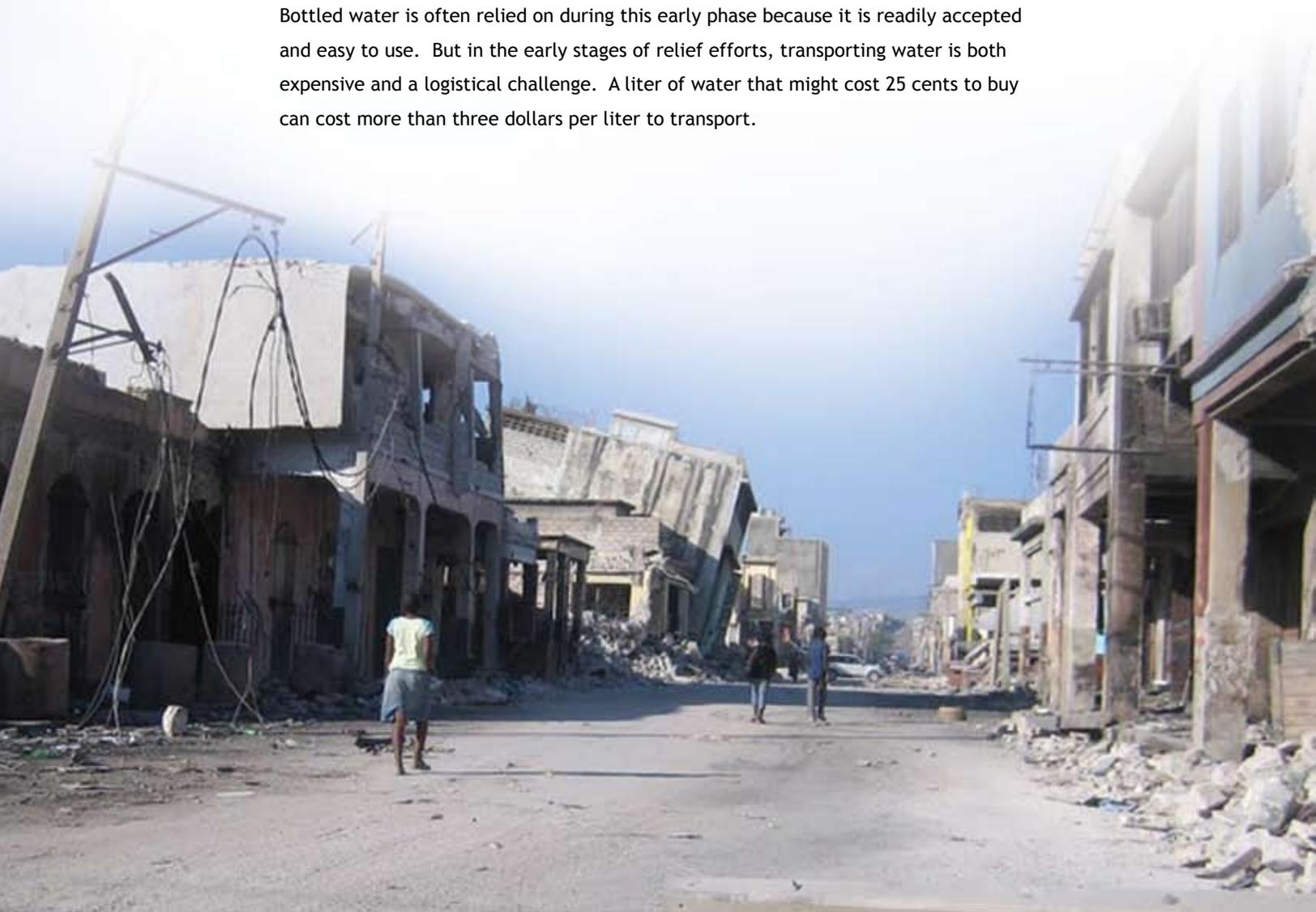


In any emergency, water is a priority.

If clean water is not available, then disaster victims will drink contaminated water. The resulting spread of disease can claim more lives than the disaster event itself.

Transporting water into the post disaster areas can be a logistical nightmare. Congested airways, damaged or flooded roads combined with the lack of electricity make it incredibly difficult to bring in the necessary relief supplies.

