

# **M.S. Swaminathan Research Foundation at 21:**

## **Report of the Independent Program Review**

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## **Foreword**

MSSRF started functioning in August 1989 first in the space kindly made available by the Indian Institute of Technology, Chennai and later in a rented building in the Kotturpuram area of Chennai. On April 14, 1993, the staff and scholars of MSSRF moved to their own building constructed in land made available by the Government of Tamil Nadu in the Taramani Institutional Area. In July 1998, the research and training infrastructure was further strengthened through the construction of the JRD Tata Ecotechnology Centre. A publication summarizing the work done during the period 1989-2009 was compiled in 2009. From the beginning, MSSRF has been working in the following interdisciplinary areas

- Coastal Systems Research
- Community Biodiversity Conservation
- Biotechnology with particular reference to preparation of genetic material which can help to mitigate the impact of climate change resulting in sea level rise, higher mean temperature and drought
- Ecotechnology leading to the blending of traditional ecological prudence with frontier technology
- Food security for achieving the goal of food for all and for ever
- Information, Education and Communication with particular reference to human resource development and the integrated use of the internet, cable TV, FM radio and the cell phone

In addition, MSSRF has occasionally undertaken assignments for preparing detailed strategies for overcoming agrarian problems, as for example, in the Idukki and Alapuzha districts of Kerala. Both external and internal reviews have been held from time to time to evaluate the progress made in accomplishing the goals of the different projects. However no comprehensive PAN-MSSRF review covering all the work done from inception had so far been carried out.

Towards the middle of 2008, I requested Dr. Uma Lele to conduct such a comprehensive review. She was kind enough to accept MSSRF's request and spare considerable amount of time during December 2008 and January 2009 for carrying out the review based on interviews with all the stakeholders including the donors, the scientists and scholars of MSSRF, a desk study of the published literature and a few field visits. The present report is the result of such a comprehensive analysis of both achievements and deficiencies. Dr Uma Lele was ably assisted by Dr Kavita Gandhi in this task. This publication contains their report which was discussed at the Board meeting held on April 1, 2009, and the steps MSSRF has already taken to address many of the issues they identified.

On behalf of the Trustees, Scientists and Scholars of MSSRF I express our deep gratitude and appreciation to Drs Uma Lele and Kavita Gandhi for their labour of love for the further development of MSSRF.

**Chennai 2009**

**M S Swaminathan**



## Preface

In the fall of 2008, Dr. M.S. Swaminathan asked if I would conduct an independent review of the M.S. Swaminathan Research Foundation “to assess our programs and provide a road map for the future,” and as an input into the 20<sup>th</sup> Anniversary of the Foundation<sup>3</sup>. Concurrently a management review was underway from which this review benefited considerably. Dr. Swaminathan noted that there have been several internal and external reviews and independent evaluations of the Foundation’s specific programs. But there had not yet been a comprehensive review of the Foundation’s programmatic work as a whole since its establishment in 1988. Consequently lessons and implications of its achievements and challenges going forward had not yet been systematically drawn. The need to conduct the review was also shared by the Board.

It is an honour to be asked to conduct such an independent review. But it is also an awesome responsibility. Besides, when I accepted the invitation to produce a “just in time” review for consideration at the 20<sup>th</sup> anniversary board meeting held on February 28, 2009, I was unaware of the full scope and magnitude of MSSRF’s work. That task became evident in December 2008/January 09 when the work for this review began. Investigations were conducted over a period of two weeks, a week of December 13 to December 20<sup>th</sup>, 08 in New Delhi to solicit views of MSSRF donors and past and present board members, and the week of January 5 to January 11, 09, in Chennai and surrounding areas interviewing MSSRF management and staff, Mr. Venugopal, the leader of the management review, board members, institutional partners, and numerous members of diverse communities with whom MSSRF partners in the conduct of its programs.

The assessment also involved the adoption of a systematic evaluation framework, outlined in Annex I, a review of publications, submissions prepared by the program directors, data, internal and external evaluations among others, simply the bibliography of which extends to 115 printed pages. A review of the publications from the viewpoint of their scientific quality was not possible, both due to the sheer number and range of publications and the shortage of time in which the review was conducted. Hence the review relied largely on the opinions of experts, for example, in the field of biology and information technology, and on the team’s own expertise and experience in the areas of economics and social sciences.

Kavita Gandhi, the only team member, has been a special asset. Her experience as organiser and Regional Manager of Oxfam, North India has been invaluable. A graduate of Yale School of Forestry, she was a member of the team I led in the World Bank’s Operations Evaluation Department, which carried out the evaluation of the World Bank’s 1991 Forest Strategy.

To ensure independence and objectivity we volunteered our time and undertook two international trips to India on my own, including one to attend a special board meeting held in Chennai on April 1, 2009 to discuss the review’s findings and recommendations.

The team’s limited familiarity with MSSRF prior to the commencement of this review further assured its independence. I had briefly visited the Foundation in 1992, as a member of the International Commission on Peace and Food, which Dr. Swaminathan chaired. He gave me a tour of the Foundation’s buildings then under construction at the current headquarter site, noting its environmentally friendly construction and low maintenance requirements. Often I heard about the visits to the Foundation

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3 Email of November 7, 08

by professional colleagues I happened to work with in Africa, Latin America or Asia. At times Dr. Swaminathan and I shared a platform or a panel discussion at meetings where he spoke of aspects of the Foundation's work. The views contained in this report are thus strictly those of the authors. They neither represent the views of the M.S. Swaminathan Research Foundation, nor of the numerous individuals outside and inside the Foundation who generously contributed their time, information and data and shared their knowledge and perspectives.

A note of caution is in order. MSSRF has substantial information and data based on 20 years of its activity. But the information did not exist in a systematically organized form to tell a story of its work. Therefore considerable time was devoted by the review team, jointly with Dr. Sudha Nair, Director of the Ecotechnology program, who had been designated to be the team's liason, to solicit and organize information from each of the programs to construct a comprehensive picture of MSSRF's total activity over the last twenty years. While this took time and effort which could have been devoted to the evaluation, an unexpected by-product of the review has been an organized data set on MSSRF inputs (including evolution of staffing and finances over time), its activities, outputs and their known impacts. A complete draft of the review including the methodology and the data contained in annexes in volume 2 and 3 was presented to the board at its meeting on Feb 24, 09. This in turn led to the follow-up meeting with the board on April 1, 09 to discuss the review's findings and its implications for reforms.

