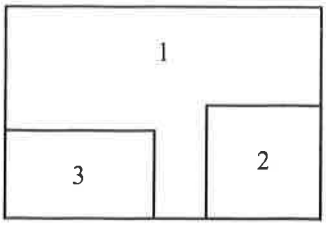
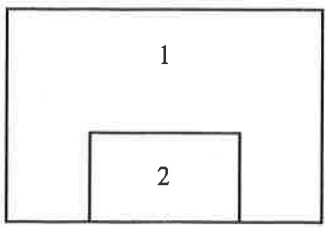
A Social Vision for Science

The history of the
M. S. Swaminathan Research Foundation
(1990 to 2000)



Front Cover

1. A view of the main building in August 2000
2. The inner courtyard
3. Harvesting sunlight with solar photovoltaic panels on the roof

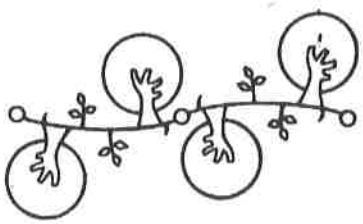


Back Cover

1. J.R.D Tata Ecotechnology Centre in 2000
2. K. N. N. S. Nair, Vice-Chancellor, Kerala Agricultural University and K. F. Thomas, Farm Manager, lay the foundation stone for the Community Agrobiodiversity Centre in Wayanad, Kerala, 5th June 2000

A Social Vision for Science

The history of the M. S. Swaminathan Research Foundation, Chennai
(1990 to 2000)



M. S. Swaminathan Research Foundation
Third Cross Road, Taramani Institutional Area
Chennai 600 113, India

August 2000

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M. S. SWAMINATHAN RESEARCH FOUNDATION

BOARD OF TRUSTEES

Contents

Preface

"Be the change you want to bring about."

Mahatma Gandhi

MSSRF was established at a time when humankind started facing serious ecological and social problems — growing damage to the basic life support systems of land, water, forests, biodiversity, and atmosphere; increasing poverty as well as social and gender inequity; rapid growth in human population resulting in reduced per capita availability of land and water; and explosive technological development coupled with high rates of unemployment, resulting in jobless economic growth.

All these factors led to MSSRF defining its research agenda in terms of **sustainable development,** rooted in the principles of ecology, social and gender equity, employment generation, and economic viability. The fostering of a pro-nature, pro-poor, pro-women, and pro-employment orientation to technology development and dissemination in rural areas became MSSRF's mission. If technology was an important factor in the past in increasing economic and social disparities and causing ecological harm, MSSRF's approach has been to enlist appropriate blends of traditional and frontier technologies as allies in the movement for economic and ecological well-being and gender equity. In the field of agriculture, MSSRF's goal became one of spreading an evergreen revolution based on sustainable advances in biological productivity. This emphasised the need to place efforts to increase crop productivity on the foundation of integrated natural resources management.

Chennai was chosen as the headquarters of the Foundation in 1989, both because of the choice of coastal areas for the initial research and training programmes and the generous assistance rendered by the government of Tamil Nadu in providing one hectare of land in the Taramani Institutional Area. Later, another hectare of land was granted in the same area, so that the campus of MSSRF at Chennai now covers two hectares.

The first activity of the Foundation was started in July 1989, in guestrooms of the Anna University and the Indian Institute of Technology, thanks to the unstinting support of the authorities of these two institutions. In April 1990, the Foundation moved to a rented building in Kotturpuram with three staff members:

Dr. Rajeshwari Mahalingam (now Dr Rajeshwari Anand), Mr. N. Parasuraman, and Ms. R. Radha.

The quotation from Gandhiji cited at the beginning has guided the activities of the Foundation right from its inception. Thus, while designing its building in the Taramani area in 1992, the first principle was that it should help to harvest rain and sun. Rain water harvesting devices were incorporated in the architectural design and a 20 kV solar photovoltaic system was installed to provide uninterrupted power supply to computers. Based on the concept that the building must itself be a message, greenhouses were put up at the entrance to grow plants which are threatened with extinction, so that enthusiasm could be generated in saving plants to save the future of our children.

MSSRF has operated during the last ten years on the principle of partnership with rural and tribal women and men. Consciously, the Foundation chose not to have its own experimental farm, but to work with farming families in their fields in a participatory research mode. It has considered the tribal and rural families working with its young staff members as partners and innovators, and not as "beneficiaries". The aim is to encourage young researchers to respect all knowledge, whether emanating from an illiterate or semi-literate rural woman or man, or from a Ph.D-holding scientist. It is this genuine partnership based on mutual esteem, between those whose wisdom grows from real life experience and toil in sun and rain and those with advanced academic training, that has given MSSRF its scientific strength.

The last ten years have been a time of adventure in fostering a new social contract between scientists and the economically and socially underprivileged sections of rural society. The story of this endeavour is briefly captured in this publication.

The writing of this narration was started by Mr. C. K. Ramachandran when he was heading the Budget and Accounts section of MSSRF. Ms. Gita Gopalkrishnan reworked the manuscript and edited it for publication. Thanks are also due to Mr. Peter of Reliance Printers for his commitment to excellence in get-up and printing and to Mr. K. Udayakumar for his dedicated photographic services.

M. S. SWAMINATHAN

August 2000

Introduction

The M.S.Swaminathan Research Foundation (MSSRF), an autonomous non-profit trust, was registered in 1988 at New Delhi with initial funds coming from the World Food Prize which Dr. M.S.Swaminathan received in 1987. Its major aim was to organise research and training designed to promote a job-led economic growth strategy in rural areas, based on a pro-nature, pro-poor, and pro-women orientation to technology development and dissemination.

It was decided to shift the activities of the Foundation to Chennai (Madras) since Tamil Nadu was considered an ideal location to address the issues relevant to its objectives and to start some of its initial operations like those relating to coastal ecosystems. Since, at that time, several government departments did not give project support to trusts, MSSRF established a registered society (the Centre for Research on Sustainable Agricultural and Rural Development) under the Tamil Nadu Societies Registration Act in 1990.

