

PROPOSAL

M.S. Swaminathan-The Modern Gandhi

By Peter G. Bourne

Background

M.S. Swaminathan is one of the foremost scientists of our times. He was recently named by *Time Magazine*, along with Mohandas Gandhi and Rabindranath Tagore, as one of the three most distinguished Indians of the century.

Dr Swaminathan was born in Kerala where his surgeon father was an ardent follower of Gandhi whom he remembers visiting their house when he was a child. An outstanding student he rejected the urging of his family to go into the more lucrative professions such as medicine turning instead to agriculture. He was influenced at a crucial stage by the horrifying reports of the Bengal famine and by Gandhi's teachings of India's need for self-sufficiency. At an early stage he was attracted to the field of plant genetics seeing it as holding the key to ending his nation's chronic food shortage. With early training in India and the Netherlands and armed with a Ph.D from Cambridge, his early work on the genetics of the potato established him, at a young age, as a leader in his profession. On his return to India he was a rapidly rising star in the field of agricultural research catching the eye of politicians including Indira Gandhi who gave him her strong support.

Focusing his attention in the early sixties on the search for modified strains of wheat that could dramatically increase production for India's farmers he formed a partnership with American Norman Borlaug. Borlaug, who would later receive the Nobel Peace Prize, was a agricultural scientist working in Mexico for the Rockefeller Foundation. Borlaug provided Swaminathan with high-yield, cross-bred wheat seeds he and others had developed which were then married with a local variety to produce the golden color favored by Indians. The increase in yield per acre was dramatic. Later dubbed the "green revolution" Swaminathan's initiative would transform India from a food importing nation, constantly on the verge of famine, to a grain exporter. Part of the reason for Swaminathan's success was his skill at getting both the top political leadership in the country and the ordinary farmer behind the plan to try the new wheat strains on a massive scale.

Swaminathan rose to the top of the Indian civil service as a highly respected and successful administrator. He was always broadening his interests and his involvements. He became president of the International Bee Association, a member of the study group on fuel wood requirements, the study group on the control of blindness, the study group on control of leprosy, and chaired High Level Expert Committees to draft a national population policy and to review the role of the Central Ground Water Board. His growing international voice on environmental issues

led him to many important positions as a Trustee of the World Resources Institute, President of the International Union for the Conservation of Nature, Vice President, World Wildlife Fund International, and as member of the World Commission on Environment and Development. In 1982, eager to return to his first love, scientific research, he became Director General of the International Rice Research Institute (IRRI) in the Philippines turning a financially-strapped, somnolent institution into a vibrant, fiscally sound focus for the expansion of world rice production. In 1984 he was awarded the first World Food Prize, one of numerous international awards and 38 honorary degrees he has received in recognition of his contribution to solving the world food problem. He also became a trustee of the Ford Foundation and Independent Chairman of the Food and Agriculture Organization Council (FAO).

In 1990 he left (IRRI) and using the funds from the World Food Prize and other awards he established, in Madras, the M.S. Swaminathan Research Foundation dedicated research and implement what he describes as “ a pro-nature, pro-poor, pro-women orientation to research.” As throughout his career, Swaminathan insists that the scientific work at the center be critically tied to practical initiatives that will change the lives of people at the village level.

The central themes of this book will be:

- The story of how someone growing up in relatively humble circumstances in the Third World, could through talent, dedication and immense hard work become one of the world’s leading scientists and from a population of more than a billion Indians be named one of the three most outstanding in this century.
- How the influence of Gandhi primarily through the example set by his father caused him to lead a life characterized by humility and a dedication to improving the life of his fellow Indians, especially the poorest and least privileged most notably women.
- The way a childhood spend in a rural environment always with an intimate sense of partnership with nature and later a life time of studying plant life led him to become one of the world leading environmental advocates.
- Scientists are rarely implementers of their discoveries, implementers are rarely the originators of ideas. Swaminathan has a rare combination of talents that lets him see scientific finding he uncovers always in the light of their potential benefit to society and then implement the innovation through his articulate skills, political adroitness, the mobilization of people at the grass-roots level and through public persuasion on a national or international scale.
- An exemplary model and an inspirational leader. A modern Gandhi who embodies in every aspect of his own life the values he adopted. Leading by example he has a worldwide following of admirers who revere his quiet relentless style, that has

worldwide following of admirers who revere his quiet relentless style, that has saved millions from starvation, that offers the prospect of changing the lives of women throughout India and elsewhere, that sounds a rational and persuasive argument for the preservation of our environment, and radiates optimism about the possibility of finding solutions even to society's most intractable problems.