Comments received on the February 24<sup>th</sup> draft are reflected in this final report.

MSSRF has already begun to implement many of the recommendations of the program review and the management review with speed and earnestness. The steps it has taken and others which are planned to be taken are included at the end of this report.

**Washington**  
May 10, 2009

**Ume Lele**



## **Acknowledgements**

We are grateful to Dr. Swaminathan, the board of directors, the donors, managers and staff of MSSRF as well as the numerous stakeholders, partners and observers of the foundation for their contribution to our understanding of the foundation's work. Particular thanks go to Dr. Sudha Nair who coordinated MSSRF response and support to our work and generously gave us her time. Without a highly effective management review led by Mr. Venugopal, the work of the program team would have been more demanding. The list of people consulted is in Annex 2.



## **Executive Summary**

Dr. M.S. Swaminathan established the M.S. Swaminathan Research Foundation in 1988, using the World Food Award and various other awards for his leadership role in India's Green Revolution. Inspired by the Gandhian philosophy and chastened by the limitations of the green revolution, the MSSRF's mission is the conservation and enhancement of natural resources, and generation of agricultural, rural and off farm employment with a particular emphasis on the poor and the women. The pro-nature, pro-poor and pro-woman mission of the M.S. Swaminathan Foundation has been far sighted in combining science and technology with practical problem solving approaches on the ground. Nationally its influence ranges from legislation and science and technology policy to impacts on the lives of the poor, and internationally through a variety of catalytic influences.

This twenty year independent retrospective and prospective review of the Foundation was conducted at the request of Dr. Swaminathan and the Board of Directors of MSSRF during the December 2008 and January 2009 period. The reviewers were asked to assess the Foundation's performance since its inception, and to provide it a road map for the future on the occasion of the Foundation's 20<sup>th</sup> anniversary. Until the team commenced its work it was unaware of the full range and scope of MSSRF's work and the magnitude of the task.

The program review complements a management review carried out around the same time with considerable benefit to this review. Both contained wide ranging recommendations which were discussed by the board at its annual meeting in prior to and on April 1 2009 in the presence of the external reviewers. Most of the recommendations were adopted in a joint meeting of the board, external reviewers and are being implemented by MSSRF management. The appointment of the new Executive Director with long standing knowledge of MSSRF prior to the April 1, 2009 Board Meeting expedited implementation of reforms.

The Swaminathan Research Foundation covers a broad range of programs in Coastal Area Management, Biodiversity, Biotechnology, Food Security, Ecotechnology, and Informatics. A special project unit accommodates the emerging challenges such as climate change.

The Foundation has grown from a staff of 3 at establishment to 323 in 2008 with 185 professionals.

At the time of the review it was conducting 66 projects with an annual expenditures in 2007 of \$1.1 million. The Foundation raises resources from diverse sources, two thirds of them in the form of project financing. Crucial core support comes from the prize money and donors including by the Tatas for programs in Ecotechnology and Virtual Academy, the Swiss Development Corporation among others, although with MSSRF's demonstrated record the share of short term project funds and long term funds needs now to change in favour of more core support.

It is difficult to benchmark MSSRF against other entities. South Asia has the unique distinction to be home to several internationally acclaimed civil society organizations (Seva, Amul and Grameen Bank among others) which have had impacts on the lives of millions of poor households, including particularly poor women and these programs have been sustainable. Typically they have focused on a single intervention and honed in their unique approaches over time.

India also has distinguished scientific organizations established by dedicated individual scientists, e.g., the Tata institute of Fundamental Research, the Indian Institute of Sciences, among others, which have remarkable achievements to their credit. Their establishment with the support of the Tatas

showcases India's philanthropic tradition arising out of modern industrial development that precedes the Carnegies and the Rockefellers.

But MSSRF's objectives are more challenging. They combine the pursuit of (applied) modern science and technology with grass roots approaches to address the complex challenges of poverty reduction, gender equity and environmental sustainability to sustain an "evergreen revolution". Poor communities rely on natural resources and hence natural resource management and poverty reduction tend to be interlinked. The location specific characters of each often defy odds of successful replicability and scaling up of pilot programs. They require active involvement of households and communities often together with local, state and national governments, the private and financial institutions and information and communication providers among others in support of a range of activities.

**MSSRF's mission is highly relevant.** Despite rapid economic growth, India is home to nearly 300 million poor people and contains a third of the world's malnourished children. Climate change has added to the mounting pressure on natural resources of water scarcity and loss of biodiversity, emphasizing the need for an array of policy, institutional and technological responses. The Foundations work reflects the unique Indian and international experience of Dr. Swaminathan. It *de facto* performs the role of an incubator- laboratory. Its pilot approaches have been offering lessons for application within India and internationally.

**MSSRF carries out its mission effectively.** It has a large number and a wide range of activities to its credit. It has served as an effective platform for numerous consultations on major issues of international, national and local importance ranging from the convention on biodiversity to information technology. Its research, networking and training activities have extended from South East Asia to Africa in a wide range of areas over the last 20 years.

Assessing these activities was a challenge because information on its substantial body of work had not been well organized or disseminated in the past. Indeed defining the full scope of the work of MSSRF was a process of discovery not only to the reviewers but even to those familiar with the specific areas of MSSRF activities. The review led to a systematic inventory of all its outputs and as many of the outcomes of its work as could realistically be assessed in a short period in such areas as food security mapping, coastal area management and information technology and inputs into policy formulation and policy making processes.

The stature of Dr. Swaminathan is MSSRF's special asset, but so are its highly dedicated staff, demonstrating their considerable potential to play a role on a larger scaled up basis. Its location in a dynamic state well endowed with physical infrastructure enables it to be effective. Among the range of its activities, internationally MSSRF has attempted to develop an as yet nascent network involving countries of Southeast Asia, South Asia and Africa on coastal area management. That work saved lives in India during the Tsunami and its scientific work has been internationally recognized with publications in Science. The network could be strengthened with international record. MSSRF has demonstrated the effective use of information technology in the service of the poor well before IT became a household word. MSSRF's international influence on such ideas is well proven.

At the national level MSSRF has played a key role in introducing farmers' rights in the legislation on plant genetic resources and influenced legislation on biodiversity conservation. It has been an active player on policy issues related to biotechnology and bio-safety.

