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## Nutriset, a company at the heart of the nutritional revolution

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**Abstract.** The fight against severe acute malnutrition—which, according to UNICEF, kills between 3.5 and 5 million children under five every year in developing countries—has been a priority for international NGOs and for various United Nations agencies for several decades now. While addressing this ongoing emergency, it is also vital to provide specific nutritional products for the millions of people suffering from moderate to acute malnutrition, and to devise nutritional supplements that are easily affordable for very low-income population groups in Africa, Asia and Latin America. Until recently, all such interventions were left to trial and error in the field; but now they have been made possible thanks to the technological breakthroughs of a French company. Nutriset—founded 25 years ago—is now a leading actor in the humanitarian sector. Its industrial applications and research, in collaboration with the scientific and humanitarian communities, have brought about a genuine revolution in all three areas. By developing a complete range of ready-to-use products, distributed by NGOs, and which the children themselves can use without risk, and by building a global network of local producers, Nutriset has revolutionized the world of nutrition.

**Keywords.** Nutrition, malnutrition, children, poverty, NGOs.

The French company Nutriset, based near Rouen in Normandy, set out from its inception in 1986 to design and manufacture nutritional products specifically to combat malnutrition in developing countries, following the initiative of its founder, Michel Lescanne<sup>1</sup>. A food processing engineer specializing in the dairy industry, Lescanne had always sought, through personal conviction, to harness his business project to a humanitarian goal. He picked a simple slogan, one that neatly encapsulates the company's mission statement: "Feed the Children"—under-five year olds being the primary victims of malnutrition.

When the company was set up 25 years ago, the nutritional techniques for saving the youngest victims of famine were still largely improvised and empirical, consisting mainly of high-vitamin porridge, for which each international organization had its own recommended "recipe". Michel Lescanne resolved to place his industrial skills at the service of two sectors that were looking for practical solutions to ground-level issues. The first was the then-burgeoning community of international humanitarian organizations, which were faced, in their emergency missions,

with numerous and recurrent challenges in trying to save the victims of malnutrition<sup>2</sup>. The second was that of the nutritional scientists and academics, who were gradually abandoning the dogmas of the post-war period and inventing innovative solutions in their laboratories to counteract the pathologies associated with malnutrition, but who were not thinking in terms of industrial channels<sup>3</sup>.

Nutriset acted as a gateway between the two worlds, with their common goals. It enabled both to make significant advances by converting, on an industrial scale, the scientific intuitions of one group into specific and reliable products that met the other group's need for practical and immediate efficacy. As a result of this collaboration, which has lost none of its initial impetus, Nutriset now offers a complete range of ready-to-use therapeutic foods (the best-known being without doubt being Plumpy'nut®), for simplified and targeted treatment of acute malnutrition in all its forms.

Over the last 25 years, this alliance between an international group of nutritional scientists, a fast-growing humanitarian sector, and, on Nutriset's side, an in-house research

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<sup>1</sup> [www.nutriset.fr](http://www.nutriset.fr)

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<sup>2</sup> In particular the teams of the French NGOs Médecins Sans Frontières (Doctors Without Borders), created in 1971 and Action Contre la Faim (Action Against Hunger), created in 1979.

<sup>3</sup> For example, the tropical metabolism unit of the University of the West Indies at Kingston, led by Prof. Waterlow - known in the field as the «Jamaica Group» - which systematically analyzed, in the 1970s and 1980s, the protein and energy requirements of children convalescing after an episode of severe malnutrition.

capacity combined with recognized industrial know-how—implemented by 110 employees in the North and 700 in the South—has overturned the approach to treating malnutrition in developing countries, particularly with regards to women and children. Of the one billion victims of malnutrition in the world currently estimated by the FAO (the United Nations Food and Agriculture Organization), children and their mothers pay the highest price. In 2009, according to UNICEF (United Nations International Children’s Emergency Fund), 129 million children under five were underweight for their age, i.e. below the minimum weight established by the World Health Organization. More than half—68 million—were suffering from acute malnutrition, and 26 million of these were affected by the deadliest form, severe acute malnutrition, a condition which, combined with other diseases, leads inevitably to death for many of its victims unless they receive emergency treatment. Again according to UNICEF, between 3.5 and 5 million boys and girls under five die every year from malnutrition or related diseases<sup>4</sup>.