Proposal

It is proposed to write a biography of Dr M.S. Swaminathan. This would be an authorized biography with his full cooperation. He would provide as much of his time as necessary for interviews, full access to his papers and other documents and facilitate the opportunity to interview members of his family and other key figures in his life.

It is planned to complete the manuscript in two years and that it result in a book of approximately 350 pages.

Author

Dr Peter Bourne, Vice Chancellor of St. George's University, Grenada is a successful biographer having authored "Fidel: A Biography of Fidel Castro" (Dodd Mead, 1986) and "Jimmy Carter: A Comprehensive Biography from Plains to the Post-Presidency" (Scribners/Simon and Schuster 1997). Both books received highly positive reviews in the *New York Times* book review section and elsewhere. Dr Bourne who trained as a physician and anthropologist served as special assistant to president in the Carter White House and subsequently an assistant secretary general at the United Nations. He has devoted much of his career to Third World development programs, especially in the areas of health and agriculture. He has served as a consultant to or on the board of numerous development organizations. He has been a personal friend and professional colleague of Dr M. S. Swaminathan for 30 years.. In particular he worked with Dr Swaminathan during the periods when he was leading the Indian planning commission and the International Rice Research Institute. Dr Bourne is the person who nominated Dr Swaminathan for the World Food Prize. They have served together over the last ten years on the board of directors of the Hunger Project. Recently, at Dr Bourne's invitation, Dr Swaminathan spoke at St. George's University as part of the its "distinguished public lecture series."

Research Assistant

Poonam Ahluwalia supported the first Indian women's rights magazine. While in college she participated in anti-dowry and women's rights campaigns. After moving to Boston she became a core member of the League of Indo-American Women, an organization that supports women and families in domestic crisis. While with the Massachusetts Department of Employment and Training she helped develop and implement the Employment and Training (ET)

program for welfare recipients. As a project director at the Education Development Center she worked on an international workforce development program, which involved formulating action oriented workshops in Peru, Namibia and India. Currently she is leading the development of the Youth Employment Summit.

She is involved in a variety of community activities including environmental and international hunger issues.

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MONKOMBU SAMBASIVAN SWAMINATHAN

*UNESCO-Gousteau Professor
in Ecotechnology &
Chairman,
M.S. Swaminathan Research Foundation*

CURRICULUM VITAE

I. Born on 7th August 1925 in Tamil Nadu, India

II. Education

- (a) B.Sc. from Travancore University in 1944
- (b) B.Sc. Agriculture from Coimbatore Agricultural College, Madras University, 1947
- (c) Associateship of the Indian Agricultural Research Institute, New Delhi, in Genetics, 1949
- (d) UNESCO Fellow in Genetics at the Agricultural University at Wageningen, The Netherlands, during 1949-50
- (e) Ph.D. from the School of Agriculture, University of Cambridge, U.K. in 1952
- (f) Research Associate in Genetics at the University of Wisconsin USA during 1952-1953

III. Honorary Degrees - D.Sc. from

- (1) The Sardar Patel University, Vallabh Vidyanagar (1970)
- (2) The Andhra Pradesh Agricultural University, Hyderabad (1971)
- (3) The Andhra University, Waltair (1972)
- (4) The Haryana Agricultural University, Hissar (1973)
- (5) Pant University, Pantnagar (1974)
- (6) Jodhpur University, Jodhpur (1975)
- (7) Marathwada Krishi Vidyapeeth, Parbhani (1975)
- (8) Kumaon University, Nainital (1975)