Although the results have not yet been tested in the field for broad application, peers in the biotechnology

profession have regarded some of its laboratory work on plant breeding or salt tolerant varieties of rice using wild species as a flagship, and acknowledged it as a centre of excellence. Aspects of the program on Coastal Area Management have been scaled up by the Government of Tamil Nadu and that on information technology. Apart from numerous direct impacts on the rural poor, the work has prompted a partnership of 200 actors in the field of information technology, funded largely by the private sector. Government of India has financed 100,000 Village Knowledge Centres in the next Five Year Plan acknowledging the role of MSSRF in influencing of these resources in the Five Year Plans. None of the programs would be as effective without the synergy among programs in Biotechnology, Coastal Area Management, Information Technology, Food Security and Ecotechnology.

There is substantial scope for increasing synergy, reducing overlaps and competition among the numerous projects, to increase coordination and prioritize around an overall program strategy, so that the whole program becomes larger than the sum of the parts. Similarly, there is greater institutional knowledge than is often mobilized in MSSRF program design and implementation because over 60 percent of MSSRF budget is project driven. MSSRF pilots also need strong monitoring and evaluation to ensure costs, benefits and impacts are systematically tracked, and lessons for scaling up and sustainability are incorporated into the project design from the outset. These reforms are necessary because of the considerable potential the programs have already shown in influencing policies and programs and scaling up.

MSSRF ranks **high on efficiency**. Its outputs and impacts are large *in relation to annual expenditure of only about \$1 million*. The efficiency is explained in part by the charismatic leadership of Dr. Swaminathan and the extra ordinary commitment of the staff, including the program leaders. Many have worked, and have remained to work in the Foundation, without long term contracts and salaries and benefits, which have been less than competitive with the market. These have been adjusted since the program and management reviews were completed.

Many leaders and senior staff explain their dedication to the MSSRF mission and its leader. They also attribute their productivity to the environment which fosters creativity despite the considerable pressure to raise project funds.

**The Foundation has had substantial impacts** domestically in specific niche areas of national policies, legislation, national resource allocation decisions (100,000 Common Services Centres provided for in India's Planned Allocations), and national thinking and approaches (Food and Nutrition Security, an independent committee to assess the role of biotechnology innovations on a case by case basis, Every Child a Scientist idea leading to substantial investment on natural sciences and math in schools throughout the country).

Some of these are undoubtedly the result of Dr. Swaminathan's considerable influence, in no small measure due to his accomplishments combined with a low key style. Yet many areas of influence have been backed by the work carried out in the Foundation.

The Foundation has also influenced international strategies, (e.g. adoption of the VKC idea in several developing countries), the development of international networks (although still weak, the International Coastal Area Management Network), and approaches (Food Security Mapping in Cambodia).

MSSRF has influenced the strategies of specific government departments within India and in bilateral and international organizations which have supported it. Within India these include the Department of Biotechnology and Science and Technology and internationally the work of SDC, IDRC, WFP and

Microsoft. In the case of the latter four associations with MSSRF helped to put their work on the map in India in the areas they supported, giving the programs visibility and strategic influence. Besides, the MSSRF brand enabled its extension to the developing world.

MSSRF's direct impacts on communities of the poor, the women and on natural resource management, areas in which it has undertaken pilot programs are too numerous to list, e.g. in ecotechnologies, biodiversity and food security. These impacts range from modest to substantial, although weak design, inadequate monitoring and evaluation from the outset limit the number and types of impacts, which could be enumerated or to determine their replicability or scalability by others.

### **Going forward**

MSSRF is at a cross road. There is considerable potential for the Swaminathan legacy to be built upon and enhanced. MSSRF can offer continued scaled up and sustainable impacts even post Dr. Swaminathan, provided MSSRF effectively transits from an institution led by a charismatic leader of considerable international reputation, to the one which must make its reputation based on the excellence of its programs. This calls for MSSRF to prioritise, consolidate and make transitions to be at the cutting edge of problem solving in a variety of ways. Depending on the road it takes, it can coast along, decline or soar to higher heights.

There is a widely shared view externally and internally among those the review team consulted that such a transition is needed. The future directions of MSSRF will need strong internal and external consensus. Internally it will call for not letting interests of individuals and programs come in the way of a collective good. Externally it will call for better articulation of the strategic priorities, effective dissemination of successful MSSRF programs and a fund raising strategy with less reliance on short term funding. The review cannot provide a "road map" Dr. Swaminathan solicited in view of the very short time in which it was conducted. But it provides the general direction in which the Foundation should move and the steps it should start taking.

**To Be Programmatically Relevant for the Future** the challenges MSSRF faces relate to a better balance between:

- **Breadth and focus:** The review recommends more strategic focus.
- **Research and grass roots action** –the review recommends more operational research to accompany action beginning the design stage of operations
- **Biological and social science inputs**—the review recommends better use of its existing social science capacity and improved skill mix
- **Professional work and the administrative and management support for it**—the review recommends institution of modern management practices.
- **A project driven or a programmatically driven organization.** The review recommends programmatic strategies supported by long term funding
- **Work relative to its systematic dissemination as a public good.** The review recommends greater focus on dissemination to the world.
- **A Foundation of state, national or international profile.** The review indicates the potential for the foundation to be an incubator of ideas and experiments at several levels,
- **A charismatic personality and family driven Foundation to one which is professionally led, managed and operated.** The review recommends the need for transition at the level of

the board and management.

Detailed recommendations in each of these areas are contained in the body of the short and the full report. The choices it makes will determine its trajectory. How it deals with the challenges will mean **ensuring the sustainability of the impacts it has already achieved**. Prospects are modest unless crucial steps are taken both on the programmatic and management side. Prospects for **scaling up effects** of individual pilot programs on other stakeholders also seem modest unless program design, monitoring and evaluation are more systematically and more scientifically approached to increase lessons for scalability or replication as appropriate.

Finally, there are the challenges, in ensuring sustainability of MSSRF itself, and scaling up its operations. Both are critical to ensuring the Swaminathan legacy.

