

A photograph of M.G. Venkatesh Mannar, an older man with white hair, wearing a blue button-down shirt. He is smiling and looking towards the right. The background is a vast, flat, light-colored landscape, likely salt fields, under a clear sky. His hands are visible at the bottom right, gesturing as if in conversation.

# M.G. Venkatesh Mannar

**IMPROVING GLOBAL HEALTH THROUGH AN ENGINEERING MINDSET**

**M.G. VENKATESH MANNAR (MS '72) BUILT  
A LIFE-LONG CAREER ON DELIVERING MICRONUTRIENTS  
TO THE DEVELOPING WORLD**

Mannar standing in the salt fields at Sambhar Salt Lake in Rajasthan, India.

When M.G. Venkatesh Mannar (MS '72) set out for the United States to get a master's degree in chemical engineering, he hoped to use what he learned to modernize his family's salt manufacturing business in India.

He earned the degree and something much greater than he could ever have imagined: an opportunity to make a positive difference in the health of some of the poorest, most vulnerable populations in the world.

"We had an opportunity in the early '70s to start looking at enriching salt," he remembers. "I was contacted by someone from UNICEF who said, 'There's iodine deficiency in many parts of the world—can you help us?' That's how I got involved in iodization of salt." What began with adding iodine—essential to brain development—to salt set Mannar on a 40-year career of reducing debilitating micronutrient deficiencies among the world's poorest and most vulnerable populations.

Mannar left the family business to become a consultant for UNICEF, the World Bank, and the World Health Organization, helping to establish salt iodization programs in more than 50 countries. Considered to be one of the most successful public health campaigns of the 20th century, the program today enables access to iodized salt for nearly four billion people. "I went to Bhutan, where there were very high levels of iodine deficiency in the early 1980s, to set up the first salt iodization plant with UNICEF," Mannar remembers. "Within two or three years of our distributing iodized salt to the population in that country, the problem—the goiters, the mental retardation caused by high levels of iodine deficiency—virtually disappeared.

Seeing similar dramatic improvements in health all around the world led Mannar to think bigger. "Because it's such a universally consumed condiment, I felt that we should look at other nutrients you can put into salt," he says. "Eventually I said, 'Why don't I give up my business interest, move full-time into this, and broaden it to adding nutrients to foods?'"

That desire to make a broader impact prompted Mannar and his family to move to Canada in the early 1990s, where he became president of the then newly formed Micronutrient Initiative (MI), a nonprofit organization dedicated to eliminating vitamin and mineral deficiencies around the world.

"At that time, there was a lot of interest in nutrition and micronutrients," he recalls. "The Canadian government was looking for someone to help take the organization forward, and it was just the right time at the right place."

During his tenure at the MI, Mannar spearheaded programs that continue to reach approximately 500 million people in more than 70 countries. Expanding beyond iodine to include vitamin A, MI has provided more than 75 percent of the vitamin A required for supplementation programs in developing countries since 1997. It's also working on programs to deliver zinc, iron, and folic acid, all vital to the growth and development of children.

One of the biggest obstacles to eradicating micronutrient deficiencies is simple lack of awareness of the problem, Mannar says. He has spent years meeting with heads of state to educate them about the issue.

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"This is an important problem that needs to be taken seriously at a very high level because it has a direct impact on human potential," he says. "A country that has severe deficiencies could lose several percentage points of its GDP. The solutions are very cost-effective—if you invest a dollar in fortification, you get back \$30 to \$40 in terms of improved human health, better productivity, and mental and physical development in children."

For Mannar, the work has been a tremendous effort for an even greater reward. "Seeing the huge number of people we've been able to reach through these programs—we estimate nearly half a billion people directly benefit from the work we have done—and knowing that it can be sustained permanently is great."

Mannar recently retired from MI, but continues to work towards the elimination of micronutrient deficiencies through a range of food-based solutions driven by cutting-edge technologies. He serves as an adjunct professor at the University of Toronto and is a visiting faculty member at Cornell University. His achievements on behalf of humanity were honored with an appointment as Officer of the Order of Canada, one of the country's highest civilian honors. He says he was able to embark on such a career thanks to the valuable chemical engineering principles and lessons he learned at McCormick.

"McCormick provided me with the foundation for all of my work," he says. "In most of the courses, there were no ready-made answers to any of the questions. My engineering education forced me to think on my own and gave me an ability to analyze problems at a broad level."

He hopes fellow engineers will also apply what they know to help solve some of the world's biggest humanitarian issues.

"I encourage engineers to get more involved in problems affecting human development," he says. "My career is one example; there are many other areas where engineers can contribute. I think the application of engineering principles is absolutely key in solving many of the world's problems, and I feel that engineers have a great role to play."

SARA LANGEN