- (9) Burdwan University, Burdwan (1976)
- (10) Agra University, Agra (1978)
- (11) Kerala Agricultural University, Trichur (1978)
- (12) Sri Venkateshwara University, Tirupati (1979)
- (13) University of Agricultural Sciences, Bangalore (1980)
- (14) Banaras Hindu University, Varanasi (1981)
- (15) Technical University of Berlin, Berlin (West) (1981)
- (16) Mahatma Phule Agricultural University, Rahuri (1982)
- (17) Chandrasekhara Azad Agricultural University, Kanpur (1983)
- (18) University of Wisconsin, Madison, Wisconsin, U.S.A (1983)
- (19) Delhi University, Delhi (1984)
- (20) University of the Philippines, Diliman, Quezon City, Philippines (1984)
- (21) Asian Institute of Technology, Bangkok, Thailand (1985): Doctorate of Technology
- (22) University of Mangalore, Mangalore (1986)
- (23) University of Hyderabad, Hyderabad, (1987)
- (24) Agriculture University, Wageningen, The Netherlands (1988)
- (25) Assam Agricultural University, Jorhat, Assam (1988)
- (26) Oregon State University, Corvallis, Oregon State, U.S.A (1988)
- (27) Tamilnadu Agricultural University, Coimbatore (1989)
- (28) Rajasthan Agricultural University, Bikaner (1989)
- (29) Indian Agricultural Research Institute, New Delhi, (1989)
- (30) Pondicherry University, Pondicherry (1989)
- (31) University of Tuscia, Viterbo, Italy (1990)
- (32) North Eastern Hill University, Shillong (1991)
- (33) University of Bologna, Italy (1992)
- (34) Punjab Agricultural University, Ludhiana (1994)
- (35) Indian Institute of Technology, Madras (1997)

IV. Honorary Professorships

- (a) Zhejiang Agricultural University, Hangzhou, China
- (b) Indian Agricultural Research Institute, New Delhi
- (c) Anna University, Madras
- (d) Indian Institute of Technology, Madras
- (e) Madras University, Madras

V. Professional Profile

A) Positions Held

- (a) Teacher, Researcher and research administrator at the Central Rice Research Institute, Cuttack and at the Indian Agricultural Research Institute, New Delhi (1954-72)
- (b) Director General, Indian Council of Agricultural Research and Secretary to the Government of India, Department of Agricultural Research and Education (1972-80)
- (c) Secretary to the Government of India, Ministry of Agriculture and Irrigation (1979-80)
- (d) Acting Deputy Chairman, Planning Commission, Government of India. (April-June, 1980)
- (e) Member (Agriculture, Rural Development, Science and Education) Planning Commission, Government of India (June 1980-April 1982)
- (f) Director General, International Rice Research Institute (IRRI) Los Banos, Philippines, (April 1982-January 1988)
- (g) Director, Centre for Research on Sustainable Agricultural and Rural Development, Madras (1989 onwards)

B) Honorary Positions in International Committees/Organisations

- (a) Vice Chairman, Technical Advisory Committee of the Consultative Group on International Agricultural Research (CGIAR) (1971-77)
- (b) Vice Chairman, Protein-Calorie Advisory group of United Nations, (1972-77)
- (c) Chairman, Committee of the whole, UN Conference on Desertification, Nairobi (1977)
- (d) Chairman, U.N. Advisory Committee on Science and Technology for Development (1980-83)
- (e) President, International Federation of Agricultural Research Systems for Development (IFARD) (1976-1983)
- (f) President, International Bee Research Association (IBRA) (1978-1990)
- (g) Independent Chairman, FAO Council (1981-1985)

- (h) Member, Scientific and Technical Advisory Committee, Tropical Diseases Research, World Health Organisation (1983-1985)
- (i) Chairman, Global Board of Directors, The Hunger Project (1995-
- (j) Chairman, Interim Board of Trustees, Commonwealth - Government of Guyana Iwokrama International Rainforest Programme (1990-
- (k) Chairman, Governing Board, CAB International (1991-94)
- (l) Andrew D. White Professor-at-Large of the Cornell University, United States of America (1989-95)

VI. Honorary Positions in organizations devoted to Nature Conservation and Sustainable Development

- (a) Founder Member and later Chairman of the Board of Trustees of the International Council for Research on Agro-forestry (1977-1982)
- (b) Chairman, Advisory Panel on Environment, Forestry and Food Security of the World Commission on Environment and Development (1984-1986)
- (c) Trustee, World Resources Institute (1985-1994)
- (d) Chairman, Editorial Advisory Panel for the World Resources Report (1986 onwards)
- (e) Trustee, Better World Society (1986-1992)
- (f) Honorary Vice-President, World Wild Life Fund International (1985-1987)
- (g) President, International Union for the Conservation of Nature and Natural Resources (1984-1990)
- (h) President, International Society for Mangrove Ecosystems (1990-1993)
- (i) President, World Wide Fund for Nature-India (1989-1996)