# The Independent Review

## Introduction and Key Themes

Dr. M.S. Swaminathan (together with Mr. C. Subramanian, the then Minister of Agriculture) is one of the two fathers of India's Green Revolution. Working in tandem with Dr. Norman Borlaug and other international and Indian scientists of distinction Dr. Swaminathan led an army of national and international scientists that introduced (and rapidly adapted) the improved high-yielding wheat and rice varieties being released by international research centers to Indian conditions. Within four years he helped end India's massive and recurring dependence on food aid imports in a politically highly charged situation of impending food crisis, balance of payments deficit, slow economic growth, and India's pursuit of an independent foreign policy during a turbulent period of Vietnam War.

Dr. Swaminathan was awarded the first World Food Prize. Inspired and advised by another distinguished Indian scientist Sir C. V. Raman, he ploughed the World Food Prize award monies into the establishment of the M.S. Swaminathan Research Foundation (MSSRF) in 1988.

Despite its considerable achievements, the Green Revolution was and remains controversial. Despite rapid economic growth and decline in the *share* of population living below poverty, four fifth of Indians live on less than \$2 a day. Achieving national food self sufficiency did not assure eradication of hunger and malnutrition among the poor, public institutions which were established in support of the Green Revolution have become inefficient and outmoded. And population pressure, urbanization and environmental factors are putting new pressure on India's natural resources. A consummate scientist, Dr. Swaminathan absorbed the pitfalls and limits of the Green Revolution technologies, with a matured, deepened and expanded vision of the role of science in addressing India's poverty and environmental challenges. Establishment of MSSRF has been meant to help stimulate (not generate) an Ever Green Revolution, larger and more complex, requiring systemic changes at many levels and in many areas of activity. They entail the engagement of multiple decision makers in the public, private and the community based sectors.

Guided by Mahatma Gandhi's motto, "be the change you want to bring about" the Foundation has worked with a bottom-up approach influenced by Dr. Swaminathan's international experience and a global antenna attuned to dramatic changes in the external environment not the least among them being climate change.

The Foundation's actions and research are meant to be pro-nature, pro-poor and pro-women ([www.mssrf.org](http://www.mssrf.org)). The areas of focus are:

- The conservation and enhancement of natural resources - particularly land, water, and biodiversity
- The promotion of sustainable and equitable agricultural and rural development
- 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 (technological literacy) and Gender Equity

## Growing Scope

The Foundation has expanded rapidly from 3 staff at establishment in 1989 to 323 staff. Of these 185 are professional staff. It is currently conducting 66 projects in six broad areas and a special project



unit.

- Coastal Area Management
- Biodiversity
- Biotechnology
- Food Security
- Ecotechnology
- Informatics
- A Special Project Unit

Its activity has also expanded geographically from Tamil Nadu and Kerala to other states in India, such as Maharashtra. Its Village Knowledge Centre work is an alliance of 200 partners.

The growing scope and volume of work has been financed with short term, restricted project funding.

### **MSSRF's Unique Features**

**MSSRF has no parallels in its entirety.** The Review team searched for but was unable to identify a comparable organisation which combines scientific research with action, uses a combination of modern science and traditional knowledge, and develops innovations to address the triple challenges of poverty, gender inequity and environmental sustainability.

Many civil society organizations started by dedicated leaders provide services to otherwise unreachable rural households. Like MSSRF they have developed innovative institutional approaches and a few have been exceptionally successful in scaling up to reach millions of households. Some have proven to be sustainable on such a large scale, e.g., the **Amul Dairy Cooperatives, the Grameen Bank and Seva. They are joined by Mehyco** in the private sector, created by a small farmer and a seller of seed, which has now become a giant multi-national corporation. Even though their approaches and philosophies are quite different from one another, and some are even controversial, their large scale impacts on the lives of rural households are undeniable. They are well focused on a single activity (Dairy), sector (credit or seed) and a target group (poor households or women) and their champions have devoted their entire life to achieve results in their respective areas and affected public policies in their sectors.

Achieving India's first Green Revolution on the scale it was on the other hand had required leadership *from* the public sector. Dr. Swaminathan and others achieved systemic changes in a range of *public* policies (pricing, subsidies and credit), and *public institutions* (agricultural research and extension, public procurement and distribution, credit, transport) to achieve large scale impacts. Since serving in government and international organizations over the years Dr. Swaminathan has been espousing an Ever-Green Revolution on a scale comparable to the first Green Revolution, with a stronger focus on poverty and the environment. Such a Revolution calls for mobilization of numerous actors, clients and institutions at multiple levels in several sectors: agriculture, natural resource management and non agricultural activities and it calls for a bottom up approach that challenges conventional approaches. MSSRF has become a laboratory, and a testing ground, to see whether and how such an Ever-Green Revolution is achievable and sustainable on a large scale.

At the other end of the spectrum from the grassroots institutions, are top **scientific organisations**

**in India**, also conceived by distinguished scientists, which have become national icons, e.g. the Tata Institute of Fundamental Research<sup>4</sup> or the Indian Institute of Science (A Research Institute or a University of Research) founded as early as in 1909 by J.N. Tata. Far sighted, they are driven by the pursuit of scientific excellence, but lack a direct applied societal concern, in a way the MSSRF does, or even if they do, as in the case of the Tata Institute of Social Sciences, they lack the blend of biological, informational and social sciences. Characteristically, the Tata Trust has provided support to the MSSRF venture because of its attempt to blend sciences in novel areas of Ecotechnology and Information Technology in support of the rural poor.

Some interviewees contended that MSSRF is a **mini-ICAR**, or a **mini-CGIAR**<sup>5</sup>. But actors in those organisations did not consider the comparison either appropriate or fair, because in their view MSSRF is closer to poor households and is more driven by its poverty alleviation mission than either the ICAR, or the State Agricultural Universities, or the CGIAR, although it performs some of the same functions, e.g. working with universities it too conducts biological research and trains MS, and PhDs. It is younger, and its resources are modest (annual expenditures of only a \$1 million), compared to the CGIAR, (37 years old, with a budget of \$550 million), or ICAR (Nearly 60 years old with an annual budget of about \$350 million).

MSSRF has a broad reach ranging from the local to the global levels. At the international level, the Foundation partnered with Japan and ITTO to embark on the establishment of an International Scientific Mangrove Network to generate information and develop problem solving approaches to natural disasters and climate change vulnerability in Coastal Areas. This was well before climate change had become a household world. Partnering with the World Food Program, it extended food security and vulnerability mapping from India to Cambodia. It has stimulated interest in developing countries by successfully demonstrating the application of Information Technology to rural communities. At the national level, MSSRF has influenced the Indian legislation on Plant Variety Protection and Biodiversity, influenced GOI's planned allocations in the areas of information technology cited in Indian Plan documents, helped shape the strategy of the Departments of Science and Technology and Biotechnology, caused the establishment of an independent committee to review the controversial role of biological innovations, and helped increase GOI expenditures on scientific education for children. Activities at the local and community levels in each program are too numerous to list here .Please refer to the full report on the web (<http://www.mssrf.org/>).

