



## Dr. M. S. Swaminathan An Undying Spirit of Service

**M**onkombu Sambasivan Swaminathan was born into a family of successful agriculturalists in the temple town of Kumbakonam in the Thanjavur district of Tamil Nadu on August 7, 1925. His paternal grandfather, Krishnaiyer, also known as 'Kuttyappa', was a progressive thinker and one of the pioneers in Kuttanad paddy cultivation, as far back as in 1895. He was thus responsible for laying a strong foundation for the family's pursuit of its livelihood in farming.

The family was well-known and respected in the area. The King of Ambalapuzha had himself gifted a Travellers' Bungalow called,



'Kottaram' at Monkombu to Kuttyappa's elder brother, out of regard for his piousness. The building became the *tharavadu*, or ancestral home of the family.



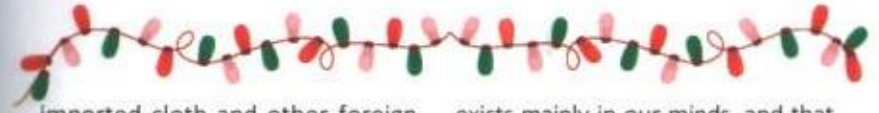
An area called 'Sreemoolam Kayal' was given to Krishnaiyer in 1895 by Maharaja Srimoolam Tirunal Ramavarma for reclamation. Initially his attempts at paddy cultivation there failed. However, the third crop he planted compensated for the earlier losses and he gained more than thrice the yield in comparison to what was expected.

Kuttyappa's wife, Maragathambal, was his staunch supporter. Popularly known as Paatty Amma, she belonged to the 'Kasthoorimadom' family of Vaikom in Kottayam district. Sadly, Kuttyappa succumbed to an attack of smallpox while still in his fifties. The reins of the family were passed on to their second son, M.K. Ananthasiva Iyer, who continued the family tradition of hard work and smart thinking.

The ancestors of Dr. Swaminathan were also pioneers in other farming pursuits. His paternal uncles, M.K. Venkatachala Sarma and M.K. Ananthasiva Iyer both grew rubber, coffee, cardamom and black pepper in Nedumangad and Wayanad, respectively. M.K. Sambasivan, Prof. M.S. Swaminathan's father, was an eminent civil surgeon, settled in Kumbakonam to practice, after

graduating in general medicine from the Madras Medical College. He also had a strong sense of social responsibility and so he also served as the Municipal Chairman of Kumbakonam town. He became quite popular and gained much more respect when he succeeded in tackling a serious public health problem. At that time, Kumbakonam was notorious for its mosquitoes, which caused filariasis or elephantiasis to be endemic there. The disease was known as *mandhu* in Malayalam and *aanaikkaal* in Tamil, due to the abnormal swelling or oedema of the legs below the knees. In a short period, Dr. Sambasivan, through his dedicated service, scientific techniques, and social action methods, managed to eradicate the notorious *Culex* species of mosquitoes which transmit the micro-nematode that caused the disease.

Dr. Sambasivan was also a staunch Congressman, who actively participated in Gandhiji's *swadeshi* movement. Dr. Swaminathan vividly remembers being taken as a 10-year-old schoolboy, to a rally where cloth manufactured in Britain was burnt in public bonfires, and Gandhiji exhorted people to end their dependence on



imported cloth and other foreign goods. It was a lesson the young boy would never forget. Memories of Gandhiji's door-to-door campaign to collect excess gold ornaments left an indelible impression on young Swaminathan's mind. His own gold chain was given away to be used for the welfare of the poorest and downtrodden people of India. He internalised the idea that whatever was surplus in relation to one's genuine requirements, should be given away for better causes.