Bottled water is often relied on during this early phase because it is readily accepted and easy to use. But in the early stages of relief efforts, transporting water is both expensive and a logistical challenge. A liter of water that might cost 25 cents to buy can cost more than three dollars per liter to transport.



A revolutionary paradigm shift in thinking about hydrating survivors.



The HTI HydroPack is the superior alternative to the shipment and delivery of bottled water or other water provisions during the initial phase of a disaster. The HydroPack is a single use emergency hydration pouch that uses Forward Osmosis technology to safely filter water. The nutrient powder inside the HydroPack envelope creates osmotic pressure due to the high concentration of dissolved solids inside the pouch. This draws water across the membrane into the pouch, while contaminants are rejected by the tight membrane filter. The result is a great tasting, nutrient-enhanced drink that is clean and safe.

HydroPack purity is comparable to reverse osmosis systems. In independent laboratory tests, HTI filter technology meets or surpasses 6-log bacteria (99.9999%), 4-log virus (99.99%), and 3-log parasites and cysts (99.9%) reduction, as specified by the EPA for water purifiers.

The HydroPack is also very reliable. Unlike reverse osmosis systems or chemical disinfection solutions, the HydroPack works in the widest range of source waters, even muddy or brackish waters.

During the early stages of any disaster relief operation, water solutions should:

- 1 Be quickly transported and immediately distributed to victims**
- 2 Implement easily and rapidly without complex training**
- 3 Safely hydrate disaster victims**
- 4 Be broadly accepted by the population affected by the disaster**

1 HydroPacks can be quickly transported and immediately distributed to victims.

Each 1 oz HydroPack delivers 12 fluid ounces of safe drink to the disaster victim, providing a 10X to 18X logistics savings in weight and cube compared to bottled water. Unlike bottled or bulk water, HydroPacks can easily be airdropped, each air asset delivering the equivalent of what would take 10 to 18 air assets filled with bottled water. The transportation savings in that case more than pays for the HydroPack itself.

This logistics savings also means that even small vehicles can deliver big; a light weight pick-up truck carries the equivalent of 5000 liters of water in HydroPacks on muddy or damaged roads bulk tanker trucks could never pass. And while replacing bottled water with HydroPacks during the first days of disaster response will save hundreds of thousands of dollars in transport costs, more importantly it means getting more relief to more people, faster.

A Logistics multiplier advantage of up to 18X means fewer trips, faster delivery, and more product in the hands of survivors.

Depending upon the relative cost of bottled water, HydroPack providers can deliver up to twice as much water to survivors for the same delivered total cost as bottled water, and do so more quickly and efficiently.



2 HydroPacks can be implemented easily and rapidly without complex training.

This is possible because the HydroPack is as easy to use as bottled water. Simply drop it in the water, and let it hydrate. During a research project conducted in Kenya, compliance was nearly 100% with very little training. There was peer-to-peer training and self-correction. Hundreds of people can be trained on the HydroPack in just a few minutes, allowing for quick and easy distribution and printed instructions are clear, concise and intuitive.



3 HydroPacks safely hydrate disaster victims.

The HydroPack can be trusted to provide pure fluids no matter the water source. Random sampling and lab testing in contaminated source waters demonstrate a 6-log reduction pouch performance under field conditions.

But the HydroPack provides more than just a very pure drink; added electrolytes and other nutrients provide additional health benefits to disaster victims. And because of the great flavor, users demonstrate higher rates of consumption than water, which results in better hydration.

4 HydroPacks are broadly accepted by populations affected by a disaster.

No matter how effective a technology is in reducing contaminants, it is useless if disaster victims resist using it. Chemically treated water tastes bad and can discourage use, but the HydroPack tastes great and brings very high acceptance. During the Kenya research project acceptance was 100%.

Field tested during the Haiti Earthquake and again in Chile, and finally in our Kenya Field test, the results are conclusive. HydroPack works well, people love it, and it solves the problem of immediate Hydration.