MSSRF's priorities were determined to be:

- the conservation and enhancement of natural resources — particularly land, water, and biodiversity
- the promotion of sustainable and equitable agricultural and rural development
- the development of ecologically sound and economically and socially viable 'eco-technologies' by integrating traditional and frontier technologies
- the generation of greater opportunities for skilled employment, particularly for rural women and youth
- reaching the unreached and voicing the voiceless in terms of techniracy and gender equity

In terms of sustainable human welfare, these scientific goals should lead to a concurrent strengthening of the ecological security of rural areas and the livelihood security of rural families. The concept of sustainability has to be a dynamic one, leading to a continuous improvement of biological productivity on an ecologically, economically, and socially sustainable basis. It is to this pathway of agricultural and rural development that MSSRF is dedicated. From the beginning, MSSRF has been designed as a scientific and training institution "without walls", i.e., an institution which relies on partnerships for its vitality and effectiveness.

Designed to converge on this goal of promoting a pattern of agricultural and rural development rooted in the principles of ecological sustainability, economic efficiency,

and social and gender equity, MSSRF undertakes activities in the five major programme areas of Coastal Systems Research, Biodiversity and Biotechnology, Ecotechnology and Food Security, Gender and Development, and Informatics.

The overall management of the Foundation vests with the Board of Trustees. The Executive Director performs the functions of the Chief Executive, attending to all administrative, technical, and management matters. He is supported by the Programme Directors who are responsible for the five programme areas. The Management Committee helps in administration and personnel management, staff welfare, finance, and infrastructure maintenance. The Programme and Academic Committee is responsible for annual and periodic technical reports to donor agencies, review of publications, project monitoring and programme reviews, and inter-programme linkages. Principal Scientists head different projects. There is a supporting research and project staff of Research Associates and Research Fellows. The area of administration is well looked after by managerial and secretarial staff. From a beginning of three in 1990, there are now 210 persons on the rolls of MSSRF. Apart from these, there are several Distinguished Fellows and part-time consultants. Every effort has been made to provide staff members with opportunities for professional growth. MSSRF is an equal opportunity employer where men and women professionals have equal rights and responsibilities. At every level, authority and accountability are integrated.

MSSRF has strong inter-linkages with other scientific institutions, both national and international. The Foundation is recognised as a Post-Graduate Research Centre by the University of Madras, Anna University, Chennai, and the Osmania University, Hyderabad. Over ten Research Fellows have done their Ph.D research at MSSRF since 1990. Several other Research Fellows are currently doing their doctorate work. There is a growing output of research papers and technical publications, besides monographs and reports of Dialogues and Conferences.

MSSRF runs a Community Agrobiodiversity Centre at Kalpetta at Wayanad in the state of Kerala. In addition, there are a series of projects in Pondicherry (Biovillage and Information Village Projects), and at Chidambaram, the Kolli Hills, and Kannivadi (Dindigul district) in Tamil Nadu. MSSRF works in Andhra Pradesh, Orissa, and West Bengal, too. Outside Tamil Nadu, the largest number of projects is in Orissa.

The main source of funding for the research, educational, and networking activities of MSSRF have been the monies of the various prizes received over the years by Dr. M. S. Swaminathan that he has donated to the Foundation. These include:

The World Food Prize, 1987
The Honda Prize for Ecotechnology, 1991
The Tyler Prize for Environmental Achievement, 1991

The UNEP Sasakawa Environment Prize, 1994
The Volvo Environment Prize, 1999

The Blue Planet Prize (1996) was given directly to the Foundation.

Financial grants have been awarded by the governments of India and the state of Tamil Nadu. The Foundation is associated with a large number of UN agencies like UNDP, FAO, UNESCO and UNIDO, as well as the Asian Development Bank, the International Fund for Agricultural Development (IFAD), and other multilateral and bilateral donors. The earliest international support came from the International Tropical Timber Organisation (ITTO), Japan. ITTO supported the mangrove conservation work and the organisation of an international training programme. The Swedish International Development Agency (SIDA) provided for biodiversity research and, more importantly, for the research infrastructure. MSSRF's first building was constructed largely from SIDA's support as well as the money associated with some of Dr. Swaminathan's prizes. Shri B. R. Barwale and the late Shri Ramkrishna Bajaj also extended generous support. The Department of Biotechnology (DBT) of the Government of India has supported MSSRF's genetic enhancement programme involving mangrove genetic resources. The anticipatory research programme designed to meet the challenge of coastal salinity arising from a potential rise in sea level is also being funded for by DBT. The Bernard Van Leer Foundation and the Hunger Projects of India, Japan, and Sweden have assisted the programmes relating to children and women and to harnessing traditional media for achieving the goals of gender justice and empowerment.

At the moment, there are large projects supported by the India-Canada Environment Facility and the Swiss Agency for Development and Co-operation (SDC) in the field of biodiversity. The Ford Foundation has given a major grant for the corpus fund. Many other private philanthropic foundations like the Sasakawa Peace Foundation in Japan, the MacArthur Foundation, the Summit Foundation in the United States, and the Volkardt Foundation in Switzerland have been generous with their help.

A significant recent development is the organisation in Tokyo, Japan, of a group of donors dedicated to the cause of environment protection and poverty eradication. This group titled "Friends of MSSRF" headed by Dr. (Ms.) Geeta Mehta, Adjunct Professor of Urban Studies, Temple University in Japan, has been providing generous support to the organisation of rural self-help groups engaged in micro-enterprises supported by micro-credit.

The Early Years : 1990 to 1993

MSSRF started its research work with the help of infrastructural facilities provided by the Anna University and the Indian Institute of Technology, Madras, where Dr. M. S. Swaminathan was appointed Honorary Research Professor. Four important conferences supported by national and international bodies were organised at Chennai. They were:

- The Keystone International Dialogue on Plant Genetic Resources
- Asian Network on Biological Sciences
- Meeting of the International Society for Mangrove Eco-systems
- Wheat Revolution in Asia - A Dialogue

It was decided to organise a major inter-disciplinary dialogue on a topic of contemporary relevance at the beginning of each year. The 1991 Dialogue on *New Technologies: Reaching the Unreached* related to biotechnology. This resulted in the organisation of biovillages. The 1992 Dialogue, on *Information Sciences and Technology*, explored the possibilities of reaching the benefits of information and communication technologies to the rural poor. The participants, a broad spectrum of experts from India and abroad, designed prototype 'Information Villages' where value-added and location-specific information would reach every doorstep. In 1993, the Dialogue on *Ecotechnology and Rural Employment* generated useful ideas for promoting a job-led economic growth strategy based on environmentally and socially sustainable technologies. The biovillage became the scene for ecotechnology in action.