The breadth and depth of this record had not been compiled or documented systematically by MSSRF until this review. The listing of the large body of work of the Foundation is now available on the web for the first time. It well reflects the stature and the approach of Dr. Swaminathan as well as the contribution of the dedicated MSSRF staff. It has been focused on action, and less on reflection of the broader significance of the work.

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4 It is the duty of people like us to stay in our country and build up outstanding centers of research such as some other countries are fortunate to possess" was the vision of Homi Bhabha. He founded the Tata Institute of Fundamental Research in 1945 with the support of Sir Dorabji Tata Trust.

5 CGIAR is in the process of change. Its proposed new vision is "To reduce poverty and hunger, improve human health and nutrition, and enhance ecosystem resilience through high-quality international agricultural research, partnership and leadership". The CGIAR's key objectives are to: 1) Create and accelerate sustainable increases in the productivity and production of healthy food by and for the poor; 2) Conserve, enhance and sustainably use natural resources and biodiversity to improve the livelihoods of the poor in response to climate change and other factors; and 3) Promote policy and institutional change that will stimulate agricultural growth and equity to benefit the poor, especially rural women and other disadvantaged groups." Christopher Barrett, Normative Framework for the Social Activities in the CGIAR, October 28, 09, background paper for the Stripe Review of the Social Science Activities in the CGIAR.

**Dr. Swaminathan's convening power has also made MSSRF into an effective platform** to discuss international and national issues. There are numerous such consultations held annually which are not always related to MSSRF's work.

MSSRF has multi-disciplinary staff particularly in biological and environmental sciences. Its policy analytical and social science complement is small in size but large in importance to the kind of work MSSRF carries out. Its collective expertise is larger than its individual programs. Staff have served without tenured positions or competitive salaries.

The general perception of a rich Foundation, despite small resources, comes from the amount and range of activity it conducts. And yet it has demonstrated an ability to mobilise resources from a very diverse range of domestic and international sources. Resources come to MSSRF not just for developmental activities but in support of disaster relief from the plentiful disasters that frequently strike India, including the Tsunami, the earthquakes and farmer suicides. Even though regional as an entity, MSSRF has a national presence. It is able to partner with organizations throughout India to share its scientific knowledge, applied skills and a spirit of dedication. Again this work is not much documented.

**MSSRF's location in Chennai offers several advantages. It stands outside the mainstream of politics and business interests located in New Delhi and Mumbai.** A modern industrial city with dynamic manufacturing and IT sectors, good infrastructure including airports and roads, access and proximity to rural areas, Chennai allows MSSRF exploration of challenges in agriculture, rural development, livelihoods and sustainability, all in the context of rapid urbanization, growing environmental and policy related stresses.

MSSRF's land, building and facilities, are modest, functional and effective. But they are under considerable stress because of the scope of activity.

MSSRF's numerous partners include International Development Agencies, Central and State Governments, Indian and Multinational Private Sectors, Financial and Banking Institutions, NGOs, individuals in developed and developing countries making donations to MSSRF, and Universities in India, in developed and developing countries.

While some of the MSSRF's large volume of work is relatively conventional, other biological and information technology work is at the cutting edge of problem solving. In quite different ways all work presents challenges of replicability, scalability and sustainability.

### ***Distinguishing the Roles of Dr. Swaminathan from the Work of the Foundation***

Apart from the usual challenges in evaluating an organization's work over a period of two decades (e.g., the scope and coverage of independent assessments of activity, issues of measurement of outputs, attribution, and disaggregation of contribution of MSSRF from that of its partners), a unique additional challenge the evaluation faced was the difficulty of separating the influence of Dr. Swaminathan from the work of the Foundation. The review explored whether, the foundation would have carried out the kind of innovative work, and on the scale it has, without the leadership of Dr. Swaminathan, or whether it would have had as much influence, and where and how its work is establishing credibility of its own.

## The MSSRF Program Overview

The programs reviewed in this report include: 1. Coastal Area Management, 2. Biodiversity, 3. Biotechnology, 4. Ecotechnology (now including climate change), 5. Food Security, 6. Informatics, and 7. Special Projects (and other activities not covered in this assessment, e.g. the Hindu Media Resource Centre). Each is very broad in scope. Together they contain almost the entire spectrum of agricultural and rural development issues facing India. Programs have evolved over time and their boundaries are not always easy to define. There is considerable overlap in their work and some duplication. The current organisational structure is shown in Annex 3 .

**The Coastal Area Management Program** develops and demonstrates models of bio shield that integrate ecological security of the coastal areas and livelihood security of coastal communities. (Detailed assessment of all the programs is contained in the full report on the web - <http://www.mssrf.org>) The program has assessed causes and consequences of bio-degradation and the ways to achieve restoration of the coast lines using scientific principles and co-management of fishing involving local communities and forest departments who control the public lands and forestry resources. The Coastal Area Program had 19 technical staff in 2008.

**The Biodiversity Program** promotes the conservation and sustainable utilisation of biodiversity focusing on agro-biodiversity on various components of community livelihood and food security including plant species of rare, endemic and threatened category. The biodiversity program is working to improve productivity and incomes from endangered and disappearing species grown mainly by the tribal communities. It is helping to implement the farmer's rights provisions of the plant variety protection by increasing the communities' legal literacy. The biodiversity program is more decentralised than other programs and operates from three centres in Tamil Nadu, Kerala and Orissa. The program had 56 technical staff in 2008.

**Biotechnology:** The program develops genetic shields for sustainable food security (including Salinity and Drought Tolerance in paddy and other crops), undertakes tissue culture, promotes biological tools for the conservation and promotion of dry land agriculture, and monitors ecosystem health (using Lichens). It also undertakes bio prospecting for novel compounds and promotes genetic literacy in the rural population. The biotechnology program had 42 staff in 2008.

