

# CURRICULUM VITAE

## MONKOMBU SAMBASIVAN SWAMINATHAN



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

### **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) G B Pant University of Agriculture and Technology, Pantnagar (1974)
- 6) Jodhpur University, Jodhpur (1976)
- 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)
- 36) Hemvati Nandan Bahuguna Garhwal University, Garhwal, UP (1997)
- 37) The Hebrew University of Jerusalem, Israel (1998)
- 38) University of Calcutta, Calcutta (1998)
- 39) Kakatiya University, Andhra Pradesh (2000)
- 40) University of Massachusetts, USA (2001)
- 41) Dr Panjabrao Deshmukh Krishi Vidyapeeth, Akola (2001)
- 42) Gujarat Agricultural University, Ahmedabad (2002)
- 43) University of Bonn, Germany (2002)
- 44) Bidhan Chandra Krishi Viswavidyalaya, West Bengal (2003)
- 45) Soka University, Japan (2003)
- 46) Ohio State University, Columbus, USA (2004)
- 47) Sher-e-Kashmir Agricultural University, Sri Nagar (2005)
- 48) Iowa State University USA (2005)
- 49) Shanumgha Arts, Science, Techn. & Res.Academy (SASTRA), (2005)
- 50) Sathyabama Deemed University (2005)
- 51) University of Kalyani (2006)
- 52) N D University of Agriculture & Technology, Faizabad (2006)
- 53) Indira Gandhi National Open University (2007)
- 54) University of Bari, Italy (2007)
- 55) University of Mysore, Mysore
- 56) Aligarh Muslim University (2009)
- 57) Nethaji Subhash Open University, Kolkata (2008)
- 58) Universidad de Talca, Chile (2009)

- 59) University of Alberta, Canada (2010)
- 60) Padmashree Dr D Y Patil University, Mumbai (2011)
- 61) McMaster University, Canada (2011)
- 62) IIT, Kharagpur (2011)
- 63) Punjab University (2011)
- 64) University of East Anglia, UK (2012)
- 65) Calicut University, Calicut (2012)
- 66) Deshikottama (Honorary Doctorate), Viswa-bharati, Santiniketan (2012)
- 67) University of Azerbaijan (2013)
- 68) University of Nebraska (2013)
- 69) North Maharashtra University, Jalgaon (2013)
- 70) Dr D Y Patil Vidyapeeth, Pune (2013)

#### **IV. 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 (1972-79)
- c) Principal 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) Chairman, M S Swaminathan Research Foundation (1989 onwards)
- h) UNESCO Chair in Ecotechnology (1994 onwards)

- i) Chairman, National Commission on Farmers, Government of India (2004-06)
- j) President, Pugwash Conferences on Science and World Affairs (2002-2007)
- k) President, National Academy of Agricultural Sciences (2005-07)
- l) Member, National Advisory Council, Government of India (2010-

## **B. Honorary Positions in International Committees/ Organisations**

- a) Vice Chairman, Technical Advisory Committee to 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, Governing Board, CAB International (1991-94)
- j) Andrew D. White Professor-at-Large of the Cornell University, United States of America (1989-95)
- k) Trustee of the Ford Foundation (1989-97)
- l) Chairman of the Global Hunger Project (1994-2000)
- m) Founder Chairman of the Trustees of the Iwokrama International Centre for the Sustainable Management of Rainforests, Guyana (1992-99)
- n) Member, China International Council for Sustainable Development (1992-2002)
- o) Chairman, Genetic Resources Policy Committee of the Consultative Group on International Agricultural Research (1994-2002)
- p) Founder-Trustee, Biobliotheca Alexandrina, Egypt