VII. Recognition by Scientific Academies

- (a) Fellow of the Indian Academy of Sciences (F.A.Sc.) (1957)
- (b) Fellow of the Indian National Science Academy (FNA) (1962)
- (c) Honorary Fellow of the National Academy of Sciences, India (1976)
- (d) General President, Indian Science Congress, Waltair (1976)
- (e) Honorary Fellow of the Swedish Seed Association, Sweden (1971)
- (f) Fellow of the Royal Society of London (FRS) (1973)

- (g) Foreign Associate, National Academy of Sciences of the United States (1977)
- (h) Foreign Member, All-Union Academy of Agricultural Science, USSR (1978); Russian Academy of Agricultural Sciences (1992)
- (i) Founding Fellow, Third World Academy of Sciences (1983)
- (j) President, XV International Congress of Genetics, New Delhi (1983)
- (k) Foreign Member, Royal Swedish Academy of Agriculture and Forestry (1983)
- (l) Foreign Honorary Member, National Academy of Arts and Sciences, Massachusetts (1984)
- (m) Foreign Fellow, National Academy of Sciences of Italy (Accademia Nazionale delle Scienze della Dei XL - 1985)
- (n) Fellow of the Royal Society of Arts, London (1985)
- (o) Honorary Research Professor of the Chinese Academy of Sciences (1987)
- (p) Honorary Research Professor in Genetics of the Chinese Academy of Sciences (1987)
- (q) Fellow, European Academy of Arts, Sciences and Humanities (1988)
- (r) Fellow, Bangladesh Academy of Sciences (1992)
- (s) President, National Academy of Sciences, India (1988-90)
- (t) President, National Academy of Agricultural Sciences, India (1991 - 1996)
- (u) Corresponding Member, Accademia dei Georgofili, Italy (1994)
- (v) Fellow of the Linnean Society of London (1994)
- (w) Fellow of the American Association for the Advancement of Science (1994)
- (x) Honorary Fellow of the Crop Science Society of America & the American Society of Agronomy (1996)

VIII. National Scientific Awards

- (a) Shanti Swarup Bhatnagar Award for contributions to Biological Sciences (1961)
- (b) Birbal Sahni Medal of the Indian Botanical Society for contributions to Applied Botany (1966)
- (c) Silver Jubilee Commemoration Medal of the Indian National Science Academy for contributions to genetics and agricultural research (1971)
- (d) Barclay Medal of the Asiatic Society for contributions to genetics (1978)

- (e) Moudgil Prize for contributions to standardisation (1978)
- (f) Borlaug Award (1979)
- (g) Meghnad Saha Medal of the Indian National Science Academy (1981)
- (h) Rathindranath Tagore Prize of Visva Bharati University (1981)
- (i) R.D. Misra Medal of the Indian Environmental Society (1981)
- (j) "Krishi Ratna" Award for serving the farming community by the Bharat Krishak Samaj/World Agriculture Fair Memorial Trust Society (1986)
- (k) Dr. J.C. Bose Medal, Bose Institute (1989)
- (l) Lal Bahadur Shastri Deshgaurav Samman (1992)
- (m) Jawaharlal Nehru Birth Centenary Award of the Indian Science Congress Association (1992)
- (n) Charles Darwin International Science and Environment Medal (1993)

IX. Awards by the President of India

- (a) Padma Shri (1967)
- (b) Padma Bhushan (1972)
- (c) Padma Vibushan (1989)

X. International Awards

- (a) Mendel Memorial Medal of the Czechoslovak Academy of Sciences for contributions to Plant Genetics (1965)
- (b) Bennett Commonwealth Prize of the Royal Society of Arts (1984) for contributions to household nutrition security
- (c) Bicentenary Medal of the University of Georgia, U.S.A. (1985)
- (d) Albert Einstein World Science Award by the World Cultural Council (1986)
- (e) Award for Community Leadership (1971) : Awarded the Ramon Magsaysay Award for Community Leadership in 1971, in recognition of contributions, as "Scientist, educator of both students and farmers, and administrator towards generating a new confidence in India's agricultural capability"
- (f) Award for serving the cause of Women in Development (1985) : First recipient of the Award instituted by the Association for Women in Development, Washington, D.C., United States, for "outstanding contributions to activities which foster development for women"