Mahatma Gandhi stayed in the family's Kumbakonam house twice when Swaminathan was in his early teens. That was the time when Gandhiji pleaded for equal status for the so-called 'untouchable Harijans'—Dalits—and for the opening of temples to them as well. Gandhiji identified himself with the poor, exhorting them not to lose their self-respect and dignity. This early exposure to Gandhian thought and ideals, had a lifelong impact on Dr. Swaminathan. Not surprisingly, his father had a wide circle of friends and admirers, and he is still remembered in Kumbakonam, where the central municipal bus stand has been named after him. Dr. Swaminathan recalls, "I learnt from my father that the word 'impossible'

exists mainly in our minds, and that given the requisite will and effort, great tasks can be accomplished."

The family of Dr. Swaminathan's mother, Smt. Parvathi Thangammal hailed from the erstwhile princely state of Pudukkottai, now in Ramanathapuram district. Her father, also named Swaminathan, but with the initial K, was an ardent nationalist, a Gandhian, and a well-known legal figure. He was the state Vakil and Public Prosecutor, an elected member of the legislative council, a Municipal Councillor, and President of the District Co-operative Bank. Dr. Swaminathan often says that his mother had a tremendous influence on his development as a human being. He even attributes his professional qualities of social concern, and compassion for everyone, regardless of age, gender, caste, class, and religion, to her. He recalls that her influence was, 'more through non-verbal communication rather than mere oral advice. She was the embodiment of all that is good and great in Indian womanhood—unilateral love, patience, hard work, and taking pain and pleasure with equanimity'. Truly speaking, he indeed inherited her great humility; gentle smile, and her way of speaking softly.

Tragedy struck the family, when, on October 12, 1936, Dr. Sambasivan suddenly died, aged only 36. A victim of infective hepatitis, he breathed his last in a Chennai hospital. He had been at the peak of his professional career. Swaminathan was then only 11 years old. After their father's demise, Swaminathan and his two brothers, M.S. Krishnamurthy the elder, and M.S. Ramdas, the younger, and their only sister, Lakshmi, came under the care of their paternal uncle, M.K. Narayanaswamy, known to the children as Nanu Kunjappa. He had been living with the family in Kumbakonam already. He tried valiantly to fill the void left by Dr. Sambasivan's untimely death.

Dr. Swaminathan, fondly called Ambi in family circles, received his early school education at the Native High School and later at the Catholic Little Flower High School in Kumbakonam, where he earned his SSLC at 15 years of age in 1940 with a first class. In the same year he and his elder brother M.S. Krishnamurthy then 17, moved to Trivandrum, to study at the University College. For this period the boys were under the guardianship of their father's elder

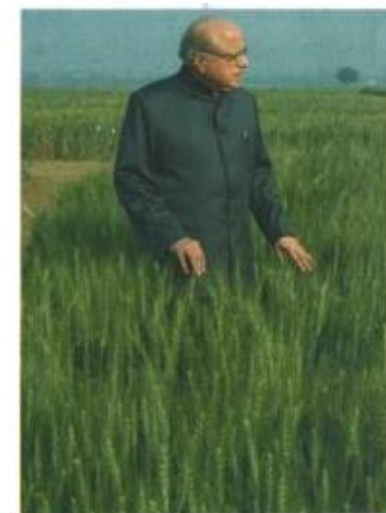
brother, M.K. Neelakanta Iyer, then the Chief Secretary—Rajya Seva Praveena—of the erstwhile Travancore state. Their younger brother, M.S. Ramdas, studied in Madras, as the ward of their maternal uncle, K. Swaminathan, the Gandhian, who was a professor of English at Presidency College, Madras. Dr. Swaminathan mentions this family support system as the 'greatest blessing of the Hindu joint-family system'.