Clearly, “Feed the Children” is more than just a slogan. For the teams at Nutriset, it is a moral imperative. They have maintained their initial policy, from the company’s earliest days, of supplying only United Nations agencies—such as the WFP, UNICEF or the HCR—or NGOs such as Action Contre la Faim, Médecins Sans Frontières, or Save the Children; commercial customers are excluded on principle. This original synergy between the world of business and the world of humanitarian action has enabled significant progress to be made in research and treatment in the field of nutrition. Twenty years ago, therapeutic nutrition was still mainly concerned with meeting calorie intake targets, notably through protein support. Milk was always the solution of first resort, with numerous drawbacks for developing countries: many malnourished children were unable to tolerate the milk powders that the managers of humanitarian health centers continued to hand out—despite observing the serious digestive problems that ensued. An additional flaw was that these powders needed to be diluted in large volumes of drinking water, thus presenting a risk, in areas of poor sanitation, of using contaminated water, leading to infection and diarrhea.

One of Nutriset’s first major breakthroughs came in the early 1990s, when the firm launched the industrial-scale manufacture of high-energy milk powder, inspired by the work of scientists specializing in child nutrition. In 1993, one such team, led by Professor Mike Golden from Britain, proposed a new treatment protocol based on a more easily assimilated milk dubbed “F100”. This formula sparked a twofold revolution: a nutritional revolution, in that the new product, soon supplemented by a whole range of products, opened up a new, far more effective approach to treatment, based on micronutrients as well as proteins; and also a revolution in terms of usage, as the widespread distribution of these ready-to-use milk powders by humanitarian organizations reached a far

greater number of malnourished children, with significantly better outcomes<sup>5</sup>.

And yet, these initial success stories still came up against the hard realities of humanitarian fieldwork: access to drinking water remained problematic, and large numbers of personnel were still needed at nutritional care centers to prepare the numerous daily meals that children with severe acute malnutrition require for at least three weeks. Furthermore, in conflict-related humanitarian crises, the climate of insecurity surrounding the personnel could make treatment patchy and irregular, as happened during the Rwandan genocide of 1994. In the camps where the Rwandan refugees had gathered, on the country’s borders, the nutrition nurses of the humanitarian organizations were forced to leave the feeding centers at the end of each day, before they could distribute the evening meal. Their first task, on returning the next morning, was to count the tragic tally of the “early morning dead”. The nutritional rehabilitation and rebalancing phases required six or seven meals to be administered every 24 hours. When the center staff were away, children died of hypoglycemia and hypothermia, for lack of a quick meal or someone to watch over them. In other countries, and other conflicts, humanitarian workers had already arrived at the same observation: insecurity could disrupt distribution, even if the protocols developed by the World Health Organization called for constant supervision.

Another, more recurrent, problem arose from the nutritional centers’ practice of round-the-clock medical supervision, and the way in which it broke up households and families. Humanitarian workers had long observed that treatment at these centers could monopolize, sometimes for weeks, the attention of the mothers of the children in care. Many mothers had to cover large distances on foot to bring their children to the healthcare personnel. Some of them—those that came from furthest away—would stay at the center for days until their child was well enough to be taken back home. What became of their households during all that time? Who looked after their families? Others, meanwhile, would wear themselves out with endless journeys, neglecting their homes and also, very often, their daily work in the fields—malnutrition being most prevalent among subsistence farmers. Médecins Sans Frontières estimated that almost a third of the children left the feeding centers before reaching their recovery weight because their mothers simply couldn’t stay there any longer.

The dream of food that could be consumed by a child on his or her own was therefore gradually taking shape in the mind of the nutritionists, but it seemed distinctly unrealistic: how could we do without medical supervision, so crucial in detecting and treating other pathologies? How could we check that the treatment was being followed correctly? Where could we find enough drinking water to make up the several days’ worth of mix required for the child’s survival? And under what conditions of sanitation?

<sup>4</sup> According to various United Nations agencies, malnutrition currently kills more people than AIDS, tuberculosis and malaria combined.

<sup>5</sup> This work was the subject of a founding meeting between NGOs and research actors in 1993 under the aegis of Médecins Sans Frontières, and was published in «The Lancet» in 1994, before being approved by the World Health Organization in 1999.

