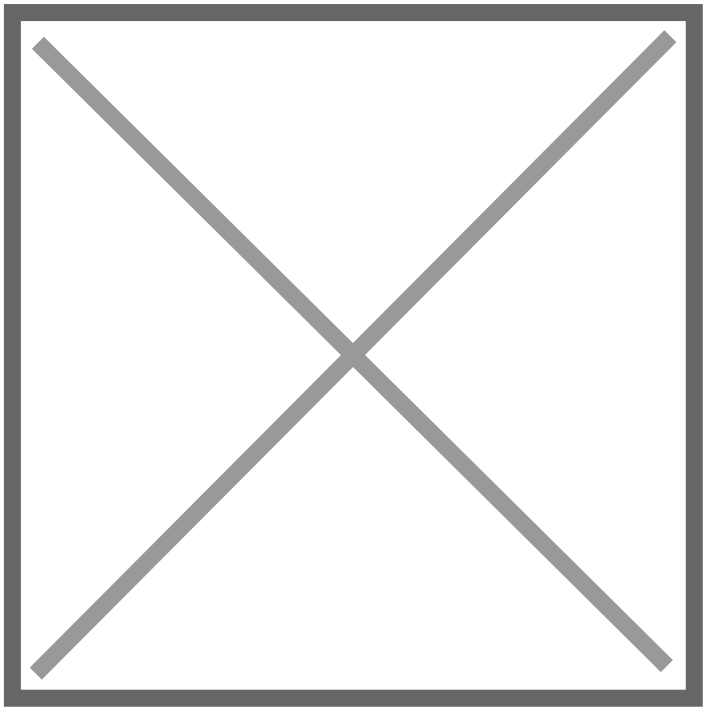


BioSpectrum Awards 2003 - Life Time Achievement Award

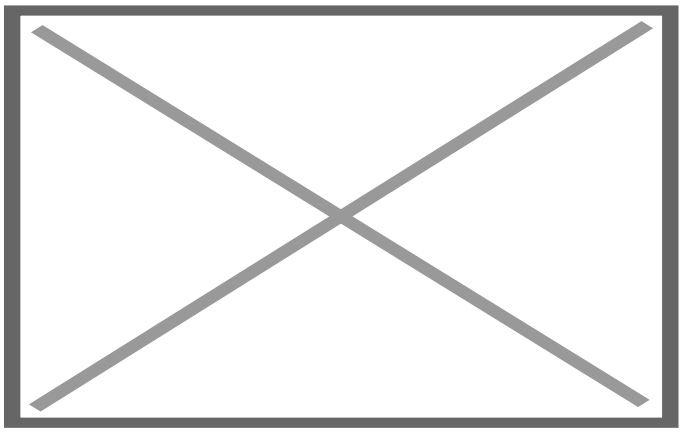
12 December 2003 | News



Life Time Achievement

Dr MS Swaminathan

Working for a Hunger-free, Bio-happy World



The Life and Works of Dr MS Swaminathan, described as the Modern Gandhi

It was a pleasant evening in the first week of January 1989 in the temple city of Madurai in southern Tamil Nadu. Most of India's leading scientists were mingling with a large group of young scientists and research students on the lawns of Madurai Kamaraj University. A large group of young scholars had gathered around one well-known agricultural scientist and every word of his was being lapped up by the eager audience.

Out of the blue, one of the young scholars there shot this question at the scientist: What is your name, sir?

There was a stunned silence all around. Every one expected a sharp rebuke from this world famous scientist. But there was a surprise.

The scientist replied: My name is M S Swaminathan. Aren't you Rajeev, asked the scientist in a soft tone.

Yes sir, replied the young scientist.

Congratulations once again, said the famous scientist, for getting the Young Scientist Award.

(Earlier in the day, Dr Swaminathan had presented Rajeev, along with 35 others the Young Scientist Award of the Indian Science Congress Association. He had presided over the function, which was the 76th annual gathering of Indian scientists).

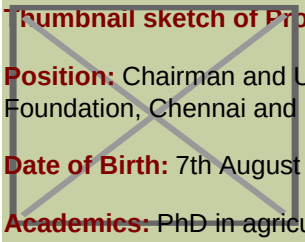
But young Rajeev did not get the message even after that. He continued: What is your area of specialization? (A question researchers ask each other frequently).

Dr Swaminathan continued in the same soft-spoken voice: I work on wheat and rice. I had started work from potato. There was not a trace of irritation as he continued for some more time, answering every question thrown at him by the ignorant young scientist for the next 10 minutes.