The first research proposal of the Foundation related to the setting up of a Genetic Resource Centre for Adaptation to Sea Level Rise at Pichavaram (a coastal base at Chidambaram, in the state of Tamil Nadu). On its being granted financial support by the Department of Biotechnology, Government of India, rented premises were taken up at Kotturpuram where the laboratories and administrative office were set up. Recruitment of staff commenced on 1 April 1990. The Tamil Nadu government granted 2.5 acres of land on a 30-year lease in the Taramani Institutional Area at Chennai, and steps were initiated to design MSSRF's permanent establishment. The foundation stone of the building was laid on 14 April 1991.

MSSRF's first international support came from the International Tropical Timber Organisation, Japan, which approved a project for developing a network of genetic

resource centres for conserving the germplasm of mangrove forest species and for establishing a Mangrove Ecosystem Information Service (MEIS). The ITTO project also included provision for organising an international training course for managers of mangrove genetic resource centres. This was attended by 20 participants from 12 countries.

Other projects during this time included the Biovillage Project and the Coastal Systems Research, begun with the respective support of the Asian Development Bank and the Sir Dorabji Tata Trust, Mumbai, and the International Development Research Centre (IDRC) of Canada. The Swedish International Development Agency (SIDA) agreed to fund a Biodiversity programme for four years. This also received support from several other institutions at home and abroad. The Department of Biotechnology of the Government of India approved financial support for a 5-year project on the Application of Biotechnology in the Conservation of Endangered Plant Species for Genetic Enhancement. This grant helped the Foundation to establish the molecular biology, microbiology, and tissue culture laboratories.

MSSRF was deemed the headquarters for the Tamil Nadu Council for Achieving the Threshold for a Productive and Healthy Life for All. The Hunger Project gave support to this major programme in the areas of awareness generation, education and economic opportunities for women, co-ordinated planning and action in achieving the threshold, and for training.

Professor M. S. Swaminathan was a member of the Indian delegation led by the Prime Minister to the UN Conference on Environment and Development held in Rio de Janeiro in June 1992. The principles and goals enunciated in Agenda 21 of the Rio Conference were integrated in an appropriate manner in the concerned areas of the Foundation. The 1993 Human Development Report of the United Nations Development Programme (UNDP) drew attention to a dangerous phenomenon in global economic development, that of jobless economic growth. Keeping in view the objectives of the Foundation, priority was accorded to enhancing human skills. In the case of rural and tribal women without assets like land or livestock or specialised skills, it was decided that the goal should be to reduce the number of work hours per day and add economic value to each hour of their work by training them in skilled jobs.

The beginning of 1993 saw MSSRF move into its own building. Several environmental principles were incorporated in its structural design. The courtyard was planned to depict the five ecological zones — *kurinchi, mullai, marutham, neital, and palai* — described in classical Tamil literature. The use of wood in the structure was restricted, rain water is harvested and diverted to the aquifer, and computers were to be run on

solar energy. On 14 April 1993 (Tamil New Year), it was formally dedicated to the use of science for fostering sustainable human livelihood and the conservation of nature. On that occasion, the Chief Minister of Tamil Nadu announced the allotment of an adjoining 2.5-acre plot of land to enable the expansion of the M.S.Swaminathan Research Foundation. Generous backing from its various supporters has helped in establishing the infrastructure in this building to maintain its excellent research facilities.

Gaining in Strength : 1994 to 1997

The highlight of this period of growth in MSSRF's history was its being awarded the 1996 Blue Planet Prize. On 5 June 1996, World Environment Day, the Foundation's staff members received the news with great pride and joy. This prize was instituted by the Asahi Glass Foundation of Japan on the occasion of the UN Conference on Environment and Development held at Rio in June 1992. It was a recognition of the efforts by MSSRF to promote sustainable livelihoods in rural areas and conservation of natural resources. MSSRF is the first and only institution in Asia chosen so far for this prize.

Research projects continued to be undertaken. Memoranda for short and long term projects were signed with the Indian Council of Agricultural Research (ICAR), Council of Scientific and Industrial Research (CSIR), Department of Biotechnology, Ministry of Environment and Forests (MOEF), Wasteland Development Board of the Government of India, Council for Advancement of People's Action and Rural Technology (CAPART), the Rajiv Gandhi Foundation, and the Hunger Project. International backing came from SIDA, the Canadian International Development Agency (CIDA), the Darwin-Initiative (U.K.), FAO-Rome, UNDP, and the Norway International Developmental Agency (NORAD), among others.

Funding was received from the John D. and Catherine T. MacArthur Foundation of U.S.A. for the preparation of training modules for enabling grassroot-level democratic institutions to prepare socio-demographic charters. The same Foundation also gave a grant for a period of three years to promote conservation and commercialisation in tribal areas in a mutually reinforcing manner.

Under the World Bank-assisted Tamil Nadu Agriculture Development Project (TNADP), a grant was received for the development of multi-media data bases on Intensive Integrated Farming Systems in the five major agro-ecological zones of Tamil Nadu. IDRC, Canada, approved a grant for assisting MSSRF's Mangrove Ecosystem Information Service to strengthen its capacity to support the work of the Indian Sustainable Development Network as well to enable participation as an important node of the Network. A Coastal Wetland-Mangrove Ecosystem Project was financed by the India-Canada Environmental Facility (ICEF) to standardise technologies and management practices in coastal wetland areas. This is the largest project of its kind in India, covering the states of Tamil Nadu, Andhra Pradesh, Orissa, and West Bengal.

Some of the other interesting outcomes :

- The Deustche Gesellschaft Fur Technische Zusammenargeit (GTZ) of Germany funded a project on Traditional Conservation of Biodiversity by Tribal Communities.
- The International Atomic Energy Agency (IAEA), Vienna, assisted a project on Design of Database on Intra-specific Variations in Plant Species of Mangrove Ecosystems.
- The Netherlands Government financed the organising of an Agro-Biodiversity Conservation Corps.
- The Global Environmental Facility (GEF) of the United Nations requested MSSRF to prepare a report on *Agro-Biodiversity: Conservation and Sustainable Use.*
- SDC sanctioned an assignment on Establishing and Disseminating Multimedia Database on Agro-biodiversity and its Utilisation by Farm and Tribal Communities as a component of the Resource Centre for Farmers' Rights.
- The Department of Scientific and Industrial Research (DSIR) of the Government of India asked the Foundation to undertake a study for National Mapping of Science using databases under the Informatics programme of NISSAT.
- On the recommendation of the Government of Tamil Nadu, a long-term project was approved by the Council for Advancement of People's Action Technology (CAPART) for establishing a Technical Resource Centre for Rural Technology at MSSRF.
- The Bernard Van Leer Foundation supported a project for advocacy, networking, training, communication, and resource materials development on issues related to the young child, including strengthening of a non-governmental network to advocate the cause of the young child.