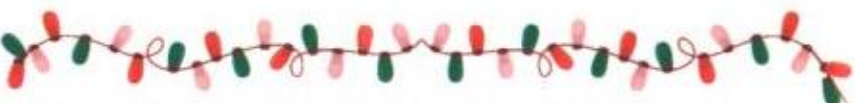
As a college student, Swaminathan used to spend his holidays in the rice bowls of Kerala and Tamil Nadu; he was struck by the paucity of grain yields and the poverty of the farmers. In contrast, he noticed that the rich planters growing plantation crops such as, coconut, coffee, tea, rubber, cocoa and cardamom, produced bumper crops and earned well in the same soil and climatic conditions. His observations awakened his interest in agricultural problems, and he read widely, discovering that yields in India were exceptionally low compared to those of developed countries like the USA, Japan, and Taiwan. The distressing stories of the Bengal famine of 1942-43, convinced him that he could be of greatest service to independent

India, only by specialising in crop improvement research through the application of genetics and plant breeding technologies. He later said, "I firmly believed that I had to serve my own nation. The interaction between heredity and environment fascinated me; hence, in 1944, I decided to pursue higher education in agricultural sciences, and since then I have developed, what my wife, Mina calls, 'a single-track mind', concerned only with problems of improving agricultural productivity and agrarian prosperity".

After taking a first class BSc. degree in Zoology from University College, Trivandrum in 1944, Dr. Swaminathan obtained another first class BSc. degree, this time in Agriculture in 1947 from the well-known Agricultural College and Research Institute at Coimbatore, Tamil Nadu, winning many gold medals for proficiency in studies. He went on to do his postgraduate studies and in the meantime, he had also qualified in the all-India competitive combined civil services examination conducted by the Union Public Service Commission and got selected for the Indian Police Service in 1949. His uncertainty

about being able to build a career in Agriculture made him write this examination. He almost became a police officer! However, the timely offer of a UNESCO Research Fellowship to study Genetics in Netherlands changed his career path permanently. In spite of the advice of seniors that Agriculture did not offer much scope for a successful professional future, Dr. Swaminathan accepted the UNESCO fellowship, to continue his doctoral research work on the potato, at the Department of Genetics, Netherlands Agricultural University at Wageningen. After a year's study there, he moved to England to work at the Plant Breeding Institute of Cambridge





University's School of Agriculture in Trumpington. There, he also earned his PhD (Cantab) degree in 1952. After gaining a lot of research experience, he finally returned to his homeland in February, 1954.


If he had wanted to he could have stayed on in the USA, as he had been offered a regular teaching-cum-research professorship at the prestigious University of Wisconsin. His priorities in his own words were 'I asked myself, "Why did I study Genetics abroad?" It was to produce enough food in India. So, I came back'. At that time, jobs related to agricultural research were few and far between in India. Dr. Swaminathan could only find a temporary position as Assistant Botanist at the Central Rice Research Institute, Cuttack, Orissa, in the FAO-sponsored scheme on, the '*indica-japonica*' rice hybridization programme to breed fertilizer-responsive dwarf hybrids of rice', in April 1954.

Later he went on to join the IARI, New Delhi as an Assistant Cytogeneticist at the Bombay Division and gradually climbed up the career ladder to become the Director there.

The most significant event during his tenure at IARI was the

birth of the 'Wheat Revolution' during 1963-65, culminating in a quantum jump in wheat production in 1968, which catapulted IARI into the position of a leading world centre of agricultural research and education. 'The ultimate aim of all agricultural research is to bring the results of research within the reach of the cultivator', he said.

By this time, Dr. Swaminathan had become a leading figure, not only in India but in the entire world. He won many laurels, beginning with the prestigious Shanti Swarup Bhatnagar Award of CSIR for 1961, for his outstanding research work in Biological Sciences. He went on to receive the Mendel Memorial Medal of the Czechoslovak Academy of Sciences in 1965, for his significant contributions to Plant Genetics, the Birbal Sahni Memorial Medal of the Indian Botanical Society in 1966 for his outstanding work in Applied Botany, and the Padma Shri in 1967, conferred on him by the President of India. To cap it all, Dr. Swaminathan was awarded the much-valued Ramon Magsaysay Award for Community Leadership in August 1971, in recognition of his outstanding contributions as 'Scientist, Educator of both students and farmers, and



Administrator, towards generating a new confidence in India's agricultural capability.'