That in a way sums up the life and personality of Monkombu Sambasivan Swaminathan, widely acclaimed as the Father of India's Green Revolution in agriculture which transformed the 'nation with a begging bowl for food' to one of the world's leading exporter of foodgrains. In the past 78 years, not one of the millions of people who have interacted with him all over the world have ever seen anything but a smiling face on one of the humblest human being of our time. He has been hailed by the Time magazine as one of the 20 most influential humans of the 20th century. There were two other Indians on the Time list in 2000: Mahatma Gandhi and Nobel laureate Rabindranath Tagore.

Simplicity is the hallmark of this great scientist. Even at 78, he keeps a punishing schedule, traveling around the world and remote corners of the country with his mission to make the world 'hunger-free' by 2007 and usher in an environmentally sustainable mode of development. He personally handles hundreds of emails received at home and office. Answers all the phone calls himself when he is in his chairman's room at the well-known MS Swaminathan Research Foundation, which he started with the $ 200,000 he received for being the first recipient of the World Food Prize started by the Food and Agricultural Organization (FAO) of the United Nations. And he makes spellbinding power point presentations in some of the hallowed portals of the world and the country, all by himself, about his latest mission.

Thumbnail sketch of Prof. MS Swaminathan



Position: Chairman and UNESCO Chair in Ecotechnology, MS Swaminathan Research Foundation, Chennai and Chairman, Pugwash Conferences on Science and World Affairs

Date of Birth: 7th August 1925

Academics: PhD in agriculture from University of Cambridge (1952), BSc from Travancore University (1944) and in agriculture from Coimbatore Agriculture College (1947). Schooling at Native High School and Little Flower High School, Kumbakonam, Tamil Nadu.

Family: Second of four children of Monkombu Krishna Sambasivan and Parvathi Thangammal. Wife is Mina Swaminathan, educationist. Have three daughtersÃ¢â?¬â? Sowmya, a pediatrician at Tuberculosis Research Center, Chennai and her husband Ajit Yadav who is the well-known orthopedic surgeon at Apollo Hospital; Madhura, second daughter was India's first woman Rhodes Scholar and is now an economist and works at Indian Statistical Institute, Kolkata with husband VK Ramachandran, also an economic professor. Third daughter Nitya, is doctorate from University of East Anglia, UK and is married to rural development expert Sudhir Rao. Swaminathans have five grandchildren.

Official Positions held: Director-general of ICAR and Principal Secretary, Government of India till 1981, DG of International Rice Research Institute, Manila (1982-88), President of IUCN (1984-90) and continues as UNESCO-Cousteau Professor in Ecotechnology at MSSRF, Chennai, and Chairman, Pugwash Conferences on Science and World Affairs.

Other hats: Called the Father of Green Revolution and named as one of the 20 most influential persons of the 20th century by Time magazine. Now called the Father of Ecotechnology

Awards & Accolades: Till December 2003, Swaminathan has been awarded 45 honorary doctorate from universities worldwide including the oldest one, University of Bologna, Italy, and others such as University of Bonn, Soka University, Japan, University of Massachusetts, US. Has been awarded Padma Shri (1967), Padma Bhushan (1972) and Padma Vibushan (1989) by Indian Government. Has been given at least 25 world famous awards so far including the Ramon Magsaysay Award (1971), Mendel Memorial Medal (1965), Albert Einstein World Science Award (1986), World Food Prize (1987) and the Economic Times Awards for Corporate Excellence (2002)

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He travels alone, without any personal assistant to keep tab of the numerous meetings he had agreed to. Just a look at his current schedule. On 26th November which was a national holiday due to Ramzan, Dr Swaminathan inaugurated and delivered the keynote address at the 10th anniversary celebrations of New Delhi-based NGO, Gene Campaign. He fielded numerous questions from over 20 journalists present there and gave half-a-dozen interviews to television crews, which captured every moment of his public appearance. After a frugal meal with the participants, he was at Krishi Bhavan (headquarters of the Agriculture Ministry) to chair a meeting of the National Task Force on Agriculture. Minutes after the meeting, he was at Gene Campaign director Suman Sahai's farm house on New Delhi's outskirts, listening to a soulful hindustani music rendition. He then traveled to the southwestern city of Manipal in Karnataka to attend the wedding of a friend's son, after changing two planes and taking the road to reach this remote town. He was barely at his Chennai home for the weekend before he set off early on December 1 morning to Namakkal, a town in the interior part of central Tamil Nadu to inaugurate a farmers' convention. Back in Chennai for a day or so, he is off to Geneva to attend a series of four lectures at the UN-organized summit on Information Society. Immediately on his return, he will be in Hyderabad to organize a public hearing of the views of all state governments for the Agriculture Task Force. From Hyderabad, he will travel to the eastern metropolis of Kolkata to chair a World Bank meeting on fisheries development.