The Foundation was host to the Science Academies' Summit on Uncommon Opportunities for a Food Secure World. It also organised the Workshop on Science & Technology for Asia/Pacific Women Scientists for Sustainable Development. The concept of an All Women Biotechnology Park was the result of this meet. Two other important consultations that took place under the aegis of MSSRF were:

- Impact of Climate Change on Food and Livelihood Security: An Agenda for Action
- Agrobiodiversity and Farmer's Rights: Technical Consultation on an Implementation Framework for Farmers Rights

The International Dialogue on *Methodologies for Recognising and Rewarding Informal Innovation in the Conservation and Utilisation of Plant Genetic Resources* was held in 1994. Attended by 54 experts from 12 countries, this resulted in the formulation of draft legislation for adoption by governments. This draft act was the first to convert the universally agreed concepts of breeders' and farmers' rights into an administratively

The late M. V. Arunachalam of EID Parry & Co releasing the first brochure, 1990

The house at Kotturpuram, 1990

The first team, early 1991

Architect A. Venkat explains the building plan to elder statesman C. Subramaniam

The late Malcolm Adiseshiah lays the first brick in the Foundation, 14 April 1991

Friends line up to lay bricks after M. S. Swaminathan

Governor Shri Bhishma Narain Singh gives certification of merit to Mai Sy Tuan of Vietnam at the Convocation of the ITTO-sponsored International Training Programme on "Conservation of Mangrove Forest Genetic Resources", 22 May 1992

Inauguration of the main building at Taramani, 14 April 1993
Invocation - M. S. Subbulakshmi and Mani Krishnaswami

Felicitations by H. E. Song Jian, Deputy Prime Minister of China

Madhur Bajaj dedicates
the Bajaj Hall to commemorate his parents,
Ramkrishna Bajaj and Vimla Bajaj,
17 October 1993

Friends a

Mathuram Bhoothalingam
opens Bhoothalingam Library,
6 January 1994

Scarascia Mugnozza in front of
the Genetic Resources Bank named
for him, 27 January 1994

B. R. Barwale,
Chairman, MAHYCO,
at Barwale Hall, 28 January 1994

M.K. Narayanaswamy
hall is opened on
13 April 1994

d Sponsors

N. Ravi, Editor, *The Hindu*, speaks at a meeting of *The Hindu* Media Resource Centre, August 1998

Ratan Tata, Chairman, Tata Sons and Susan Berresford, President, Ford Foundation

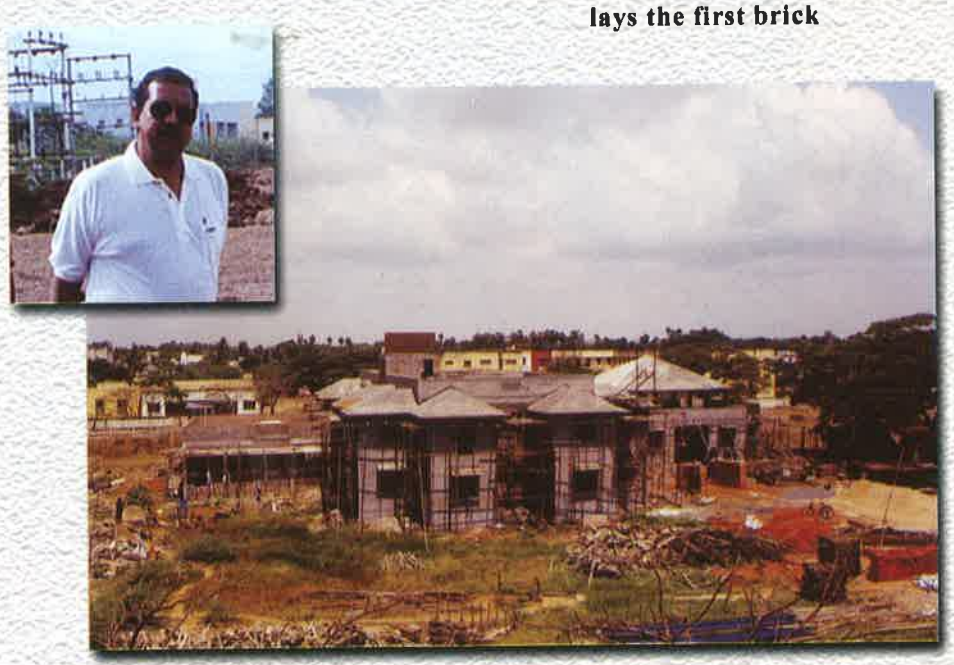
V. L. Chopra, former Director-General of ICAR, Founder-Trustee

**Norman Borlaug, Nobel Peace Prize Laureate,
Mohammed El Ashry, Chairman and CEO, Global Environment Facility,
and other friends at the opening of the Borlaug Hall, 4 February 1996**

Blue Planet Prize, 31 October 1996

14 April 1996 - another new beginning - Amiya Kesavan and P. C. Kesavan (now the Executive Director) laying bricks for the J.R.D. Tata Ecotechnology Centre

Emeritus Professor T. S. Sadasivam lays the first brick



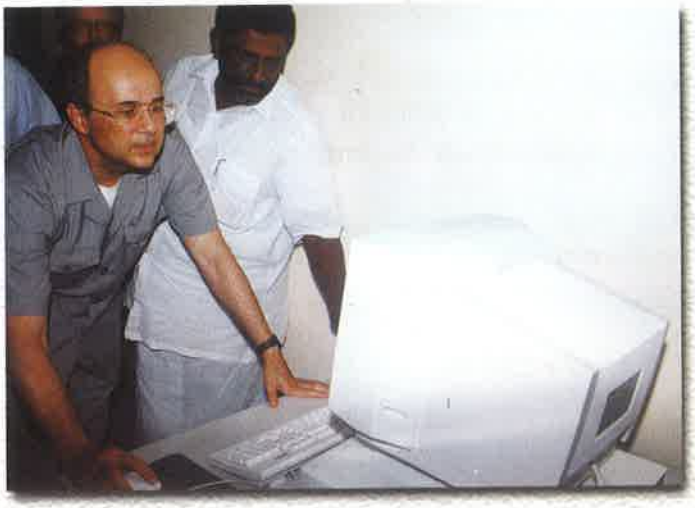
The new building grows under the watchful eyes of builder M. Balasubramaniam