In January 1972 Dr. Swaminathan succeeded his teacher and mentor, Dr B.P. Pal, FRS, as the Director-General, ICAR and secretary, Department of Agricultural Research and Education (DARE), under the Union Ministry of Agriculture, in which capacity he continued till March 1979. Subsequently, he was elevated to the rank of Principal Secretary to the Ministry of Agriculture and Irrigation, becoming perhaps the only non-IAS technocrat till date, to hold such a high rank in the Union Government. Dr. Swaminathan made a landmark contribution at the ministry with his strategy for the management of the disastrous drought of 1979, and the development of a Scientific Monsoon Management Scheme and a Water Security System for India.

In March 1980, Prime Minister Indira Gandhi asked him to join the Planning Commission since she felt that *doers*, and not merely *thinkers*, should be involved in India's planning process. Dr. Swaminathan consented and served the Commission from April 1980 to April 1982, first as its Acting Deputy Chairman and later

as the Member-in-Charge of Agriculture, Rural Development, Science & Technology, Health, and Education & Employment.

Dr. Swaminathan introduced the following three unprecedented features in the Sixth Five Year Plan (1980-85) document:

- ◆ A chapter on, Women and Development.
- ◆ A chapter on, Environment and Development.
- ◆ A sub-chapter on, A New Deal for the Self-employed', under the chapter on Employment.

Thus, Dr. Swaminathan carved for himself a permanent place in the planning history of India, by introducing the gender, environmental, and self-employment dimensions to development.

In December 1981, Clarence Gray, the then chairman, board of trustees of the International Rice Research Institute (IRRI), Los Banos, in the Philippines, came to New Delhi, and conveyed to Dr. Swaminathan in person, the decision of the trustees to invite him to join as the Director-General of IRRI. Dr. Swaminathan knew IRRI well since he had earlier been the chairman of the first Quinquennial Review team of this Institute. He felt that the position would offer him an opportunity to

get back to working on a crop of fundamental importance to India's food security as well as that of the rest of Asia. It would also allow him to get to know India's Asian neighbours, particularly China, well. He, therefore, went to Prime Minister Indira Gandhi to seek her permission to leave government service. Dr. Swaminathan recalls that occasion thus:

'After hearing me out patiently on IRRRI and the offer she said,

"I fully appreciate your desire to get back to a research institute in agriculture, but you are indispensable".

'My response was, "Madam, after hearing what you said, I feel it is time for me to go."

'She looked surprised and



Dr. M S Swaminathan with Indira Gandhi

asked, "Why? Have I hurt you in any way? I sincerely feel you are indispensable".

'I replied, "I sincerely feel that one must leave when one is most wanted, and this is why I feel that this is the right time to help you and our country in a different capacity."

'The Prime Minister paused for a while, and remarked, "Yes indeed. You must leave when you are wanted, and not when people want you to leave. These are profound words, and you have my blessings."

Thus, in April 1982, Dr. Swaminathan took over as the Director-General of the International Rice Research Institute, the first Asian to occupy this prestigious chair, succeeding Dr. R.E Chandler. Apart from his scientific additions to the development of rice, his contributions to the research, training, and technology-transfer programmes of IRRRI have been phenomenal. He was instrumental in the expansion of IRRRI's capacity for 'upstream research' to bring the fruits of ongoing advances in science and technology to Asian rice-farmers.



Dr. Swaminathan with Nobel laureate Norman Borlaug

The highlight of his tenure at IRRRI was his being awarded the first World Food Prize on October 16, 1987, at the Smithsonian Institution in Washington, D.C., instituted by Dr. Norman E. Borlaug. This international award is considered equivalent to a Nobel prize in the field of food and agriculture. At that time, it carried the same cash award of USD 200,000. His universities also recognised Dr. Swaminathan's scientific genius and contributions. The University of Wisconsin conferred on him an Honorary Doctorate degree in 1983; and in 1988 so did the Netherlands Agricultural University.

