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## Science Times

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### A Company Prospers by Saving Poor People's Lives

By DONALD G. McNEIL Jr.

**I**t all started with mosquito nets. Or, no, with guinea worm filters. Or, before that, with a million yards of wool in the mountains of Sweden.

Or, taken back another generation, to uniforms for hotel and supermarket workers.

There are plenty of charitable foundations and public agencies devoted to helping the world's poor, many with instantly recognizable names like Unicef or the Gates Foundation.

But private companies with that as their sole focus are rare. Even the best-known is not remotely a household name: Vestergaard-Frandsen.

Its products are in use in refugee camps and disaster areas all over the third world: PermaNet, a mosquito net impregnated with insecticide; ZeroFly, a tent tarp that kills flies; and the LifeStraw, a filter worn around the neck that makes filthy water safe to drink.

Some are not only life-saving but even beautiful. The turquoise and navy blue LifeStraw is in museum design collections.

"Vestergaard is just different from other companies we work with," said Kevin Starace, malaria adviser for the United Nations Foundation. "They think of the end user as a consumer rather than as a patient or a victim."

For example, he said, they have added a cellphone pocket to their bed nets, and make window curtains that kill bugs.

The company, begun in Denmark 51 years ago to make work uniforms, is now run by Mikkel Vestergaard-Frandsen, the grandson of the founder.

After finishing high school in 1991, he said, he had "no interest in growing the market for men's shirts." Instead, he went backpacking through India and Africa, entertaining thoughts of going to Kuwait to fight the oil-field fires set during the gulf war.



GEORGINA GOODWIN/VESTERGAARD-FRANSEN

**NEW PROGRAM** Mikkel Vestergaard-Frandsen in Kenya, site of AIDS testing.

Stranded in Egypt, he met two Nigerians who told him he could make good money in their country importing used cars from Europe.

"When you're 19, you don't have much of a business plan," he said. "So I ended up in Lagos, selling cars and truck engines and buses."

But the chaos of a coup in 1993 sent him back to Denmark.

Meanwhile, his father, Torben, had struck a deal to buy a million yards of old olive-gray wool cloth from Sweden's civil defense stockpiles.

"Sweden had mountain caves full of everything you need in case of World War III, but they decided the risk was not so great anymore," the elder Mr. Vestergaard-Frandsen said. "This was for military uniforms. It was good quality, very expensive wool, but it looked so

bad that no housewife would have it on her couch."

Mikkel agreed to take a desk at the back of the factory and work on the next step: having it cut into blankets and sold to the Red Cross. Much of it, he said, ended up in Rwanda and Kurdistan.

Meanwhile, the company's main business was facing competition from Asia, and both he and his father found relief work more interesting. Exporting used clothes for distribution in refugee camps was profitable. And there was a market in tsetse fly traps; the flies, which transmit sleeping sickness, are drawn to certain wavelengths of blue light, so the company had to make fabric of the right shade that did not fade in sunlight and did not weaken when permeated with insecticide.

In 1998, they became a supplier to the Carter Center, which was founded by



VESTERGAARD-FRANSEN

**LIFELINE** A woman in Uganda drinking with the inexpensive LifeStraw.

former President Jimmy Carter and was leading the global effort to eliminate guinea worm. The worms start life as microscopic larvae inside tiny pondwater fleas but, once swallowed by people, emerge a year later as yard-long strands resembling fine spaghetti but wiggling out of acid-filled blisters, causing excruciating pain.

The center needed mesh filters fine enough to strain out the larvae but tough enough to survive stretching over a water jar. Vestergaard made squares of nylon strainer reinforced with canvas.

The company is “very reliable and they have good quality control,” said Dr. Ernesto Ruiz-Tiben, the director of the guinea-worm program. “We’ve bought millions of dollars’ worth of product from them.”

The company also recreated an idea that Dr. Ruiz-Tiben got from Tuareg nomads in Mali: packing the filter into a short plastic pipe so the user could lie down and drink from any puddle. Later versions replaced the cloth with fine metal mesh.

That pipe was the inspiration for the LifeStraw, a 10-inch plastic cylinder that filters out or kills bacteria, parasites and some viruses and can be made for less than \$3.

Early versions used iodine beads and a charcoal filter to lessen the iodine taste. New ones use hollow-fiber technology.

To promote the straws, Torben has let television crews film him drinking out of Copenhagen’s canals and even a toilet.

“That was awful,” he admitted. “It was a ladies’ toilet, and they put in some odor chemical to make it smell better, and LifeStraw doesn’t take out chemicals. And the canals have salt from the seawater. It can’t filter that, so I drank a lot of salt.”

Aid agencies have bought tens of thousands for use after the Myanmar cyclone and earthquakes in Asia. The company now makes a bigger version that filters five gallons an hour with no iodine aftertaste and will last a typical family three years.

Torben said he had been asked by a wing commander from the aircraft carrier Kitty Hawk whether he could make a seawater-filtering version for downed pilots. He wished he could, he said, noting that many third-world wells are brackish, and poor villages on the ocean could use it too. But salt is too fine to remove without reverse osmosis, a technology that requires lots of power, he said.

While Torben is sometimes described as the company’s mad scientist, Mikkel has gone beyond being a supplier to helping set global policy. For example, on the boards of public-private partnerships like Roll Back Malaria, he is often the official representative of the business world.

Huge chemical companies like BASF or Sumitomo, his rivals in the insecticide-treated net field, “send a product manager or a regional director to board meetings,” said Mr. Starace of the United Nations Foundation. “But Mikkel’s a C.E.O.”

“Also,” Mr. Starace added, “he’s always the most audacious thinker in the room. And he’s willing to roll up his sleeves or even throw his own employees at a problem. He lent Roll Back Malaria his chief financial officer to help it do better audits. Nobody else would do that.”

In September, to celebrate Vestergaard-Fransen’s 50th anniversary, the company tried something particularly audacious.

Very few rural Africans are willing to take AIDS tests because the stigma of even asking for a test is so strong. Mikkel decided to try bribery. Picking one health district in western Kenya, he offered anyone who would get tested a pack containing a net, a water purifier, 60 condoms and health education pamphlets.

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## *A family business that sees poor villagers as consumers, not victims.*

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Huge lines formed at the district’s 30 clinics, and nearly 50,000 people were tested. In one week, the percentage of adults in the district who had taken a test went to over 80 percent from less than 20 percent. Because testing was so centralized and fast, it included CD-4 counts, which are more sophisticated and determine whether someone is sick enough to start antiretroviral therapy immediately.

It was expensive — it cost the company \$3 million. “But if I may be so blunt,” Mikkel said, “it’s the only demonstrable way besides door-to-door visits to get that response.”

He hopes to publish the data in a medical journal so donors can consider picking up the tab.

Vestergaard-Fransen, which is family-owned, does not disclose financial data, but it has sold 165 million nets and makes a profit, Mikkel said.

But he also has a passion for the work, he said, and the challenge of trying to invent a new product each year.

“Very few companies take the attitude that doing good is good money,” he said. “They make a net, or they make a ceramic filter, and sell it. But make no mistake — as soon as we’ve proven this is a good idea, they’ll come in. They’re sitting there right now, watching us.”