**Ecotechnology:** The JRD Tata Ecotechnology Centre generates and extends new knowledge practices and technologies which promote sustainable rural development working with farming communities and self help groups at the farm and household levels. Its focus is on bio-villages. Its variety of technologies and processes strive for ecological sustainability, economic viability, employment generation, energy efficiency and social and gender equity. The JRD Centre had 41 technical staff in 2008.

**Food Security:** The program has an upstream focus on research, studies, preparation of food security atlases, reports and policy advocacy towards creating a food secure India. Some field level projects have also been and are being implemented. They are being carried out through the B.V. Rao Centre for Sustainable Food Security and the Ford Foundation Chair for Women and Food Security (which was vacant at the time of writing of this report). The program has had 18 staff.

**Informatics:** By far the largest program, the Jamashetji Tata National Virtual Academy develops data bases for empowerment of village communities, establishes village knowledge and village resource centres, promotes networking through the Grameen Gyan Abhinaya (village knowledge enhancement) Secretariat involving the alliance of nearly 200 partners, and selects and trains knowledge workers

and leaders to operate village knowledge centres. It is the largest program with the technical staff of 76.

The overall expenditure on all programs in 2008 was about \$1.1 million in 2007-2008. Rs. 306,413 was spent by programs in 2008. Program expenditure in nominal terms increased from about Rs. 74, 00,000 ten years ago. Figure 1, shows the total funding received during 2007-2008 under each Programme Area. Annex 4 shows changes in program funding, funds received and expended during the last decade under each Programme Area.

Together the six programs are currently conducting 66 projects involving 323 staff of which 185 are professional. They are based in Chennai and other centres shown in the Map.

**Locations of MSSRF Offices & Centres**



Program activities include:

- Research and action programs.
- National and international consultative meetings—on policy and technology issues of domestic and international interest, including biotechnology, water shed management, intellectual property, and information technology among others.
- Meetings to promote networking at the level of program implementation at the local, state and international levels.
- Formal (degree) training and arrangement with universities at the state level
- Informal training, study tours, publications, conferences
- Production and dissemination of 261 books / monographs / manuals books, 856 articles in journals/ books, 40 reports 33 articles in popular journals/ media/ special lectures and 621 presentations in conferences/ symposia

*Refer Annexure 5 -13 for further details.*

### **Sources of Funds**

Sixty three percent of the staff costs come from project funding. Income from the Corpus of Rs. 141,264,000, (\$3 million--Rs. 220, 00,000 (or \$4, 00,000) and 15 endowments of Rs. 40388, 00 provides the rest of the income. JRD TATA trusts are a significant part of the endowment funding for the Ecotechnology Centre and the National Virtual Academy. In addition nearly 150 small donors have provided funds for community banking and relief and donors from Japan and Australia have provided funds for disaster relief activities. The perception of riches comes in part because of the size of MSSRF activity and Dr. Swaminathan's profile, but the dependence on project funding is considerable and varies among programs and over time in the same programs.

There is also considerable difference among programs in terms of the level and diversity of funds. The Biotechnology program funding comes largely from the department of biotechnology. The programs which have the most diverse sources of funding are Ecotechnology and Informatics and a significant amount of funding for Informatics comes from the private sector.

### **Staffing**

Administrative staff of 66 has regular contracts. Technical staff of 252 have contracts co-terminus with project funding. This has had predictable consequences: considerable uncertainty and anxiety among staff, potential for loss of learning by doing for the Foundation, and a project driven approach. Indeed the Foundation seems to have had a policy of not encouraging long term employment or secure contracts. Whereas this has led to exit of some key staff with many competing options, several senior program leaders have been in the Foundation since its inception or at least for a decade or more.

## **Coastal Area Management**

Work on the conservation and management of mangroves, started in MSSRF in 1991 with the support of the Governments of Australia and Japan through ITTO has shown great foresight and a record of achievement, which ranks high on several scores. Mangroves have ecological importance but are a neglected area. This study fits uniquely in the MSSRF mission because it addresses coastal resource management and livelihood of mangrove (forest and fishing) dependent communities. Millions of poor coastal households and vast tracks of India's coastal areas are potential beneficiaries of this approach. It has combined biological and social science research of scientific excellence acknowledged so internationally and in India, the knowledge generated through MSSRF work on the causes and consequences of the degraded state of mangroves has shifted policy focus to restoration of mangroves, although there are challenges in translating understanding of the issues to scale up programs of state governments. Internationally the program has highlighted an issue of the need for international cooperation, though progress on building the international network has been less successful than work in India, due to reasons beyond the control of MSSRF.

The Coastal Area Management program has gone through four systematic phases; first, of identification of mangrove genetic resource centres as part of an international effort supported by Japan and ITTO; secondly, of the development and demonstration of models of mangrove restoration using a unique combination of biological and social science diagnostic to develop models, followed by the development of a Joint Mangrove Management program and finally the development of Bio shields.

The identification of four mangrove genetic resource Conservation Centres – in South and Southeast Asia (Malaysia, Papua New Guinea, India) and one in West and Central Africa (Cameroon) has been and remains a unique MSSRF effort to connect Indian research to International effort to organise and train trainers to manage mangrove genetic resource centres and develop a Global Mangrove Ecosystems Information Service. (GLOMIS)

Dr. Selvam leads the program. By successfully creating a demonstration model, MSSRF has already had considerable impact in the areas of science and public policy but there is considerable additional potential for scaled up impact and on sustainable poverty reduction of mangrove dependent communities in at least four or five south-eastern states of India, and the developing world's coastal areas (in South East Asia and West Africa).

A distinguishing feature of the work was that the conservation work was undertaken in South and Southeast Asia as well as Central Africa, starting with the development of Mangrove Ecosystems Information Services and training of forestry officials in the information system. But the progress on developing an effective international network has not materialised. In India the program was able to illustrate scientifically that the number of deaths in the village due to forceful entry of tsunami water and damages to houses was lower in areas with greater density of vegetation than in areas located at the same distance from sea, the same elevation from MSL, with more or less similar economic status.

A significant contribution of the program has been the identification of the real causes of degradation of mangroves. Forest departments have typically laid blame on the grazing and felling practices of local communities. MSSRF's participatory approach to diagnosis has resulted in a better understanding of the role of tidal and topographical factors on the one hand and the past unscientific management of mangrove forests by the forest department on the other in jointly explaining degradation. It is clearly

a sensitive finding with government agencies. Nevertheless it has resulted in appreciation of a more scientific approach to the restoration of mangroves in the Tamil Nadu forest department. The other scientific contribution was the development of evidentiary base that the rehabilitated mangrove areas lead to smaller loss of life of the fishing communities during Tsunami than the degraded areas, a finding published in the prestigious journal *Science*<sup>1</sup>.