Anuradha Desai, Chairperson, Venkateshwara Group, dedicates the B. V. Rao Centre for Sustainable Livelihoods and the Uttara Devi Resource Centre in Gender and Development in memory of her parents, 22 September 1997

J.R.D. Tata Ecotechnology Centre inaugurated by President K. R. Narayanan, 29 July 1998

Governor of Tamil Nadu, M. Fathima Beevi, Chief Minister of Tamil Nadu, M. Karunanidhi, Union Minister for Science and Technology and Human Resources Development, Murali Manohar Joshi, at the inaugural ceremony

Portrait of J.R.D. Tata unveiled



**Ismail Seregeldin, Vice President,
World Bank at launch of Infovillage, 1 February 1998**

**Bruce Alberts, President, US National Academy of Sciences and
R.A. Mashelkar, Director-General of CSIR, at Embalam Village Knowledge Centre,
January 1999; an operator at the Village Knowledge Centre at Kizhur**

**Inauguration of Biocentre at Pondicherry by Brenda Gael McSweeney,
Resident Representative of UNDP, India, April 1999**

implementable legal document. It evoked widespread interest in the Ministry of Agriculture, Government of India, as well as international organisations connected with this issue like FAO and the Union for the Protection of New Varieties of Crop Plants (UPOV).

The 1995 Dialogue was on a *New Deal for the Self-employed: Role of Credit, Technology and Public Policy.* The Dialogue received wide support from agencies at home and abroad since it proposed a methodology for linking the formal credit system with community banking systems operated by rural self-help groups. Economically and ecologically sustainable micro-enterprises are linked to low transaction-cost microcredit systems.

In 1996, under the Dialogue series, the Foundation hosted the Asian Regional Workshop on Ecotechnology and Shaping the Future. This laid the framework for the Asian Ecotechnology Network, a regional component of the Ecotechnie Programme of UNESCO and Equipe Cousteau. The participants worked together to formulate a plan of action for the Network's mission of catalysing the development and dissemination of ecotechnologies regionally. The conference also marked the inauguration of an UNESCO-Cousteau Chair at MSSRF with the announcement by Professor Federico Mayor, Director-General of UNESCO, that the first holder of the chair in Asia will be Professor M. S. Swaminathan.

In 1997, the Dialogue was an international meet on *Building Partnerships for Sustainable Food and Livelihood Security.* The participants came from a variety of organisations and backgrounds, reflecting the belief of the Foundation that they should result in a broad-based coalition. This year saw the start of public forums organised to help the public and the student community share their views with some of the distinguished thinkers who attend the Dialogues.

Phase I of the Biovillage Programme started by the Foundation earlier in three villages of the Union Territory of Pondicherry with the support of the Hunger Projects of Japan and Sweden and International Fund for Agricultural Development (IFAD), Rome, was successfully completed. Phase II of the project covering 19 villages received support from the United Nations Development Programme (UNDP) till the end of the decade. An Integrated Intensive Farming Systems (IIFS) study was initiated with support from FAO. Detailed case studies were undertaken to highlight prevalent farm practices in the country and on the possibilities of their wider adoption in future. Six other Asian countries were selected and the studies culminated in a workshop at the Foundation in February 1995.

Within MSSRF, the J. R. D. Tata Ecotechnology Centre was established to research,

The Honda Informatics Centre collects, collates, and disseminates actionable information through various database services, shares technical resources to enhance capacity building of information networking, and makes information available in the public domain. It provides scholars and researchers in agriculture and the environmental sciences access to a large collection of CD-ROMs and multimedia databases. The Informatics Centre offers technical support to training programmes in collaboration with other projects in MSSRF and outside organisations. The main purpose is to enhance capacity building in creating databases and adopt the technology as a tool to access information.

The management of *The Hindu* group of publications has endowed *The Hindu* Media Resource Centre for Ecotechnology and Sustainable Development. Establishment of this Centre has filled a felt need in the links between scientists and the media. The strategy is to provide data and information services to media practitioners, thus obtaining more space in the mainstream media for scientific issues of public concern. Individually, people need to be equipped to deal with the choices that new knowledge and technologies offer. In tune with MSSRF's policy of organising annual dialogues and public forums of debate, the Media Centre sponsors public lectures to provide an understanding of all the dimensions of key issues like hunger, poverty, population and environment, and sustainable food security. Some recent lectures include:

- April 1999: Hunger Project Millennium Lecture on "Hunger, Poverty, Population and Environment" by Dr. Maurice S. Strong, UN Under Secretary-General and Special Advisor to the UN Secretary-General and to the President of the World Bank.
- April 1999: "Towards a Hunger-free Century" by Dr. Jacques Diouf, Director-General of the Food and Agriculture Organization of the United Nations.
- September 1999: "Informatization and Development" by Professor Harlan Cleaveland, President World Academy of Art & Science, Former U. S. Ambassador to NATO and Former U. S. Assistant Secretary of State.
- December 1999: "The Ecology and Economy of Hope" by Dr. Norman Myers, Oxford University, U. K.
- February 2000: "Urban Food Security" by Professor Joseph Hulse, Siemens-Hulse, Canada

The concept of the information village emerged from the discussions in the 1992 Annual Dialogue. The role of modern information and communication technology was envisaged where input of knowledge makes a positive difference in advancing rural livelihood security. In collaboration with IDRC, MSSRF has initiated a pilot project in villages in the Union Territory of Pondicherry to test whether Information Technology can become an ally in poverty alleviation and whether it can be used as a tool in empowering the rural poor. Seven Village Knowledge Centres have been set up, each with a computer, a modem, and a wireless system. They are backed by solar power.

Tamil is used for all information exchange. The database services provided by these centres are: gathering and transmission of information such as commodity prices, weather, government announcements, daily news; generation of data like surveys, library references, discussions, issue of bulletins; creation/maintenance of locality-specific databases on local hospitals/doctors, training programmes, high school/college course guidance, government welfare programmes/entitlements, transport, local experts in agriculture and fisheries, key government organograms/contacts, official list of families below poverty line, and soil agronomy/weather/cropping patterns.