"I am trying to cut down my travel. But I can't say no to so many people who want to share their remarkable contributions with me," Swaminathan confessed on a late Sunday evening sitting with the BioSpectrum team at his Chennai home.

The enthusiasm with which he talks about his current mission is infectious. India has come a long way from the time he helped to usher in the Green Revolution in the 1960 by introducing the high-yielding, dwarf varieties of wheat brought from his Nobel laureate friend Norman Borlaug. Today India produces close to 210 million tonnes of foodgrains from barely 50 million tonnes in 1970, with a lot of surplus to export. "We can't sit back and relax. We must now make more progress in agriculture on three fronts: productivity, quality and sustainability," advised the man describer by his Hungarian biographer Andras Erdelyi as 'The Man Who Harvests Sunshine'. Erdelyi's famous book which was released in 2002 and is now being translated into several world languages is titled, The Modern Gandhi: M S Swaminathan.

He has shared his thoughts on wide-ranging topics close to his heart to two other authors in the last few years. M S Swaminathan: One man's quest for a hunger-free world by Chennai-based author Gita Gopalakrishnan and Scientist and Humanist by RD Iyer for Bharatiya Viday Bhavan stand out.

Yet another tribute to him is the booklet, M S Swaminathan, the Face of Indian Agriculture brought out by his former colleagues through the Retired ICAR Employees Association, Hyderabad. He himself has shared his vision through three other volumes, Science and Agriculture: M S Swaminathan and the Movement for Self-reliance; From Rio de Janeiro to Johannesburg; and A Century of Hope: Harmony With Nature and Freedom from Hunger. Besides, he shares his thoughts regularly through the columns of the leading national daily, The Hindu.

Quiet beginnings

All the fame and success did not come easy for the global scientist whose family hailed from the backwaters of Kerala state. To be precise Monkombu village, in the Alapuzha district, is in the Kuttanad region or the "rice bowl" of Kerala. His father Monkombu Krishna Sambasivan, a trained medical practitioner, moved to Kumbakonam in Tamil Nadu for greener pastures. Swaminathan was born the second of the four children of MK Sambasivan and Parvathi Thangammal (two brothers and two sisters) on 7th August 1925. After his father's early death at the age of 39, the family took shelter in his father's elder brother's house back in Kerala. The big joint family lived together with modest means. Young Swaminathan was fascinated by the large-scale rice cultivation in the Kuttanad region and decided to pursue his studies in this field. He took a BSc degree in agriculture (1947) from Coimbatore College of Agriculture and completed post gradaute diploma in agriculture from the Indian Agriculture Research Institute (IARI), New Delhi in 1950.

There are still some twists and turns in the saga of this agricultural scientist who almost gave up this field. "I was advised by my father's friend, a senior official in the Indian government, that there was no future in agriculture," he recalled. So Swaminathan appeared for the national civil service examination and he was selected for the Indian Police Service. Fortunately, around the same time he had also got a UNESCO fellowship for advanced study at Wagenignen University in The Netherlands. The agriculturist in him won over and he opted for the research career and went on to complete doctoral studies at Cambridge University in 1952. At Wageningen, he developed techniques to transfer genes from a number of wild varieties of Solanum plant and impart resistance to frost and nematodes in the widely cultivated potato crop (Solanum tuberosum). At Cambridge, he continued the work under the guidance of Dr HW Howard and earned a PhD for his thesis titled, "Species differentiation and the nature of polyploidy in certain species of the genus Solanum-section Tuberarium". Swaminathan also met his future wife Mina Bhoothalingam, a student of education and daughter of a senior Indian bureaucrat there. They became friends at Cambridge. And in 1955, they got married at a ceremony arranged by both families. Mina Swaminathan continues her career as a well-known educationist in India.

Ideal teacher

"Swaminathan has symbolized to me the definition of an ideal teacher and his teaching prowess goes far beyond classroom delivery. Any occasion of spending time with him has been an opportunity of education; and education delivered in a most interesting and unobstrusive way," says Dr VL Chopra, a former student of Swaminathan at IARI and former chief of ICAR and currently President of National Academy of Agricultural Sciences, New Delhi.