The third Joint-Mangrove Management phase covered multiple states—Tamil Nadu, Andhra Pradesh, Orissa and West Bengal and consisted of developing and demonstrating a methodical detailed science based and people centred model. It emphasised a strong participatory approach to analysis and to building participatory institutions at the grassroots level working jointly with NGOs. It involved addressing issues of land and water based alternatives and a strong emphasis on poverty alleviation, among other things, by improving the fishing technology used by the communities, and simultaneously improving their community self help groups, and access to finance, working with NGOs, such as DHAN.

Clearly scaling up of a program of this nature involving millions of hectares of forest land controlled by the forest departments and fishing/forest dependent communities entails complex issues of competing and often contested land rights, and the roles of state and national governments in the establishment and implementation of Parks, the role of indigenous community rights vis a vis those of the government. Based on the team's interviews with the Forest Department, Government of Tamil Nadu has reportedly taken up the work of restoration of mangroves more actively than the other states. Nevertheless even in Tamil Nadu, government bureaucracy does not seem to get all aspects of a multispectral, multi-disciplinary and multi-stakeholder rights involving forest communities. The right approach requires active mobilisation of communities and panchayats and sustainable approaches to financial and other services in a way MSSRF has undertaken at the level of demonstration. Thus the effectiveness and the sustainability of the scaled up approach would in all likelihood be far less than MSSRF's and scaling up raises issues of both the quality as well as of sustainability. These issues are raised in the UNDP and ITTO evaluations.

The challenges are all the greater because forest departments have traditionally proven to be more conservative in pursuing participatory approaches than most other sectors and greater still in states beyond Tamil Nadu in India where MSSRF perhaps has less knowledge of the local communities and lower impact on state governments.

Thus donors and stakeholders, who have supported this work, while giving high marks to MSSRF for its pathbreaking work, wonder about the precise role MSSRF should and would play in facilitating scaling up and replicating the demonstrated models. They would like MSSRF to be more proactive in addressing these issues of scaling up.

This raises important strategic questions for MSSRF going forward. Clearly it cannot be an implementing agency for a scaled up approach. But can it play a critical proactive role in working with state governments in increasing their capacity to achieve better results on the ground. The review of partnerships for each of the programs suggests that MSSRF has not actively engaged the Ministries of Forest and Environment and the Departments of Forests in various states. To mobilise political will in multiple states will call for policy briefings as well as local political mobilisation at the highest as well as the grassroots levels of the state governments. MSSRF needs to articulate the lessons and



implications of its experience for international, national and state policy makers to have larger impact. It will need resources for capacity building of the state institutions. Government of Japan has been actively supporting forest interventions in India. While much of the rest of donor funding has become short term oriented to demonstration of quick impacts in place of the kind of long-term research and development work entailed in Coastal Area Management, climate change is likely to focus more attention to the issues of adaptation and disaster prevention.

MSSRF should develop strategies to have formal collaboration with the Forest Departments of Eastern coast states as well as with the Ministry of Environment and Forest (MoEF), convince MoEF to recognise MSSRF as a Centre for Excellence in Coastal Wetland Management. It should initiate a capacity building programme to strengthen the ongoing JMM programme in collaboration with the central and state government agencies. A well structured capacity building programme will help in mobilising funds.

A weakness of the Coastal Systems Research Programme, unlike some other MSSRF programs, is that there is insufficient dissemination of the results and sharing of experiences with the international, national and state policy makers and planners (though the Forest Department of Tamil Nadu has embraced the model).

The MSSRF work also raises some scientific issues of long term sustainability of the fisheries resources. MSSRF has rightly promoted the use of fishnets to increase productivity of fishers in place of the traditional approach of manual fishing. But it is possible that increased returns to fishing communities will increase the amounts harvested threatening long term supplies. These issues need continuing research. Linking the mangrove program with the management of other coastal resources, including water and fisheries will ensure MSSRF's place as a Centre of Excellence for Coastal Resource Management Research. This is urgently needed in the context of climate change and India's repeated exposure to natural disasters.

Therefore MSSRF should also become proactive in resuscitating the International Mangroves Network that Professor Swaminathan took a lead in establishing, though it has not advanced as expected.

### **Biodiversity Conservation**

India, particularly, the Western Ghats, have some of the richest biodiversity in the world. Due to population pressure, technological change, economic growth, urbanisation and poverty, much of this biodiversity is in the process of extinction. An important area of focus of MSSRF is Biodiversity Conservation. Two independent arguments in support of biodiversity typically are: its intrinsic (or existence) value regardless of its value to humans, and, the fact that biodiversity offers a number of ecological services to human kind with economic, aesthetic and recreational values.<sup>2</sup> Unlike in the West, biodiversity in India has religious and cultural values too.

Conservation is a natural fit for MSSRF particularly from an agricultural biodiversity perspective headed by Dr. Anil Kumar. The stated current objective of the Biodiversity Program is to "optimise conservation and livelihoods with an explicit emphasis on poverty reduction, social and gender justice of the rural and tribal poor of the 'hotspots' of biodiversity and agro-biodiversity of peninsular region of India." This clearly puts MSSRF effort in the second category on conservation for its anthropometric

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2 "The natural environment harbors chemicals, fibers, flesh, raisins, enzymes, genes and what not that we can manipulate, breed, purify and prime into products that will cure our diseases, feed the hungry and line our pockets". David Takacs, *The Idea of Biodiversity*, Johns Hopkins University Press, Baltimore, Md., 1996.

value. At the same time, the program has had very widespread and ambitious objectives seemingly disproportional to its resources. They range from “in situ on farm conservation, ex situ conservation involving seed bank, cryogenic community gene bank, in vitro cultures in the case of vegetative propagated plants, sacred groves, etc., and the conservation of rare, endangered and threatened (RET) species; cultivation to promote low external input, sustainable agriculture based on organic farming principles; consumption to revitalise earlier food habits including the use of underutilised crops, the conservation and cultivation of life saving crops like tubers and survey of the prevailing macro and micro nutritional deficiencies and promote horticultural and agricultural remedies for nutritional maladies such as vitamin A, iron, iodine and zinc deficiencies, and commerce to create an economic stake in conservation for serving simultaneously the causes of conservation as well as livelihood security through organised SHGs or neighbourhood groups. The program also included, “saving endangered national parks and sanctuaries, monitoring ecosystem health using bio-indicators, ecological restoration and bio-prospecting for novel genes, novel compounds and novel micro-organisms”<sup>3</sup>