MSSRF has established linkages with industries, adopting the triple helix model of partnership involving business and industry, resource-poor farm women and men, and scientists. The Hindustan Lever Research Foundation supported the undertaking of a project on bioconservation and utilisation of minor millets. The Indo-American Hybrid Seed Company provided seed material for establishment of Seed Villages. FICCI, the Indian Overseas Bank, and the Southern Petrochemicals Industrial Corporation (SPIC) sponsored projects for water harvesting and the establishment of Pulses Villages in the dry farming areas. Trusts attached to the Bajaj family gave a grant to establish the Ramkrishna Bajaj Fellowship for industry-community partnership for the sustainable end of hunger and for promoting symbiotic partnerships between private and public sector industry and resource-poor tribal and rural families in the areas of increased food production and improved access to food.

The Foundation was requested by United Nations Environment Programme (UNEP), Nairobi, to prepare a project support document entitled *A Conceptual Framework for Promoting Benefit Sharing of Conservation and Use of Plant Genetic Resources.* On behalf of FAO, a paper on *The Impact Evaluation of FAO Support to the Development of Higher Education and Agricultural Research in India* was put together. On behalf of the Ministry of Environment and Forests of the Government of India, the Foundation prepared the first national report to the Convention on Biological Diversity for consideration by the Global Environmental Facility (GEF) Council. GEF also approved a project for preparing a proposal for conserving India's Gulf of Mannar Marine Biosphere Reserve. With the support of the state's Forest and Fisheries Departments, this proposal has now reached the point of implementation.

IDRC, Canada, supported a project on Field Verification, Demonstration, and Training in the Use of Medicinal Plants in the state of Kerala. This project is being implemented at MSSRF's Community Agrobiodiversity Centre set up at Kalpetta in the Wayanad district of Kerala in land made available by the family of Professor M. S. Swaminathan. IDRC also sanctioned support for a programme to study the impact of information technology in rural areas.

The Bernard Van Leer Foundation, Netherlands, continues to support a project on development of communication and resource materials, and capacity building related to child care and development. Media strategies for advocacy among policy makers and awareness generation among the public are the highlights of this programme.

The Ramon Magsaysay Award Foundation has provided for the development of a database of On-farm Genetic Resources Conservation by Rural and Tribal Families in the rice tracts of Jeypore in the state of Orissa.

A project on Strengthening Rural Livelihoods through Agro-industries with Specific Reference to Tribal and Rural Women has been jointly undertaken with the Central Food Technological Research Institute, Mysore. This project is fully supported by the Foodlinks Initiative of IDRC.

The Coastal Systems Research Programme was further extended during the year through a joint research project with the Bhabha Atomic Research Centre (BARC), Mumbai, financially supported by the Department of Atomic Energy of the Government of India. Under this very important scheme, nuclear and biotechnological tools are being applied to improving the productivity, profitability, and sustainability of coastal agriculture and aquaculture and in the establishment of pulses and groundnut villages. The Department of Atomic Energy also established the Homi Bhabha Chair on Nuclear Science and Rural Society at the Foundation. Professor P. C. Kesavan is the first holder of this Chair.

The SDC-supported project on the conservation, enhancement, and equitable use of biodiversity is in progress in the states of Tamil Nadu (Kolli Hills), Kerala (Wayanad), and Orissa (Jeypore). This has helped the Foundation to intensify its research in the areas of conservation, sustainable use, and equitable sharing of benefits, which are the three cardinal principles of the global Convention on Biological Diversity.

The Department of Biotechnology (DBT), Government of India sponsored the ongoing programme on Bioprospecting. Genetic Enhancement and Biomonitoring has made significant progress during the last few years. This project has a mandate of identifying novel genetic combinations from the mangrove species and providing new pre-breeding genetic material to grassroot level breeders for developing location specific crop varieties capable of offering tolerance/resistance to coastal salinity.

Among the several conferences, workshops, and meetings organised by the Foundation, the Annual Inter-disciplinary Dialogue in 1998 was on *Malthus and Mendel: Population, Science, and Sustainable Food Security*. The 1999 Dialogue had as its theme *Climate, Biotechnology, Food and Water Security*. An international training course, sponsored by ITTO, Japan, on Timber Trade Statistics for Professional Foresters was attended by 45 participants from 16 countries.

During the 86th session of the Indian Science Congress held at Chennai, MSSRF organised a National Consultation on Genetically Modified Plants: Implications for Environment and Food Security and Human Nutrition. Nobel Laureate Professor James D. Watson inaugurated this consultation. The Foundation was also the host for the Asia-Pacific Regional Workshop on Biosafety organised in collaboration with the United States Department of Agriculture (USDA) and Cornell University in 1997. This workshop was attended by 81 participants from 16 countries.

The Foundation works with the rural and tribal poor at the grassroot level and with policy makers at the state and national levels. The Foundation believes that synergy between technology, public policy, and social action can alone help to achieve the goal of environmentally and socially sustainable job-led economic growth. MSSRF has hence played an active role in developing draft legislation for Plant Variety Protection and Farmers' Rights, and Biodiversity Conservation.

Early in 2000, Shri Digvijay Singh, Chief Minister of Madhya Pradesh launched at MSSRF a National Network on Biovillages and Community Banking. This Network brings together MSSRF, the Dhan Foundation, Madurai, the Bharatiya Agro-Industries Foundation, Pune, and the Society for the Promotion of Wasteland Development, Delhi, to combine their complementary strengths in the fields of natural resources management and poverty eradication. Also, a Centre for Precision Farming for Poverty Eradication was established at Kannivadi in Tamil Nadu with financial support from the National Bank for Agriculture and Rural Development. This Precision Farming Centre has the benefit of collaboration with the Arava R & D Centre in Israel. In July 2000, the Sir Dorabji Tata Trust approved an interdisciplinary project to be undertaken jointly with the Ohio State University, USA, for developing sustainable land, water, and crop management systems for red (alfisols), black (vertisols), and alluvial soils. In August 2000, MSSRF received the Motorola Dispatch Solutions Gold Award for outstanding and innovative contributions in the use of two-way radio communications in rural areas.

The final objective of all the above programmes and partnerships is to promote an ever-green revolution in agriculture and to create more income and livelihood opportunities for rural families in an environmentally and socially sustainable manner.

Looking Ahead

The M. S. Swaminathan Research Foundation has a positive mission for the future: to mobilise frontier technologies and traditional tools and wisdom as allies in the movement for food security and social and gender equity, and to foster a new social contract between scientists and rural and tribal families for the concurrent enhancement of ecological and livelihood security and human well-being.