### C. Troubé: Nutriset, a company at the heart of the nutritional revolution

Drawing on its growing research capacity and on its experience in food technology, Nutriset set about finding a solution. In collaboration with a French organization, the Institut de Recherche pour le Développement (IRD), and one of its researchers, the nutritionist Dr. André Briend, the company developed a nutritive peanut-based paste in individual ready-to-use sachet format, based on the formula for the F100 milk. Brought out in 1996 under the name Plumpy'nut®, this technological innovation heralded a new humanitarian and nutritional revolution: the advent of ready-to-use therapeutic foods or "RUTFs". Now, after an initial medical examination, most child victims of acute malnutrition can be treated as outpatients, at home with their families, and the children can feed directly from the sachet, leaving the mother free to carry on looking after the home and the other children. Rapidly used in trials by NGOs, notably by Action Contre la Faim in Chad and by Médecins Sans Frontières in Niger, the product designed by Nutriset has proved highly effective, considerably improving survival rates in children<sup>6</sup>.

Fifteen years after it was invented, Plumpy'nut® has amply demonstrated its efficacy<sup>7</sup> and has allowed Nutriset to develop many versions of the product. Thanks to the Plumpy® range of products, humanitarian workers can now not only implement curative treatments more effectively, they can also begin to consider the possibility of developing prevention policies. Some of these products, for example, are aimed at children suffering from moderate malnutrition; preventive use will stop such children from declining into acute malnutrition at times of food shortage. Others—all based on the same ready-to-use format—are aimed specifically at pregnant women, babies, or people with HIV.

International recognition came on June 7, 2007, in Geneva, New York and Rome, when the World Health Organization (WHO), the World Food Programme (WFP), the United Nations Standing Committee on Nutrition (SCN) and the United Nations International Children's Emergency Fund (UNICEF) published a statement entitled: "Community-based management of severe acute malnutrition". For the first time, the most important and prestigious international organizations recommended that, of the world's 20 million under-fives suffering from severe acute malnutrition, three quarters—those who had not lost their appetite and did not have medical complications—should be treated at home with highly fortified, ready-to-use "therapeutic" foods. The statement also pointed out that "when implemented on a large scale, and properly combined with hospital treatment for children with complications, community-based management of severe acute malnutrition could prevent the deaths of hundreds of thousands of children each year" from a scourge which "kills at least an estimated one million children each year—an average of one child every thirty seconds".

As a company with a strong humanitarian commitment, and also as the global leader in its sector, Nutriset has invested in a socially responsible policy with regards to developing countries. For several years now, in order to make the experience reproducible, the company has applied a franchise system, with exemption from royalties for use of its patents, in order to promote the development of a network of local producers who make and distribute the same products in Africa, India and Latin America. This approach works in three ways: it develops local employment around the manufacture of high-quality RUTFs, it mobilizes local agricultural sectors, and it moves production, on behalf of the international organizations, closer to the beneficiaries. A dozen producers are currently working to reinforce, from day to day, the opportunity for the victims of malnutrition to receive appropriate treatment. This network—the "PlumpyField® network"—is set to expand still further<sup>8</sup>.

Meanwhile, Nutriset is looking into ways to develop distribution channels to deliver nutritional supplements to low-income population groups, along with training on nutrition. This social marketing approach is designed to provide access to products of high nutritional quality, at a very affordable cost, for population groups who are not yet accustomed to devoting resources to improving the nutritional value of their children's food<sup>9</sup>. It was initially tried out in Niger, offering a product called "Grandibien" (literally, "grow well"), with the support of local health education organizations.

The lives of tens of millions of children are at stake. The techniques for correctly feeding or treating the victims of hunger—whether with RUTFs distributed by the humanitarian sector, or with enriched food supplements made accessible by what is very nearly a social economy approach—are now available. But the political and financial means are still, unfortunately, inadequate to roll out these techniques on a massive scale. More than ever, with the Millennium Goals still a long way from being achieved in 2015, a sudden increase in awareness is required if we are to put the vital issue of malnutrition behind us once and for all.

<sup>6</sup>The first studies on the impact of Plumpy'nut® and community-based therapeutic care were published by Dr. Steve Collins in «The Lancet» in 2001 and 2002.

<sup>7</sup>There are currently about thirty companies worldwide making RUTFs approved by bodies like UNICEF, which remains the world's leading purchaser of such products.

<sup>8</sup>The producers in the PlumpyField network are located in the Democratic Republic of Congo, Ethiopia, Mozambique, Madagascar, Tanzania, Malawi, Niger, the Dominican Republic, India, Haiti and the USA. They make more than half of the products in the Nutriset product range.

<sup>9</sup>The number of people living on less than 2 dollars a day is estimated at 2.5 billion. They constitute what the economist C.K. Prahalad calls «the bottom of the pyramid». The «BOP» market is now seen, by many development experts and actors, as an emerging market.