On his return home from the Philippines early in 1988, Dr. Swaminathan immediately began his serious efforts to establish his own research centre at Madras, christened the 'M.S. Swaminathan Research Foundation', using the World Food Prize as starting money. For him that project represented the culmination of his mission to start an 'Institution without walls, to harness science and technology for an environmentally sustainable and socially equitable development, through a pro-nature, pro-poor and pro-women orientation to technology development and dissemination.' He described the MSSRF as 'an adventure in fostering a new social contract between science and society.'

The creation of this institution was also his fulfillment of the promise that he had given to Nobel laureate C.V. Raman in 1967. The two met when the great physicist was on his return trip from IIT, Kanpur, where he had delivered the convocation address that year. He stayed with Dr. Swaminathan in New Delhi at the IARI director's bungalow for two days, after delivering his historic lecture at the National Physical Laboratory auditorium.



In collaboration with scientist M.S. Swaminathan (second from right), Norman Borlaug (right) tested his varieties of rust-resilient wheat in India. The results led to rapid transformation in India's wheat production, which was named the Green Revolution.

Apart from a hugely successful career, Dr. Swaminathan had a happy family life. In April 1955 he married Mina Bhoothalingam, the only daughter of Sri S. Bhoothalingam, I.C.S., an eminent economist.

At a special lecture delivered on the occasion of the 75<sup>th</sup> anniversary of the Plant Breeding Institute, Trumpington, in 1985, Dr. Swaminathan spoke warmly about meeting his future wife as a doctoral student at Cambridge University: 'This has been another important blessing of my Cambridge days.'

Paying rich tribute to Mina as his principal guide and inspiration, Dr. Swaminathan once said: 'She has encouraged my

work at considerable sacrifice to her own professional and personal life. Mina is a person with a unique combination of qualities. Her sense of values and her conviction that the future of India depends upon the educational and nutritional security of children, have provided much of the stimulus for my work. Her humanism and dislike of material values have greatly strengthened my personal convictions and goals.'

Dr. Swaminathan and his wife are blessed with three fine daughters. Dr. Swaminathan says he is indebted to his three daughters for providing a window into the thought processes and aspirations of the post-



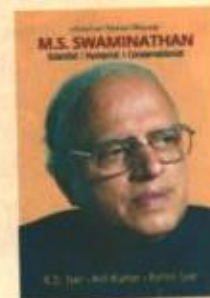
Dr Swaminathan with his wife, daughters and grandchildren.

independence generation. 'My daughters Soumya, Madhura and Nitya have helped me to remain young in my thinking and in bridging the generation gap

in terms of values and aspirations.'

*(Excerpts from the biography of Dr. M.S. Swaminathan, 1st edition of this book was published by the Bharatiya Vidya Bhavan.)*

<b>Title:</b>	M. S. Swaminathan: Scientist   Humanist   Conservationist (2 <sup>nd</sup> Edition)
<b>Author:</b>	R. D. Iyer, Anil Kumar and Rohini Iyer
<b>Published by:</b>	M. S. Swaminathan Research Foundation, Chennai with support of Association of Food Scientists & Technologists, CSIR-CFTRI Campus, Mysuru and Navasakti Trust, Thazhava, Kollam, Kerala
<b>Pages:</b>	388
<b>Price:</b>	1000/-





# Cleanliness of Mind Pathway to a Happy and Fulfilling Life

Prof. (Dr.) M. S. Swaminathan

It is a welcome sign that our country is aiming to clean itself. Of course the present goals of Swachh Bharat are largely sanitation and physical cleanliness. For a life of fulfilment, it is necessary not only to have physical cleanliness in our surroundings, but also mental and spiritual cleanliness.

Many components of cleanliness can be achieved if there is a clean mind. For example, when I was a young boy, the town I was born in, namely, Kumbakonam in Tamil Nadu, was full of filarial mosquitoes. Almost every third person had elephantiasis arising

from filariasis. My father felt it was not due to God's punishment or God's will that Kumbakonam had so many filarial cases, and a severe incidence of elephantiasis.

He, therefore, started a programme on clearing Kumbakonam of its mosquitoes, starting with the schools. The schools in every street worked with the Headmasters to identify areas where the mosquitoes were breeding. In other words, they tried to identify the hotspots for mosquito breeding.

