From: Bill and Sarah Donaldson <sarahbill23@hotmail.com>
Sent: Tuesday, October 3, 2023 8:38:26 PM
To: Nitya Rao (DEV - Staff) <N.Rao@uea.ac.uk>
Subject: Obituary

Nitya,
This is the obituary from the Telegraph of amazing MS. Sorry the picture can't be displayed.
Sarah

MS Swaminathan, father of India's 'green revolution' who saved millions from famine – obituary

His new wheat varieties enabled Indian farmers to increase annual yields from 12 million tons in the 1960s to 120 million tons today

By Telegraph Obituaries 29 September 2023 • 11:46am

Professor MS Swaminathan, who has died aged 98, was the world's leading agricultural scientist and the "father" of India's "green revolution" of the late 1960s which prevented millions of people suffering food shortages and famine.

In the early years of the decade, India grew some 12 million tons of wheat every year. Starvation was rampant and the country imported much of its food. Swaminathan, an agricultural geneticist, developed new dwarf high-yield wheat varieties that enabled the country to triple its production, turning India from being the world's largest importer of food grains to a net exporter. Today, India grows some 120 million tons of wheat.

He continued his career in pure biotech research, but in later life began to question some of the principles of intensive farming practices on which the green revolution had been based. While the population of India almost doubled after independence, partly as a result of over-intensification half of the country's cultivable land became ecologically degraded; grain production began to decline and from the late 1980s farmers, encouraged by a government which had embraced globalisation, turned to cash crops and away from the traditional staples that make up the bulk of the food eaten by the poorest.

Swaminathan became an advocate for the Gandhian concept of production by the masses and called for an "Ever-green Revolution" which would keep people on the land while avoiding further ecological damage. The key to this, he argued, was GM technology allied to organic farming techniques, although he was vehemently opposed to the corporate GM model promoted by companies such as Monsanto. GM technology, he argued, should be publicly funded by governments and should be made freely available to producers.

The second of four sons of a surgeon, Monkombu Sambasivan Swaminathan was born on August 7 1925 into a Tamil family at Kumbakonam, Madras State (now Tamil Nadu), in what was then British-ruled India. His father died unexpectedly when he was 11 and during his teens he was much influenced by his uncle, a teacher and scholar of English literature, Tamil and Sanskrit at Madras University.

Swaminathan was educated at the Little Flower Catholic High School in Kumbakonam and at Maharajas College in Trivandrum where he took a degree in zoology. As wartime food shortages began to bite and famine struck Bengal in 1942 he decided to switch to agriculture and enrolled at Coimbatore Agricultural College where he took another degree in Agricultural Science.

In 1947, the year of Indian independence, he moved to the Indian Agricultural Research Institute in New Delhi as a post-graduate student in genetics and plant breeding and obtained a post-graduate degree in Cytogenetics in 1949.

Because Swaminathan's parents had planned a government career for him, he took and passed the Indian government's civil service examinations. He was offered a management job in the police, but at the same time, he heard that he had won a Unesco fellowship to continue his education overseas. He spent a year studying plant genetics at the University of Wageningen in the Netherlands and then moved on to Cambridge University in England, where he earned a doctorate in 1952 on the genetic structures of certain potato species.

He then accepted a post-doctoral research post at the University of Wisconsin, where he helped to establish a potato research station and gained practical experience of plant hybridisation.

He was offered a professorship at the University but chose to return to India and began his career in 1954 as assistant botanist at the Central Rice Research Institute in the Indian state of Orissa, where he experimented with crossing rice varieties in order to create a new strain with increased yields. Within six months he had moved to New Delhi and to the Indian Agricultural Research Institute where he became chief cytogeneticist in 1956, head of the botany division in 1961, and director of the division in 1966.

It was here that he began to experiment with cross-breeding native Indian wheat varieties with Japanese strains and with a dwarf wheat plant developed in Mexico by the Nobel prize-winning American agricultural researcher Norman Borlaug – work that would underpin the Green Revolution. Scientists under Swaminathan's direction at the IARI made similar breakthroughs with rice. He also helped assemble a stock of 7,000 rice strains from northeast India that became something of a genetic gold mine and eventually grew to include 75,000 different varieties.

Swaminathan was not just a brilliant scientist but a gifted communicator as well, and in the late 1960s he took steps to spread the message by setting up a network of 2,000 model farms that showed local farmers the possibilities of the new plant varieties.

From 1970 to 1980 he served as Director General of the Indian Council of Agricultural Research and during the decade he was aided in his efforts to improve Indian farming by the country's prime minister, Indira Gandhi, who gave him free rein to reform India's agricultural bureaucracy and in 1979 named him principal secretary of India's Ministry of Agriculture and Irrigation.