### **C. 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) Founder-Chairman, Society for the Promotion of Wasteland Development, India (1982-86)
- c) Chairman, Advisory Panel on Environment, Forestry and Food Security of the World Commission on Environment and Development (1984-1986)
- d) Trustee, World Resources Institute (1985-1994)
- e) Chairman, Editorial Advisory Panel for the World Resources Report (1986-1998)
- f) Trustee, Better World Society (1986-1992)
- g) Honorary Vice-President, World Wild Life Fund International (1985-1987)
- h) President, International Union for the Conservation of Nature and Natural Resources (1984-1990)
- i) President, International Society for Mangrove Ecosystems (1990-1993)
- j) President, World Wide Fund for Nature-India (1989-1996)
- k) Chairman, Board of Trustees, Centre for Science and Environment, New Delhi (2003 onwards)

### **V. 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 Agricultural 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) International Member of the American Association for the Advancement of Science (1992)
- t) President, National Academy of Sciences, India (1988-90)
- u) President, National Academy of Agricultural Sciences, India (1991 - 1996)
- v) Corresponding Member, Accademia dei Georgofili, Italy (1994)
- w) Fellow of the Linnean Society of London (1994)
- x) Fellow of the American Association for the Advancement of Science (1994)
- y) Honorary Fellow of the Crop Science Society of America & the American Society of Agronomy (1996)
- z) Vice-President, XVIII International Congress of Genetics, Beijing (1998)
- aa) Honorary Fellow of Association of Aquaculture (1998)
- bb) Fellow, Madras Science Foundation (1999)
- cc) Fellow, Indian Society for Plantation Crops (2000)
- dd) Honorary Member of the World Innovation Foundation (2002)

## **VI. 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)
- o) Dr. B.P. Pal Medal for unique contributions to agricultural research and development of the National Academy of Agricultural Sciences, India (1997)
- p) V. Gangadharan Award for outstanding contributions to National Development (1997)
- q) B.P. Pal Memorial Award of the Indian Science Congress Association (1998)
- r) Shatabdi Puraskar in the field of Agricultural Sciences of the Indian Science Congress Association (1999)
- s) Prof P N Mehra Memorial Award (1999)
- t) Legend in his Lifetime Award by the World Wilderness Trust (1999)
- u) Asutosh Mookerjee Memorial Award for 1999-2000 by the Indian Science Congress Association
- v) Indira Gandhi Prize for Peace, Disarmament and Development (2000) – for his outstanding contribution, in the domain of plant genetics and ensuring food security to hundreds of millions of citizens in the developing world.



- w) Millennium Alumnus Award by the Tamil Nadu Agricultural University (2000)
- x) Millennium Scientist Award by the Indian Science Congress Association (2001)
- y) Lokmanya Tilak Award by the Tilak Smarak Trust, Pune (2001)
- z) Indira Gandhi Gold Plaque (2002) by the Asiatic Society for his significant contribution towards human progress.
- aa) BioSpectrum Life Time Achievement Award (2003)
- bb) Technology Achievement Award (2005)
- cc) Raja Rammohan Roy Puraskar (2005)
- dd) All India Management Association's Life Time Achievement Award (2007) for Management – in recognition of his contribution to sustainable development through mitigation of hunger in India and elsewhere
- ee) Distinguished Global Thinker Award (2007) for his work in the cause of achieving food and agricultural security, by the Institute for Integrated Learning in Management, New Delhi.
- ff) Lal Bahadur Shastri National Award for Excellence in Public Administration, Academics Management (2007)
- gg) Fifth Panampilly Prathibha Puraskar (2012)
- hh) GITAM Foundation Annual Award (2012), Visakhapatnam

## **VII. Awards by the President of India**

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

## **VIII. International Awards**

- a) Mendel Memorial Medal of the Czechoslovak Academy of Sciences for contributions to Plant Genetics (1965)
- b) Ramon Magsaysay Award for Community Leadership (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"