- (g) First World Food Prize : On October 6, 1987, Dr. Swaminathan received the First World Food Prize at the Smithsonian Institution in Washington D.C. This prize is the foremost international award to recognize, encourage and reward outstanding individual achievement in improving the world food supply. The prize was instituted in 1986 with funds provided by the General Foods Fund, for serving the "equivalent of a Nobel Prize in the field of food and agriculture"
- (h) The Golden Heart Presidential Award : On 10 November 1987, Her Excellency Corazon C. Aquino, President of the Republic of the Philippines, conferred on Dr. Swaminathan the Golden Heart Presidential Award in recognition of his "contribution in resolving a wide range of problems in basic and applied genetics and agricultural research and development in the Philippines, for his accomplishments in the area of agricultural science and research highly beneficial to Philippino farmers and for having expanded considerably IRRI's capacity for upstream research to bring to all the Asian rice farmers the fruits of recent advances in science and technology"
- (i) In recognition of Dr. Swaminathan's contributions to the research, training and technology transfer programmes of the International Rice Research Institute (IRRI), the Board of Trustees named the Training and Technology Transfer Building of the Institute as "M.S. Swaminathan Hall". The IRRI Trustees also established a special fund for providing scholarships in the name of Dr. M.S. Swaminathan for candidates who wish to do research in the area of women in rice farming systems. This is in recognition of his services to the cause of women in agriculture
- (j) Commandeur of the Order of the Golden Ark of the Netherlands (1990): Appointed to this order to honour special services rendered to the conservation of the flora and fauna in the world
- (k) The Tyler Prize for Environmental Achievement : Awarded the 1991 Tyler Prize in recognition of life-long contributions to increasing biological productivity on an ecologically sustainable basis and to promoting the conservation of biological diversity
- (l) Honda Prize of the Honda Foundation, Tokyo, Japan, for outstanding services to the development of eco-technologies in the field of agriculture

- (m) Asian Regional Award by the Asian Productivity Organisation (1994) for contributions to the improvement of agricultural productivity in Asia
- (n) UNEP - Sasakawa Environment Prize, 1994 for outstanding global contribution to the management and protection of the environment and to conservation and sustainable development
- (o) World Academy of Art and Science, 1994 - Special Award for exceptional contributions to global civilisation and leadership in *thought that leads to action*
- (p) Global Environmental Leadership Award-1995 by the Climate Institute, Washington, DC, USA, for encouraging village level responses to environmental issues
- (q) *China* : 1997. "Highest award for International Cooperation on Environment and Development, for outstanding contributions to the lofty cause of environmental protection and development, and for his signal accomplishments in the field of international cooperation"
- (r) *France* : 1997. *Ordre du Merite Agricole* created in 1883 to honour persons having rendered services of the highest quality to the cause of agriculture and its development and amelioration
- (s) *National Academy of Agricultural Sciences, India 1997. Dr. B.P. Pal Medal* for unique contributions to agricultural research and developments

XI. Major Scientific Contributions

Has worked in collaboration with colleagues and students on a wide range of problems in basic and applied plant genetics and agricultural research and development over a period of 45 years. Among the more important contributions are:

- (a) elucidation of the origin and differentiation of potato species;
- (b) understanding of genetic relationships among wheat species;
- (c) accomplishment of difficult crosses in potato species;
- (d) standardisation of techniques for the induction of polyploidy (i.e., doubling the number of chromosomes) in several economic plants;
- (e) elucidation of the factors influencing the induction and recovery of mutations in wheat and rice and elaboration of the relationships between the secondary effects of food irradiation and the assessment of the wholesomeness of irradiated food;

- (f) identification of the barriers to high yields in wheat and the initiation of the wheat breeding programme involving the "Norin" dwarfing genes obtained from Mexico;
- (g) development of the concept of "crop cafeterias", "mid-season corrections in crop-scheduling", risk distribution agronomy and alternative cropping strategies for different weather conditions;
- (h) purposeful manipulation of genes in improving the yield, quality and stability of performance of wheat, rice and potato;
- (i) development of whole village or watershed operational research projects based on principles of ecology and economics and promotion of the concepts of ecological economics and economic or developmental ecology;
- (j) development of disaster management strategies based on relief and rehabilitation measures in the most seriously affected (MSA) areas and improved crop productivity in the most favourable (MFA) areas, and elaboration of the concepts of "drought code" and "good weather code";
- (k) management of the disastrous drought of 1979 as Secretary to the Government of India in the Ministry of Agriculture and Development of a scientific Monsoon Management Strategy;
- (l) collection and conservation of plant genetic resources, particularly of rice and wheat;
- (m) development of the National Demonstration and Lab to Land programmes for the effective dissemination of research results among small farmer households;
- (n) organisation of coastal systems research and biovillages;
- (o) organisation of Genetic Resources Centres for Sustainable agriculture and for adaptation to sea level rise; and
- (p) promotion of a job-led economic growth strategy based on a pro-nature, pro-poor and pro-women orientation to technology development and dissemination;
- (q) Organisation of Resource Centres for Farmers' Rights and Ecotechnology.