The goals to achieve this have been formulated as:

- Consolidation of programmes and concentration in areas where MSSRF has established a niche and has gained national and international reputation on the basis of the work done in the last decade
- Well-defined and quantifiable outputs in relation to the MSSRF mandate for promoting job-led economic growth in villages based on a pro-nature, pro-poor, pro-women orientation to technology development and dissemination
- Development and spread of ecotechnologies through a blend of traditional wisdom and frontier technologies, particularly bio-technology and information, communication, space, nuclear, and renewable energy technologies, and organisation of biovillages and virtual colleges for this purpose
- Promotion of ethics and equity in benefit sharing with reference to the conservation and enhancement of biodiversity
- Action as a Technical Resource Centre in selected areas like gender, precision farming, biotechnology, farmers' rights, and media liaison, and as the co-ordinating centre for national and regional networks
- Promotion of the professional growth of MSSRF staff members and promotion of a work culture which stresses harmonious inter-disciplinary co-operation and participatory processes
- Establishment of linkages between research, advocacy, and policy studies, supported by documentation and use of communication strategies

The priorities for the research, training, and development activities in MSSRF's Programme Areas for the next five years are outlined here.

- Undertake programmes gendered in cultural studies and action, and mobilise theatre and folk media as instruments of education and gender equity.

Information, Communication, Training, Workshops, Dialogues, and Publications

- Organise postgraduate and non-degree educational programmes.
- Organise a network of community controlled and operated Knowledge Centres and Virtual Colleges based on modern information and communication technologies for assisting in the eradication of poverty and promotion of human well-being.
- Develop *The Hindu* Media Resource Centre for Sustainable Development into an important forum for dialogues on policies and controversial scientific issues.
- Undertake the development and dissemination of national and global databases in areas relevant to the mandate of MSSRF.
- Serve as a resource centre for the knowledge and skill empowerment of the women and men members of Panchayats and other local bodies in areas such as the implementation of prior informed consent, benefit sharing and Farmers' Rights provisions of the Biodiversity Bill, and Protection of Plant Varieties and Farmers' Rights Bill currently before the Parliament of India.
- Develop communication and dissemination strategies and materials, especially those involving mass media and popular communication forms, to build an interface between science and society.
- Undertake training and capacity building, including international training programmes.
- Organise seminars, workshops, and multi-disciplinary dialogues involving national and international participation.
- Undertake the preparation of publications, training modules, and educational resource material (audio, video, electronic, and printed products).
- Maintain library and documentation services (printed and electronic).
- Initiate a programme for interactive learning for children in the areas of environment protection and gene revolution.

Special Projects

- Undertake ad hoc consultancies in areas where MSSRF has the requisite expertise.

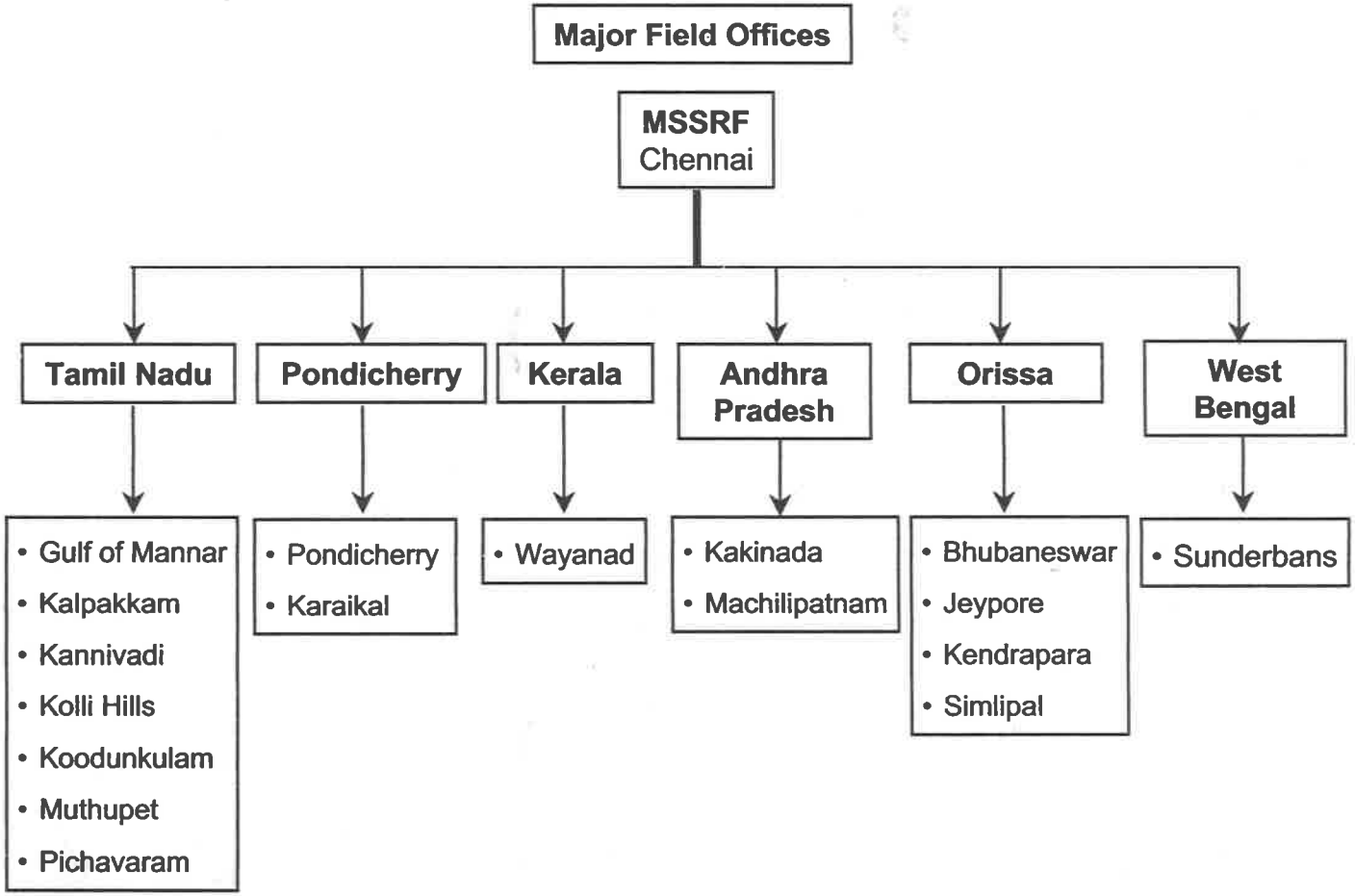
- During 2000, undertake the preparation of a Food Insecurity Atlas of India, indicating the "hot spots' with reference to the persistence of chronic hunger as well as the standardisation of indicators for measuring food security at the level of individuals within a household in selected districts of Orissa (both these consultancies are on behalf of the World Food Programme).
- Chronicle good practices for operationalising the benefit sharing provisions of the Convention on Biological Diversity at the project level (on behalf of UNDP/GEF).
- Prepare a Vision and Action paper for the Ministry of Agriculture, Government of India.
- Develop a strategy for converting all the villages of Pondicherry into Biovillages by August 2007.