"I was one of the medical mission workers that was at the Villa with you in February. I just wanted to write and tell you how wonderful your HydroPack product was for the Haitian people we served. I am talking about the powdered plastic packets that you put in the swimming pool in the Villa and they evolved into a Gatorade-like drink. We took several of these up to our health clinic while we were there and gave them to a lot of dehydrated/fevered people. They enjoyed the drink while the fluids helped heal them. This is a great product and I would encourage you to produce more, especially if you can get this to people who do not have clean drinking water. Thank you so much for allowing us to use this for our patients. We saw over 225 people a day who needed a lot of help in so many ways. I enjoyed meeting and speaking with you. Hope this finds you doing well. Be Blessed and Be a Blessing!"

Ina Glass, MSN, RN
Chief Nursing Officer
Vice President Patient Care Services
Fort Logan Hospital
(Haiti disaster relief mission 2010)



"A key advantage of the HydroPack is that it is its own drinking container, so the chance of recontamination is very low. This is very important in a disaster situation, where household storage practices are compromised. I would recommend it, especially for those situations that require delivery by air."

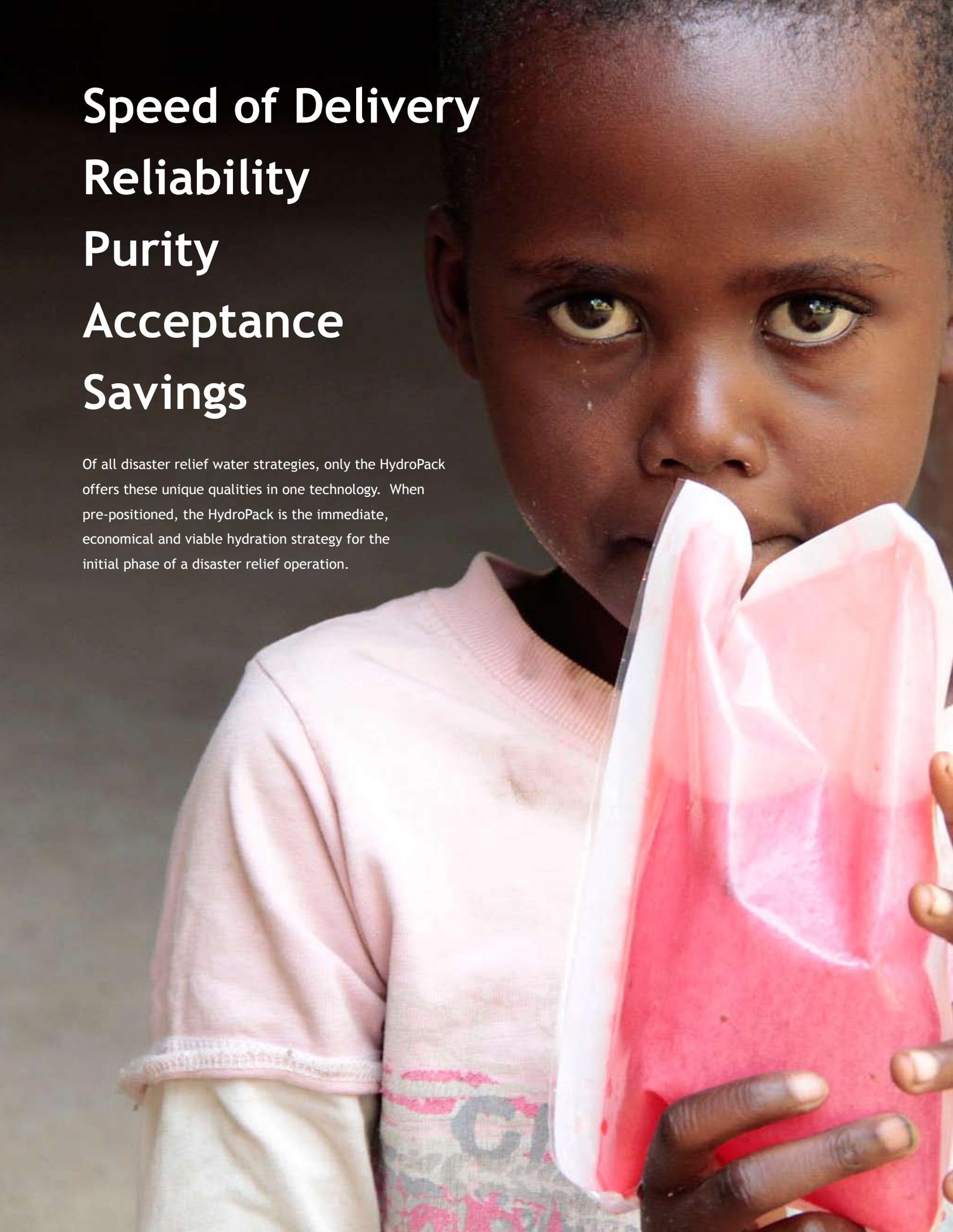
Francis Kage
KWAHO Program Officer
(Kenya Water and Health Organization)



"The HydroPacks were easy and convenient to pass out to people we came across during the trip, but just having the product with us was huge. Knowing we could access clean water if we needed to was very important to us."