- c) Bennett Commonwealth Prize of the Royal Society of Arts (1984) for contributions to household nutrition security
- d) Bicentenary Medal of the University of Georgia, U.S.A. (1985)
- e) Albert Einstein World Science Award by the World Cultural Council (1986)
- 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 for serving as 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 Philippine 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 in 1991 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) *USA* : 1998. *Henry Shaw Medal awarded by the Board of Trustees of the Missouri Botanical Garden* in consideration of important service to humanity through emphasis on sustainability in agriculture
- t) *Sweden / USA* : 1999. *The VOLVO Environment Prize* for his achievements as a plant breeder and administrator which led to dramatic increases in crop yields, his international leadership in agriculture and resource conservation, his deep concern for the poor and disadvantaged, and his continuing research and leadership to ensure that they get the opportunities needed to develop in ways that enhance the natural environment on which they depend.
- u) *France* : 1999. *UNESCO Gandhi Gold Medal* for his outstanding work in extending the benefits of biotechnology to marginalized and poverty-stricken populations in developing countries, and in securing a sound basis for sustainable agricultural, environmental and rural development.
- v) Franklin D Roosevelt Four Freedoms Award by the Franklin and Eleanor Roosevelt Institute (2000) “for brilliant leadership that has established a goal for the new millennium – 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 have given new meaning to Franklin D Roosevelt’s commitment to a better world where all nations will understand and strive for Freedom from want”.
- w) Planet and Humanity Medal of the International Geographical Union (2000) for significant contribution to environmentally relevant issues.
- x) The Economic Times Awards for Corporate Excellence – Lifetime Achievement (2002) for nurturing a revolution in a highly conservative sector, for laying the foundation for food security, and for using biodiversity for sustainable prosperity.
- y) *Japan*: Toda Award for Peace Achievement, Japan, for contributions to wide-ranging and inter-related concerns as the eradication of poverty, preserving

regional ecosystems, promoting technological innovation and research for sustainable agriculture.

- z) *Outstanding Technology Leadership* – included among the 50 world leaders by Scientific American (December, 2004)
- aa) *Soka Gakkai Hiroshima Peace Award (2005)* – In recognition of outstanding contributions to world peace, based on noble commitment to humanism.
- bb) *The Crop Science Society of America Presidential Award (2005)* – In recognition for his tireless efforts to improve the welfare and dignity of humankind through agriculture.
- cc) *Ordre Du Merite Agricole (Commander of the Agricol Merit) (2006), France* – In honor of his eminent service to agriculture and particularly to its development, in France and throughout the world
- dd) *Sahametrei Medal (2006 of the Royal Government of, Cambodia (in the grade of Chevalier)* – for contributions leading to the establishment and strengthening of the Cambodian Agricultural Research and Development Institute (CARDI) and the re-establishment of rice research in Cambodia
- ee) *Medalla Rectoral (2009), Universidad de Chile, Chile*
- ff) *Willa S Cather Medal (2011), University of Nebraska, Lincoln.* – University of Nebraska's highest award presented only occasionally to individual of distinction. The medallion honors persons who have responded creatively to the frontiers of human rights, the humanities or the arts.

## **IX. Major Scientific Contributions**

Has worked in collaboration with colleagues and students on a wide range of problems in basic and applied plant genetics, agricultural research and development and the conservation and enhancement of natural resources over a period of 60 years. Among the more important contributions are:

- a) elucidation of the origin and differentiation of potato species (1952);
- b) Improving the yield potential of *indica* rice through crosses between *indica* and *japonica* varieties (1954);
- c) standardisation of techniques for the induction of polyploidy (i.e., doubling the number of chromosomes) in several economic plants, including tuber-bearing *solanum* species (1950);
- d) accomplishment of difficult crosses in potato species, resulting in alien gene transfer for frost resistance (1953);

- 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 (1958);
- f) understanding of genetic relationships among wheat species (1960);
- g) 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(1963);
- h) initiation of a rice breeding programme designed to transfer the non-lodging plant type to **basmati** strains (this led ultimately to the release of Pusa Basmati) (1965);
- i) development of the concept of "crop cafeterias", "mid-season corrections in crop-scheduling", risk distribution agronomy and alternative cropping strategies for different weather conditions(1966);
- j) purposeful manipulation of genes in improving the yield, quality and stability of performance of wheat, rice and potato(1949 – 1989);
- k) 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(1972);
- l) 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"(1975);
- m) 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(1979);
- n) collection and conservation of plant genetic resources, particularly of potato, rice, wheat and mangrove species (1949 onwards);
- o) development of the National Demonstration, Lab to Land programmes and while village, watershed operational research projects for the effective field testing and dissemination of research results among small farmer households(1964);
- p) organisation of coastal systems research and biovillages(1990);
- q) organisation of Genetic Resources Centres for Sustainable agriculture and for adaptation to sea level rise(1991);
- r) promotion of a job-led economic growth strategy based on a pro-nature, pro-poor and pro-women orientation to technology development and dissemination(1992);
- s) Organisation of Resource Centres for Farmers' Rights and Ecotechnology(1993);