The Headmaster was asked to take the students to those hotspots and explain to them how the

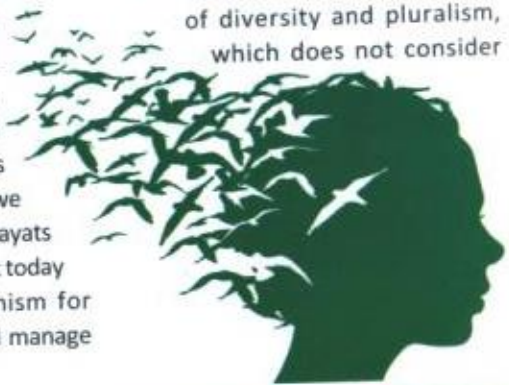
mosquito breeds. For example, the malarial mosquitoes breed in good water. This itself is not well known to most people. The teachers took the students to the breeding hotspots, explained to them the process through which filariasis and elephantiasis spread, and the possible solutions for stopping the breeding.

A simple solution was the application of some crude oil emulsion once a week, provided by the municipality, of which my father was the Chairman. Within a year, as a result of education and social mobilisation, mosquitoes were gone from the city of Kumbakonam.

This surprised many people, but my father believed that ultimately it is only education and social cooperation that will help, and not punishments and regulations alone. This is a philosophy which I found valid in life. The power of education, social mobilisation, and getting people together, is indeed great. Fortunately, we have institutions like panchayats or elected local government today which provide a mechanism for people to get together and manage common problems.

Clean India involving cleaning of the mind is the very foundation for a happy country. Wherever there is dirt, we will not be able to enjoy the desired quality of life. A clean mind is a must for a clean India. A clean mind is one which is not egoistic and over ambitious, which is not jealous, and which takes pride in cooperation, where people work and achieve together. It is like a football or cricket match, where all the players take pride if their side wins. It is a collective victory and not a pursuit for individual glory. The cleanliness of mind is fundamental to cleaning other areas, such as our atmosphere and living environment. Therefore, what we need in our education system is to begin with an emphasis on cleanliness of the mind and pride in collective endeavours.

What is cleanliness of mind? It means a mind which has tolerance of diversity and pluralism, which does not consider





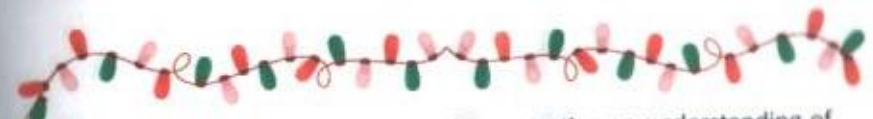
issues in terms of caste, community and religion, but which sees all human beings as equal. We all have the same number of chromosomes—46. Human beings share their genetic heritage and, therefore, we must ensure that everyone is considered part of the human family, and treated humanely, rather than belonging to particular sub-caste or group, which are all man-made divisions.

The seeds for a clean mind and thereby a clean life must be sown soon after birth. From the early days, children should thrive in living together and experience the joy of sharing both happiness and unhappiness. The joy of common living from a young age would ensure that children are devoid of unnecessary pride, self-praise and a feeling of being superior to others.

Ego and self-praise are the two great enemies of one's mental, professional and spiritual growth. Mahatma Gandhi taught us to be humble. He himself was extremely humble and always felt that humility is an important virtue for a human being. Even when fighting the British he was humble enough to admit mistakes. He never displayed the enormous social power he had. All the great saints

of our country like Ramana Maharishi promoted self-enquiry, but not self-praise. This is why I think we have to start from the home and go to the school and society as a whole. We are a democratic country and democracy offers an opportunity to everyone to speak their mind. We should express our views but finally in a democracy we have to abide by the decisions of the majority.