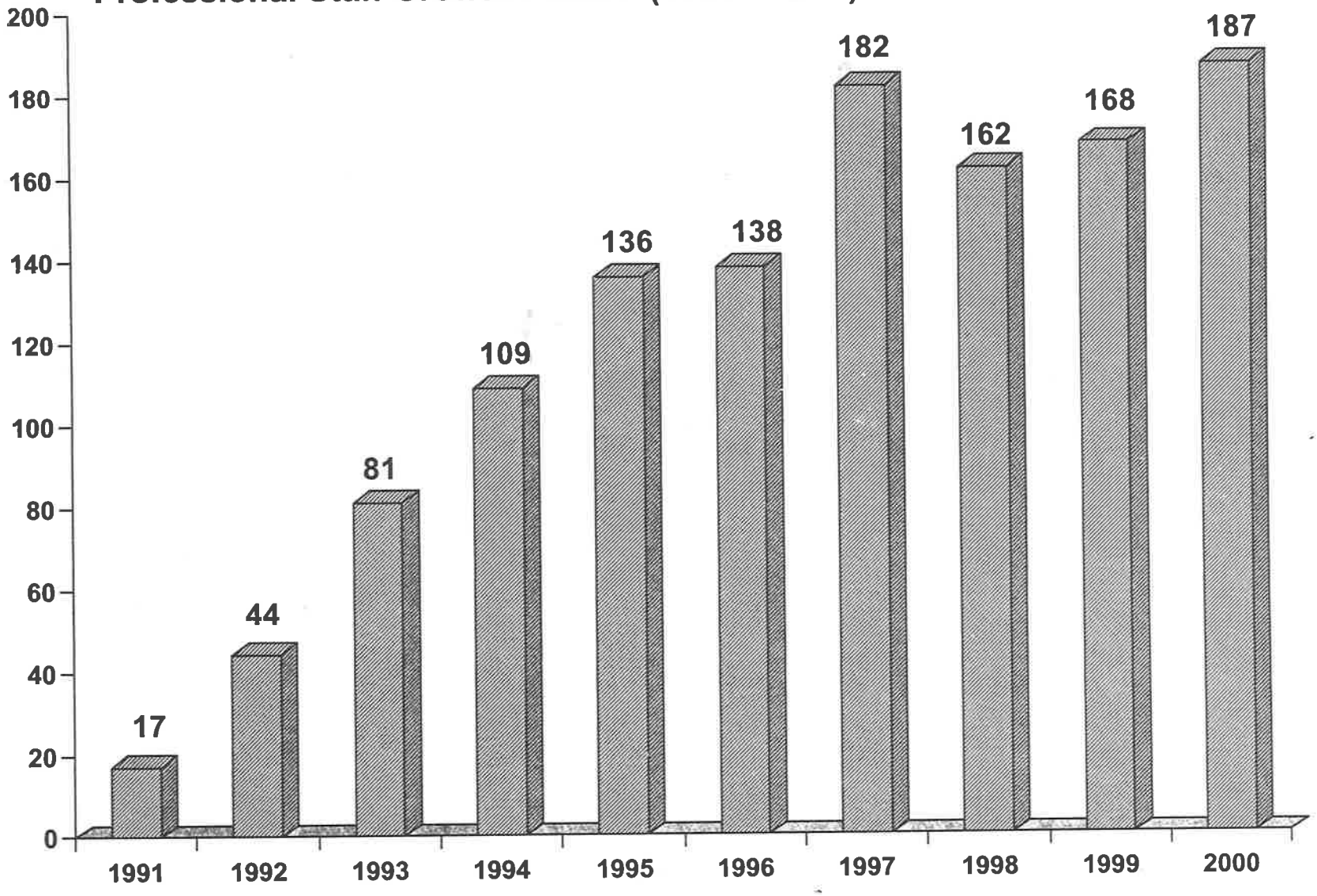
MSSRF will continue to have social relevance, scientific excellence, and special advantages as its guiding principles. Social relevance in the Indian context is poverty eradication and gender equity. Scientific excellence is enshrined in MSSRF's twin concerns of conservation of natural resource bases and securing sustainable livelihoods. MSSRF's special advantage is that as a non-governmental organisation it has the flexibility and freedom to form partnerships with other organisations.

The pathway to realise these principles is recognised as concentration on achieving scientific depth in studies, co-operation and partnership both within and outside the Foundation, and consolidation of the gains already reached in taking the work to a state of visible impact. The research methodology is to be the development and dissemination of ecotechnologies through action and participatory research, strategic research, and anticipatory research.

MSSRF wants to be a *mission-driven* organisation, not a *donor-driven* one. As long as the donor agencies share its goals and mission, the Foundation shall accept funding from them. While it accepts that it does need finance for sustaining its work, MSSRF nevertheless will not swerve from the basic principles that the institution stands for.

The road ahead promises to be exciting and challenging, and MSSRF is confident it will remain a "Foundation without walls" stretching out beyond all boundaries to reach the unreached.


Major Field Offices
MSSRF
Chennai
Tamil Nadu
Pondicherry
Kerala
Andhra Pradesh
Orissa
West Bengal
• Gulf of Mannar
• Kalpakkam
• Kannivadi
• Kolli Hills
• Koodunkulam
• Muthupet
• Pichavaram
• Pondicherry
• Karaikal
• Wayanad
• Kakinada
• Machilipatnam
• Bhubaneswar
• Jeypore
• Kendrapara
• Simlipal
• Sunderbans


Professional Staff Growth Pattern (1991 – 2000)
200
180
160
140
120
100
80
60
40
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0
17
44
81
109
136
138
182
162
168
187
1991
1992
1993
1994
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1996
1997
1998
1999
2000

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