- t) Organisation of Biovillages and Community Centred natural resources management strategies (1993);
- u) Establishment of computer-aided and internet connected Rural Knowledge Centres (1997); organisation of the Jamsetji Tata National Virtual Academy for Rural Prosperity and a National Alliance for Mission 2007 : Every Village a Knowledge Centre.
- v) Organising a Community Gene, Seed and Grain management strategy, involving concurrent attention to conservation, cultivation, consumption and commerce (1998)

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

## **X. Contributions to Education and Extension**

In the early nineteen sixties, he designed and implemented the **National Demonstration Programme** in wheat, rice and other crops. The National Demonstration Programme resulted in a small government programme becoming a mass farmers' movement for increasing productivity.

76 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. He also initiated the Lab to Land Programme and the whole village operational Research Projects, when he was the Director General of ICAR. Designed the organisation of Farm Schools in the fields of Farmer-achievers to promote farmer to farmer learning.

## **XI. During 1980-2009, 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 (1981)
- h) Working Group on control of leprosy (1981)
- i) Chairman, Science Advisory Committee to the Cabinet of India (1980-82)
- j) Chairman, National Biotechnology Board (1981-82)
- 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 –97)
- q) Chairman, Government of India Committee on Remedying Regional Imbalances in Agriculture (1996-98)
- r) Chairman, Committee to restructure agricultural education (1996-97)
- s) Chairman, Committee to draft a National Biodiversity Act (1998)
- t) Chairman, Tenth Plan Steering Committee in the area of Agriculture and allied sectors (2000-2001)
- u) Chairman, Task Force for a National Policy for Agricultural Biotechnology (2004)
- v) Chairman, Expert Group for a Review of Coastal Zone Regulation (2005)
- w) Chairman, Task Group on Revamping and Refocussing National Agricultural Research System (2005)
- x) Chairman, Advisory Council on Artificial Recharge of Ground Water – Report of Sub-Committee on More Crop and Income per Drop of Water
- y) Chairman, Expert Committee on the draft Coastal Management Zone (CMS) Notification, constituted by the Ministry of Environment and Forests (2009)

## **XII. Tributes**

### **Dr. N.E. 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".

### **Mr Javier Perez de Cuellar, 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*".

### **Dr Bruce Alberts, President, National Academy of Sciences, Washington**

"Swaminathan reminds me a great deal of a second remarkable scientist whose endeavors I have followed for 45 years, the Jim Watson of DNA double-helix fame. Both Watson and Swaminathan have always pushed the envelope of what is possible with relentless energy, and they have first set and then achieved goals that seemed unachievable to most others. Both have built unique institutions for science; Watson the Cold Spring Harbor Laboratory in Long Island, New York; Swaminathan the M S Swaminathan Research Foundation in Chennai, India. And both remains inspiring leaders today."

### **Hon'ble Sri Mohd Najib Bin Tun Haji Abdul Razak, Prime Minister of Malaysia**

"I have no doubt that this New Crops for the future Research Centre will do much to nurture the next generation of Norman Borlaug – and of course we also have the great honour of welcoming today another World Food Prize Laureate, Prof M S Swaminathan, who is both a Member of the Indian Parliament and an outstanding academician in the field of food security.



There are perhaps no better world with which to introduce the esteemed Professor than those of Norman Borlaug himself, who, accepting the Nobel Peace Prize all those years ago, said: “To Dr Swaminathan, a great deal of the credit must go for first recognizing 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”

So I am delighted that Prof Swaminathan – the father of the Green Revolution in our continent – is able to be here with us today. I know the international release of his new book, “In Search of Biohappiness”, has been times to coincide with this occasion – and I’m assured that it will be available in all good bookshops soon!

