IDEAS FOR A BETTER WORLD

How a simple invention can remedy malnutrition

The social entrepreneur Felix Brooks-church invented a machine that enriches flour with vital nutrients. She is already saving lives in Tanzania

Alois Pumhösel November 5, 2021, 9:50 am 389 posts

A small dosing machine with a big effect for entire generations. Felix Brooks-church declares war on malnutrition.
Photo: Rolex / Leah Kidd

Even if the number has been reduced in the past decades, around 800 million people across the world still suffer from hunger. There is also a phenomenon that development workers call "hidden hunger". It affects people who take in enough calories but whose diet is so unbalanced that they suffer from deficiency symptoms. They lack minerals such as iron and zinc, vitamins or folic acid. The consequences are dire: they do not develop a strong immune system, are sickly and weak. They don't die of starvation, but they may die from malaria or anemia. Globally, according to Welthungerhilfe, two billion people - a quarter of humanity - are affected by malnutrition, most of them in Africa, South America and Asia.

An undersupply of pregnant women and small children is particularly serious. The health effects can hardly be made up for later in life. For Felix Brooks-church it was a formative finding that the deficiency in the so-called micronutrients has such a far-reaching effect - which, as he says, can even lead to learning difficulties and impairments in cognitive development. As a development worker who took care of street children in Cambodia, for example, the American took on a new role. He wanted to switch from treating only the symptoms of poverty to prevention. "In Cambodia we were only able to look after about 100 children. But there are millions like them. So I tried to find a way to help not only selectively but on a broad basis",

Lack of access to fortified foods

He found this way too. He met Stanford researcher David Dodson, who is working on the question of how staple foods such as flour can be fortified with micronutrients to ensure a balanced diet - a technique known as fortification, which is also common in western countries. For example, table salt is iodized in Austria to prevent deficiency symptoms.

However, Dodson deals with strategies in the industrial environment - for products whose supply chains end in supermarkets. The inhabitants of many rural areas in parts of Africa, Asia or South America do not get their food from supermarkets, but from local suppliers. As a result, there is also a lack of access to fortified foods.

Brooks-church, who co-founded the social enterprise Sanku with Dodson, set out to close this "fortification gap". "You have to enrich the food where it is produced - also in the cities or villages of Africa," says Brooks-church. In Tanzania, where he has been living for eight years, like in many other countries in the Global South, it is small grain mills that supply the rural population with flour - systems that only produce for a few thousand people. For Brooks-church they became the center of its efforts. You will now be equipped with a specially developed enrichment technology.

Practical technology

For this purpose, students at Stanford University designed the concept of a machine that mixes the nutrients in the mill in the right concentration. Brooks-church spent years implementing a solution that could survive in rural East Africa. "The device basically has two functions: It weighs the grain that goes into the top of the mill. On this basis, the correct amount of micronutrients is calculated, which is then dispensed with a separate metering device," he explains.

Almost 2.4 million people already receive flour fortified with important minerals. At the end of the decade, the project alone should make it 100 million.
Photo: Rolex / Leah Kidd

The device is definitely high-tech: sensors monitor the automated functions, a computer module controls all processes. The system can be monitored remotely via a cellular connection. The technology was not allowed to cause any additional work for the miller. The only difference for him: he no longer pours the grain directly into the mill, but into the dosing system attached to it. A Sanku service team takes care of topping up nutrients and maintaining the systems.

A learning and development process was also necessary on the economic side: "Our business model emerged from a failure," says Brooks-church. The traditional approach of millers buying the nutrients and passing the cost on to their customers failed. "But then we found a way to neutralize the costs," says the Sanku founder. The new system focuses on resources that the millers already spend money on - the sacks of flour. Sanku now buys these for all participating mills in large quantities and thus receives a correspondingly lower price, but the millers pay the usual amounts. The micronutrient replenishments are financed from this margin.

Milestone reached

The concept works: In September Brooks-church and his team reached a milestone - mill number 600 was equipped. Donations such as a recent award for entrepreneurship from the watch brand Rolex also flow into the operation of the social enterprise. 2.4 million people are already consuming the fortified flour. In the next few years, Sanku is to expand into other countries in East Africa. Brooks-church lists smaller projects in Kenya, Malawi and Rwanda. "Our goal is to reach 25 million people in the next five years and 100 million in a decade." In addition, there are already interested parties from other parts of the world - for example from Pakistan and India.

Brooks-church is a cosmopolitan. Before he was ten years old, he lived with his parents in seven different countries. He studied geology and worked as a graphic designer before moving to development cooperation. His nutrition project became a life's work. "8,000 children die from malnutrition every day. We want to reduce that number over time," says Brooks-church. But it is also about the importance of the measure for entire societies and nations. "The children grow up with a stronger immune system and can concentrate better in school," says the founder. "You can start the development of an entire country through the stomachs of a generation of people." (Alois Pumhösel, November 5, 2021)

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