Josh Berry
Environmental Director
Save the Waves
(Chile disaster relief mission 2010)



A close-up photograph of a young child with dark skin and hair, looking directly at the camera with a serious expression. The child is holding a large, pink, flexible water pouch (HydroPack) in front of their mouth. The pouch is partially filled with water and has a white opening at the top. The child is wearing a light-colored, long-sleeved shirt with some faint, colorful patterns on the front. The background is a plain, light-colored wall.

Speed of Delivery

Reliability

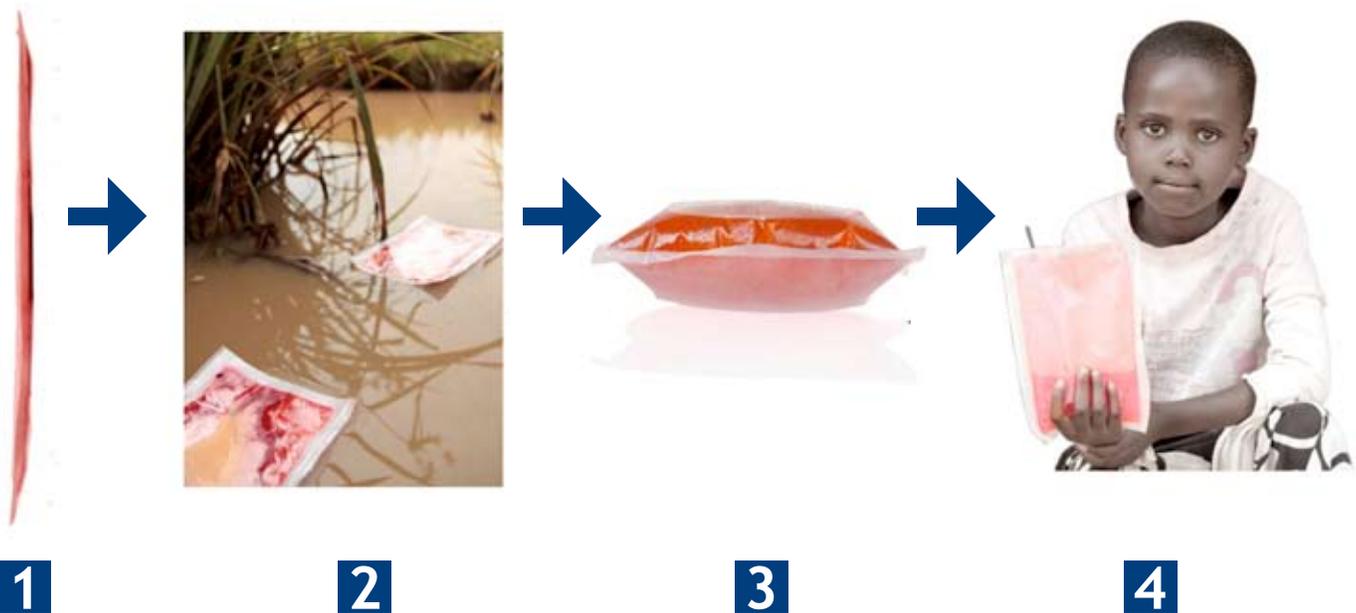
Purity

Acceptance

Savings

Of all disaster relief water strategies, only the HydroPack offers these unique qualities in one technology. When pre-positioned, the HydroPack is the immediate, economical and viable hydration strategy for the initial phase of a disaster relief operation.

The Simplicity of the HydroPack



1. A thin envelope with one membrane side and filled with a nutrient powder
2. Place it in any water source to self-hydrate overnight
3. When full, contains 1/2 liter of pure, nutrient drink
4. User pokes with straw and drinks



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