### **XIII. Present Honorary Positions**

- a) Member of Parliament (Rajya Sabha) (2007 onwards)
- b) Member, National Advisory Council (2010 onwards)
- c) Chairman of the M.S. Swaminathan Research Foundation established with the funds associated with the World Food Prize.
- d) UNESCO-Cousteau Professor in Ecotechnology for Asia
- e) Adjunct Professor in the field of Ecotechnology – Centre for Advanced Study in Botany, University of Madras.
- f) Chairman, CPR Environment Education Centre
- g) Honorary Chair on Sustainable Development of the Indira Gandhi National Open University
- h) Chairman, High Level Panel of Experts on Food Security and Nutrition of the Committee on Food Security (CFS), Rome

**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). He also served as the President of the Pugwash Conferences on Science and World Affairs (2002-07). President of the International Union for the Conservation of Nature and Natural Resources (IUCN) (1984-90).

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 66 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 served as President of the International Union for the Conservation of Nature and Natural Resources (IUCN) during 1984-90. He was President of the World Wide Fund for Nature (India) from 1989 to 1996.

Over a period of 60 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.

Among his many contributions as Director General of Indian Council of Agricultural Research (ICAR) during 1972-79, particular mention may be made of his designing and initiating on Agricultural Research Services (ARS) to provide opportunities for scientists for life long specialisation. ARS helped to attract and retain brilliant young scientists in the ICAR system.

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 several hundred 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 Goa, Himalayas and Western Ghats and the preparation of a draft National Population Policy and a draft Biodiversity Act.

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. He was the founder Chairman of the Iwokrama International Centre for the Sustainable Management of Rainforests. He has served as Chairman of the National Foundation for India and the Auroville Foundation.

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"*.

During 2004-06, Dr Swaminathan served as Chairman of the National Commission on Farmers (NCF). This is the first time either on colonial or independent India, that a National Commission on Farmers was set up. On the basis of the report of NCF, the Government of India announced a National Policy for Farmers in 2007.

### **Bio-data of Prof M S Swaminathan**

Professor M S Swaminathan has been acclaimed by TIME magazine as one of the twenty most influential Asians of the 20<sup>th</sup> century and one of the only three from India, the other two being Mahatma Gandhi and Rabindranath Tagore. He has been described by the United Nations Environment Programme as "the Father of Economic Ecology" and by Javier Perez de Cuellar, Secretary General of the United Nations, as "a living legend who will go into the annals of history as a world scientist of rare distinction". He was Chairman of the UN Science Advisory Committee set up in 1980 to take follow-up action on the Vienna Plan of Action. He served as Independent Chairman of the FAO Council, President of the International Union for the Conservation of Nature and Natural Resources and of the Pugwash Conferences on Science and World Affairs. He has also served as Chairman of the National Commission on Farmers during 2004-06 and is currently a nominated Member of Parliament (Rajya Sabha).

A plant geneticist by training, Professor Swaminathan's contributions to the agricultural renaissance of India have led to his being widely referred to as the scientific leader of the green revolution movement. His advocacy of sustainable agriculture leading to an ever-green revolution makes him an acknowledged world leader in the field of sustainable food security. The International Association of Women and Development conferred on him the first international award for significant contributions to promoting the knowledge, skill, and technological empowerment of women in agriculture and for his pioneering role in mainstreaming gender considerations in agriculture and rural development. Professor Swaminathan was awarded the Ramon Magsaysay Award for Community Leadership in 1971, the Albert Einstein World Science Award in 1986, and the first World Food Prize in 1987.

Professor Swaminathan is a Fellow of many of the leading scientific academies of India and the world, including the Royal Society of London and the U S National Academy of Sciences. He has received 66 honorary doctorate degrees from universities around the world. He currently holds the UNESCO Chair in Ecotechnology at the M S Swaminathan Research Foundation in Chennai (Madras), India.