Unfortunately, we are yet to inculcate the true democratic spirit in our country, right from the panchayats upwards. It becomes a competition for limited resources and one finds a large number of complaints of scams and improper use of natural and other resources. I would, therefore, suggest that we should make a beginning in terms of the cleanliness of mind with a love of nature. In nature we find that all living beings exist in harmony. The web of life is a common one. If one part of the web is broken, the other parts too are broken. A clean mind will make a large difference in getting an understanding of unity in diversity. I hope that the Swachh Bharat will include not only physical cleanliness, but mental and spiritual cleanliness.



Spiritual cleanliness again offers an opportunity to appreciate all religions, all divergent viewpoints. Respect for life should include respect for gender. Men and women should be considered equal in all respects. There should be no gender discrimination, and female foeticide leading to unfavourable birth ratios should stop. We find that in some of our temples, women are not allowed. This is not conducive to promote the sense of unity in the family, happiness in life and a feeling among women that they are also normal human beings, with the same number of chromosomes as men, and hence deserving the same treatment as men.

We have miles and miles to go in these areas, but there is a great opportunity today since people have started realising that cleanliness is next to Godliness. But this can only be realised if the concept of cleanliness includes the mind and spiritual values. The value system is very important.

As I said earlier, great tasks considered to be impossible, like the eradication of mosquito from the city of Kumbakonam, was achieved by my father in one year

by promoting an understanding of where the mosquito breeds, that it is not a God-given problem, and can be solved through cooperation. It is this kind of accomplishment, which becomes possible with a clean mind, with a cooperative mind, with a mind which brings everybody together, rather than creating discord and dissent.

Today, because of climate change, large numbers of coral reefs are dying. We should take equal interest in the death of the coral reef as in the death of communities. We should try to prevent the coral reefs from getting bleached as a result of higher temperatures. This is a man-made problem, so solutions too have to be man-made. So let us give a wider interpretation to the meaning and content of Swachha Bharat to include the spiritual, mental and human dimensions of development.

Ego, selfishness and intolerance of diversity and pluralism are the major ingredients of an unclean mind. To succeed we must promote humility, love and understanding of diversity and pluralism and a frame of mind which understands the spirit of 'Vasudhaiva Kutumbakam'. ●

*The article has been reproduced from an earlier issue of Bhavan's Journal.*



# Empowering Women in Agriculture

Dr. Soumya Swaminathan

MSSRF chairperson and former WHO chief scientist Soumya Swaminathan reminisces her dad's influence on her—and humanity at large.

**Y**our appa changed our lives." Those voices of women farmers I met on Wednesday in a Villupuram village have been echoing in my mind. More than 90% of the farmers in that village are women. They were encouraged by my father to start a group for knowledge and resource sharing to increase production.

Empowering women in agriculture was one of his biggest passions, and he ensured gender was included as a chapter in the Sixth Planning Commission, along

with environment. He believed that when women were empowered with knowledge, they would care for crops without harming the environment and bulk up yields. A part of it was probably because of my mother Mina Swaminathan.

My sisters and I grew up watching him build a remarkable career in crop science and food production. He was our role model. My fascination, though, was more with humans than plants. While I joined the Armed Forces Medical College in Pune,



he was helping the country wipe out famine.

He was happy with my career choice probably because he knew that our paths would meet one day. Over the years, we have discussed how agriculture is deeply connected to health. He spoke about globalisation, environmental degradation and labour loss in the 1970s.

His approach towards agriculture was holistic. So, when I was the director-general of the Indian Council of Medical Research (ICMR), I connected with my father to bring back the culture of healthy eating among school children. As a part of our work on intervention strategies

to address the problem of undernutrition and hidden hunger, he proposed environment-friendly genetic gardens of bio-fortified plants. Today, more health scientists across the globe have realised that it is necessary to work closely with agricultural scientists for prevention of many diseases. Research at the MSSRF focuses on climate-smart agriculture that combines the traditional and modern.

My father's dream was to bring healthy food back on people's plates. As a doctor, I know this will be a sustainable solution to prevent several diseases.

*(As told to Pushpa Narayan)*

*Courtesy: Times of India*