The results of the above research studies and extension efforts have been published in over 200 scientific papers in national and international journals as well as in several books.

XII. Contributions to Education and Extension

Over 55 students have done their Ph.D thesis work under the guidance of Dr. Swaminathan. In 1972, he introduced the "Techniracy" concept of imparting training in the latest technical skills entirely through work experience, in order to bypass the problems created by illiteracy and fostered the establishment of a chain of Krishi Vigyan Kendras (Farm Science Centres) for this purpose by the Indian Council of Agricultural Research.

XIII. During 1980-96, Dr. Swaminathan chaired the following National Committees set up by the Government of India

- (a) Expert Group on programmes for the alleviation of poverty
- (b) Task force for the study of eco-development in the Himalayan Region
- (c) Task Force for developing an eco-development plan for Goa
- (d) Committee for the development of water resources of Western Ghats
- (e) Expert Group on perishable agricultural commodities
- (f) Study Group on fuel wood requirements
- (g) Working Group on control of blindness
- (h) Working Group on control of leprosy
- (i) Chairman, Science Advisory Committee to the Cabinet of India
- (j) Chairman, National Biotechnology Board
- (k) Member, National Commission on Agriculture (1971-77)
- (l) Chairman, Steering Committee for Environment and Forestry of the Planning Commission (1988-89)
- (m) Chairman, Core Committee for the preparation of a National Environment Policy, Ministry of Environment and Forests, Government of India (1989-90)
- (n) Chairman, High Level Committee for the review of the Central Ground Water Board (1989-90)
- (o) Chairman, Expert Group for the preparation of a draft national population policy (1993-94)
- (p) Chairman, Government of India Committee for Research on Agricultural Exports in the context of the World Trade Agreement (1994 -
- (q) Chairman, Government of India Committee on Remedying Regional Imbalances in Agriculture (1996 -

XIV. Tributes

Dr. N.É. Borlaug

On the occasion of his receiving the Nobel Peace Prize in 1970, Dr. Borlaug wrote, "The green revolution has been a team effort and much of the credit for its spectacular development must go to Indian officials, Organisations, Scientists and farmers. However, to you, Dr. Swaminathan, a great deal of the credit must go for first recognising the potential value of the Mexican dwarfs. Had this not occurred, it is quite possible that there would not have been a green revolution in Asia".

Secretary General of the United Nations

On the occasion of the presentation of the First World Food Prize to Dr. Swaminathan in October 1987, the Secretary General of the United Nations, Mr. Javier Perez de Cuellar wrote, "*Dr. Swaminathan is a living legend. His contributions to Agricultural Science 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*".

XV. Present Honorary Positions (1997)

- (a) Chairman, Global Board of Directors, The Hunger Project
- (b) Chairman, Board of Trustees of the Iwokrama International Rain Forest Centre, Guyana
- (c) Trustee, The Ford Foundation and Chairman, Trustees' Committee on Asset Building and Community Development
- (d) Chief Adviser to the Chinese Academy of Sciences for the Biovillage programme and Member, China International Council for Sustainable Development
- (e) Chairman, Board of Trustees, National Foundation for India
- (f) Chairman of the M.S. Swaminathan Research Foundation established with the funds associated with the World Food Prize and Director, Centre for Research on Sustainable Agricultural and Rural Development
- (g) UNESCO-Cousteau Professor in Ecotechnology for Asia
- (h) Chairman, Board of Trustees of the Auroville Foundation

Prof. M.S. SWAMINATHAN

Dr. M.S. Swaminathan is one of the world's leading agricultural scientists. He played a catalytic role in India's green revolution between 1960 and 1982. From April 1982 to January 1988 he served as Director General of the International Rice Research Institute (IRRI).

For the decade prior to assuming his post with IRRI, Dr. Swaminathan was at the forefront of one of the most remarkable agricultural accomplishments in recent history-moving India from having the largest food deficit in the world to producing enough grain to feed all of its people. From 1954 to 1972, he worked at the Indian Agricultural Research Institute, New Delhi, mainly in the field of wheat improvement. He served as Director General of the Indian Council of Agricultural Research; Secretary of the Department of Agricultural Research and Education (1972-1979); and Principal Secretary of the Ministry of Agriculture and Irrigation (1979-1980). He was member in-charge of agriculture and rural development in India's Planning Commission from 1980 to 1982.