Great diplomat

"Swaminathan combines scientific and administrative capacities with great diplomacy. He was always very kind to his students and colleagues. He helped them in every possible way," remarked AT Natarajan, Emeritus Professor, Leiden University Medical Center, Ledien, Netherlands and Swaminathan's first doctoral research student.

Human virtues

"What have you learnt from MS Swaminathan?Ã¢â?¬Â¦ You were his associate for the longest period," some one asked Dr EA Siddiq, now Distinguished Fellow, Center for DNA Finger Printing and Diagnostics, Hyderabad. His reply was simple and spontaneous: "Human virtues, science and the courage to speak up the science I learnt from him."

A living legend

" Dr M S SwaminathanÃ¢â?¬Â¦ is a living legend. His contributions to agricultural scienceÃ¢â?¬Â¦have made an indelible mark on food production in India and elsewhere in the developing world. By any standards he will go into the annals of history as a world scientist of rare distinction," said Javier Perez de Cuellar, Secretary General, United Nations in 1987.

Brilliant leader

"Ã¢â?¬Â¦You have taught nations how to be self sufficient in their need for food just as you have taught farmers how to develop and enhance the productivity of their land. Your brilliant leadership has established a goal for the new millenniumÃ¢â?¬â?•a hunger-free world, an international structure of cooperation among nations, a determination to use the miraculous technology of our times to help those in need, for dynamism and compassion that has given new meaning to Franklin D Roosevelt's commitment to a better world where all nations will understand and strive for Freedom from Want," says the citation of the Franklin D Roosevelt Four Freedoms Medal presented to him in 2000.

Helping hand

The citation of the UNESCO Gandhi Gold Medal

Fate tempted him away from core agriculture yet again a few years later. He had moved to the University of Wisconsin, Madison in the US as an assistant professor. Because of his expertise in potato, a local industrialist gave Swaminathan a tempting offer to become his potato chip factory's chief scientist at $ 14,000 a year to develop new varieties of the crop. He was barely getting $ 3,000 a year at the University. But the urge to serve the country brought him back to India in 1954.

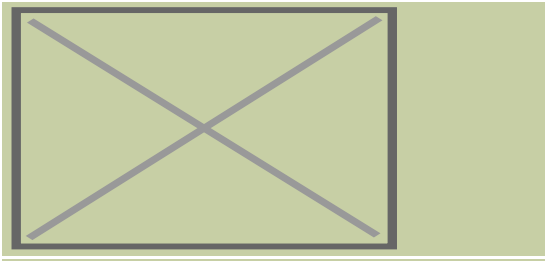
" I was thinking a lot about the famine in India and the dwindling supplies of imported rice after Japan occupied Myanmar (then known as Burma). What really hurt me was the restrictions on the use of rice. When my elder brother got married in 1947, there was a food control order. In a marriage, food could be served to a maximum of 30 people only. And there was a policeman waiting outside to count the plantain leaves on which the feast was served," Swaminathan recalled.

Back in India, he did not get any job immediately. Later, one of his former teachers Parthasarathy gave him a temporary job at the Rice Research Institute, Cuttack, Orissa. Swaminathan had to give up his work on potato and work on rice instead. After a few years, he got a permanent job at his alma mater, IARI in the biology division, which eventually became the famous genetics department and formed the backbone of the Green Revolution.

Ushering the Green Revolution

Volumes have been written about the series of actions that finally led to the remaking of Indian agriculture.

Even though wheat had been cultivated in the Indian continent for over 4,000 years, the production was very low. In 1947, the wheat production was just 7 million tonnes and the average productivity was barely 0.7 tonnes per hectare. India was facing widespread famine conditions in the 1960s and was heavily dependent on donations of wheat supplies offered by the US government under the PL-480 program. The low productivity was due to the wheat varieties widely cultivated in the country. These had long stalks which would bend and break due to the weight of the pods. This resulted in less photosynthesis and hence low yields. Also it took up more space and the number of plants per unit area was small.



A section of the MS Swaminathan Research Foundation, Chennai.