Born in Tamil Nadu, India, on August 7, 1925, Swaminathan was educated at Travancore and Madras Universities. He received his Ph.D. in Genetics from Cambridge University in 1952 and has since received over 34 honorary doctorates from institutions spanning three continents. In addition to being a Fellow of the Indian National Science Academy and the Royal Society of London, Dr. Swaminathan is a Fellow of the Science Academies of Sweden, Italy, United States, USSR and China. He is a Founder Fellow of the Third World Academy of Sciences. He is the current President of the National Academy of Agricultural Sciences of India and the World Wide Fund for Nature - India. He was President of the International Union for the Conservation of Nature and Natural Resources (IUCN) during 1984-90.

Over a period of 45 years, Dr. Swaminathan has worked in collaboration with scientists and policy makers on a wide range of problems in basic and applied plant genetics and agricultural research and development. Among his more important contributions are: conservation of plant genetic resources, *in situ* and *ex situ* conservation of biodiversity, manipulation of genes to improve the yield,

quality and stability of wheat, rice and potatoes; identification of the barriers to high yields in wheat and initiation of the dwarf wheat breeding programme; identification of cytotoxic agents in irradiated food material and demonstration of the indirect effects of radiations, organization of the National Demonstration and Lab to Land programmes and management of the 1979 drought as Secretary to the Government of India in the Ministry of Agriculture. At IRRI, he placed issues relating to sustainable rice production as well as intra-generational and inter-generational equity top on the research agenda. He served as a Founder-Trustee and later Chairman of the Board of the International Council for Research on Agro-Forestry (ICRAF) during 1977-1982. Recently he helped to develop a transparent and implementable method of recognising and rewarding the intellectual property contributions of tribal and rural families in the conservation and selection of plant genetic resources.

He served as Chairman of the U.N. Advisory Committee on Science and Technology for Development during 1981-84 and was Independent Chairman of the FAO council during 1981-85. In 1982, he organised a Society for the Promotion of Wasteland Development (SPWD) as a professional non-governmental organization committed to the ecological restoration of degraded land in different parts of India. He was founder-chairman of SPWD from 1982 to 1985. He served as Chairman of the Advisory Panel on Food Security, Agriculture, Forestry and Environment to the World Commission on Environment and Development (WCED). The report of his panel was published in March 1987 by Zed Books Ltd, under the title "Food 2000 : Global Policies for Sustainable Agriculture".

He has published over 200 papers in international journals and several books, including "Building a National Food Security System" (Indian Environmental Society, 1981) and "Science and Integrated Rural Development" (Concept Publishing Company, New Delhi, 1982). Along with Prof. S.K. Sinha, he edited a book on "Global Aspects of Food Production" (Tycooly, 1987). He has chaired several national and international committees of experts, including the Indian Expert Group on Programmes for the Alleviation of Poverty, Eradication of Leprosy and Blindness, the eco-development of Himalayas and Western Ghats and the preparation of a draft National Population Policy.

Among his many distinguished awards are the Ramon Magsaysay Award for Community Leadership (1971), the first award for serving the cause of women in development (1985), Padma Shri (1967), Padma Bhushan (1972) and Padma Vibhushan (1989) awards by the President of India. In 1986, he received the Albert Einstein World Award on Science. On 6 October 1987, he became the first laureate of the World Food Prize, regarded widely as the equivalent of a Nobel Prize in Agriculture.

Dr. Swaminathan is currently heading in an honorary capacity a Research Centre at Madras for sustainable agricultural and rural development based on the integration of traditional and frontier technologies. The Centre was set up with the funds associated with the World Food Prize, Tyler Prize and Honda Prize. The major aim of the Research Centre is the promotion of a job-led economic growth strategy in villages rooted in the principles of ecology and gender equity. UNESCO designated Dr. Swaminathan in 1996 as UNESCO-Cousteau Professor in Ecotechnology for Asia.

On the occasion of his receiving the first World Food Prize at the Smithsonian Institution, Washington, in October, 1987, Mr. Javier Perez de Cuellar, Secretary General of the United Nations wrote, "*Dr. Swaminathan is a living legend. His contributions to agricultural science 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*".