Swaminathan was thinking of ways to improve the yield. "I remembered a research paper by Dr Orville Vogel which I had read in 1958. Vogel had experimented on so-called Norin 10 dwarfing genes in Washington State in the US. One Dr SD Salmon, who had served in the US Army, had brought some wheat plants from Japan and the Norin 10 genes in it found its way to Vogel's lab," Swaminathan reminisced. From Norin 10, Vogel had developed a semi-dwarf variety, Gaines, which yielded nearly 15 tonnes per hectare. However, Gaines was a winter wheat which grew well only in the long sunshine days found in the upper Northern Hemisphere. In India, wheat was mainly sown in spring which got less sunshine. Swaminathan then heard about another American, Dr Norman Borlaug, who had developed a spring variety wheat and was working in Mexico.

"I contacted Borlaug who was willing to give some of these varieties for growing in India. He also wanted to visit the field where it was grown. I was a junior scientist and it took nearly 18 months to convince bureaucrats in the Indian governments to get the permission to invite Borlaug to India," Swaminathan observed. The government process hasn't changed much even three decades later.

Rest is history. Borlaug finally reached India in March 1963. The dwarfing genes were transferred to three wheat varietiesÃ¢â?¬â?•Sonora 63, Sonora 64 and Lerma Rojo 64 A. The varieties showed good results. Despite opposition from the system and colleagues, Swaminathan demonstrated the new varieties in some 150 experimental fields across the country. With good fertilizer inputs, the yield gains were enormous, at least four to five times. He was supported fully by the then Agriculture Minister C Subramanian. The national wheat production dramatically increased from 12 million tonnes to 17 million tonnes in 1968. The varieties caught like wild fire. Today, the nation's annual production is over 80 million tonnes. William Gaud of the US Department of Agriculture coined the term 'Green Revolution' to describe the unprecedented quantum jump in food production.

Later, in 1970 when the phenomenal increase in petroleum products led to the hikes in the costs of fertilizers, a petroleum byproduct, and raised questions over the sustainability of Indian agriculture. "We have withstood these shocks very well," said Swaminathan. There have been many criticisms about the high cost and input based modern agriculture induced by the Green Revolution. Swaminathan said that he had warned about the indiscriminate use of these inputs to achieve unprecedented yields and has since been a great votary of sustainable modes of agriculture production. This is one of the missions of the MSSRF in the last decade.

Swaminathan did not rest on his laurel at home. In 1981, he moved to the famous International Rice Research Institute (IRRI) in Manila, Philippines, as its director-general and pioneered the setting up of networks of agriculture research and extension services in a large number of developing countries. These networks in countries such as China, Egypt, Iran, Kampuchea, Korea, Myanmar, Nigeria, Pakistan, Philippines, Sri Lanka, Tanzania, Thailand, Vietnam and more owe it to his foresight. Swaminathan's global role has been recognized by the bestowing of at least 24 most prestigious awards by foreign governments and institutions till this year. Some of these prestigious ones include the Commandeur of the Order of the Golden Ark of The Netherlands (1990), the Ordre du Merite Agricole by France, the Unesco Gandhi Gold Medal, the Franklin D Roosvelt Four Freedom Award.

He carries on with his work through MSSRF, situated in the southern suburbs of Chennai. The Foundation takes up activities, which works towards pro-nature, pro-poor, pro-women, pro-employment programs. The Foundation is trying to integrate the modern technologies of biotechnology and information technology to usher sustainable development in rural areas of the country.

Swaminathan has been instrumental in the evolution of the International Convention on Biological Diversity and handled the much-acclaimed Rio de Janeiro Earth Summit and its follow up conference on sustainable development in Johannesburg, South Africa in September 2002. He has headed prestigious international organizations like the International Union for Conservation of Nature (IUCN) and is currently the head of the Pugwash Conferences on Science and World Affairs. Pugwash conference is an influential international group, previously headed by giants like Albert Einstein and Bertrand Russel. It seeks to eliminate nuclear weapons from the world.

Swaminathan's current quest is for a new global ecological order. "A global ecological order involves harmony with nature. Harmony with nature will not be possible unless we achieve harmony with one another. How can we value and protect biological diversity if we do not nurture an understanding and love of human diversity in terms of gender, religion, language, ethnicity and political belief?" Swaminathan wrote in the afterword to Gita Gopalakrishnan's book on him.

These words continue to ring every time he ascend the podiums in numerous meetings around the world and also in the villages and towns which he continues to visit regularly in carrying forward the message. BioSpectrum has actually been honored by Swaminathan's unconditional acceptance of the first Life Time Achievement Award. And we only hope that two other awards, Bharat Ratna by the Indian government and the Nobel Prize for Peace will add lustre and the selection committees honor themselves by bestowing these on the Man Who Harvests Sunshine.

N Suresh and Nisha Kurian (CyberMedia News Service)

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