The intrinsic and anthropometric values are not mutually inconsistent. But depending on the weight attached to each, the strategies the Foundation should pursue going forward will be quite different as regard how much and of what kind of biodiversity conservation to undertake. To the reviewers it seems the MSSRF pilots should convincingly demonstrate how the state level and national level efforts in poverty reduction could be strengthened using biodiversity conservation and poverty reduction as the dual objectives and help operationalise and scale up efforts. In assessing the program this review has placed at the centre two important pieces of legislation MSSRF has influenced in the conservation and sustainable use of India’s biodiversity, namely, the Protection of Plant Varieties and Farmers’ Rights Act 2001 (PPV&FR Act 2001), and the Biodiversity Act 2002. These legislative contributions have given MSSRF a high profile and created a set of expectations, for example, in terms of the extent to which MSSRF’s innovative efforts in community gene banks and food security would be able to link these local efforts to the implementation of the national policy framework it has helped to create. The community efforts earned the local tribal communities of Jeypore region the prestigious Equator Award at the World Summit on Sustainable Development in 2002 and the Genome Saviour Award of the Government of India in recognition of their contribution to conserving biodiversity.

The MSSRF work on community based conservation of agro biodiversity can throw light on how plant variety protection legislation might work in practice and could be operationalised.

MSSRF conservation work is being carried out in three hot spots of agro biodiversity viz. Wayanad in Kerala known for rice varieties and medicinal plants, Jeypore tract of Orissa, famous as a secondary centre for the origin of rice, and Koli hills in Tamil Nadu recognised for cultivation of a range of millets. The Community Agro biodiversity Centres (CAbC) seek to promote local community partnership in conservation, sustainable and equitable use of local biodiversity.

Infrastructure for the Community agro biodiversity centres established in Koraput and Wayand is established at Kalpetta in Waynad on the land donated by the Swaminathan family. Government of Orissa has supported the establishment of the Biju Patnaik Medicinal Plants Garden and Research Centre. The next phase of construction of a Human Resource Centre is being carried out through the help of Mitsubishi Corporation and is nearing completion. SDC, Mitsubishi Corporation, DST, DBT, GEF, SDDT have provided support for the activities undertaken by the Centres and at Koli Hills.

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3 From the program overview submission.

The Centres' activities fall under three broad programmes which include biodiversity conservation, education and awareness, eco- technology and livelihoods. The overall strategy of CABc is to educate the communities about the importance of conservation by associating them with their livelihood, food, health security and cultural needs. The Centre also aims to serve as a Centre of Excellence for facilitating field level implementation of the provisions relating to Farmers' Rights and the prior informed consent and benefit sharing provisions of the Biodiversity Act.<sup>4</sup>

The Biodiversity programme's 51 staff members work in partnership with different governmental and non-governmental organisations to focus on the issues of the conservation and sustainable and equitable use of biodiversity.

Studies by MSSRF confirm that many of these varieties are getting lost. The working hypothesis of MSSRF is that linking commercialisation and conservation can help arrest or eliminate the biodiversity loss while reducing poverty. Efforts are directed at saving the traditional rice varieties like Navara in Wayanad, Kalajeera in Koraput, millets and orphan crops in Koli hills and medicinal plants in Waynad. Interventions include awareness creation, training and capacity building of farmers, production of quality seed through participatory plant breeding and its distribution, developing improved cultivation practices for increasing yield, supporting value addition and market linkages. An example of this effort is the medicinal plant work in Wayanad wherein conservation of medicinal plants is linked to livelihood security. Medicinal plants of importance to the community are identified and home gardens are established through the involvement of Self Help Groups. MSSRF has supported the preparation of herbal formulations from these plants and the herbal products are sold through GREENS, a market outlet established by MSSRF at the District Level.

But value addition has remained a challenge as the production programs have been successfully scaled up through improved technology, and increase in production has exceeded home consumption. The program's input into the Biotechnology Program, including in the area of identification and characterisation of wild genes and bio-prospecting on the other hand could well yield results in the long run.

To add economic value to the production of traditional crops and medicinal plants using improved methods of cultivation, MSSRF has either had to persuade the Government to buy the produce

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4 The PPVR is a progressive legislation which recognizes and balances both Farmers Rights and Breeders rights. India is the only country where a law has established and secured Farmers' Rights. Dr. Swaminathan has played a key role in advocating for farmers rights in the act. Under the Act farmers are entitled to save, use, sow, re-sow, exchange, share and sell farm produce, including seeds of varieties protected by plant breeders' rights. They are, however, not allowed to sell seeds of protected varieties as branded packages. The conservers and providers of genetic resources would receive recognition and reward from the 'National Gene Fund' proposed under the PPVFR Act. The fund shall be contributed by way of (monetary) benefit sharing received in the prescribed manner from the breeder of a variety, when the breeder develops a particular variety using the genetic resources accessed from farmers/farming communities. The details of all the genetic material (complete passport data) used by the breeder in the development of a new variety, are expected to be submitted to the PPVFR Authority at the time of submitting the application for registration of the variety. The Authority would then decide about the amount and manner of payment of benefit sharing to the owner of the genetic material used in the development of the variety in a prescribed manner. Similar funds are also proposed to be constituted by National Biodiversity Authority under the Biodiversity Act 2002. The National Biodiversity Fund shall be funded by way of grants and loans from the Central Government; all charges and royalties received by the NBA under this act; and all sums received by NBA from other sources as decided by the Central Government. This fund shall be used for channeling benefits to the benefit claimers, conservation and promotion of biological resources and development, as well as socio-economic development, of areas from where such biological resources or knowledge associated has been accessed, in consultation with the local bodies concerned. The PPV and FR Act also state that breeders need to get express permission from farmers if they use their varieties to produce Essentially Derived Varieties. The Biodiversity Act says local bodies will be consulted before approval for access to bio resources is given, but the definition of "consult" not clearly defined in the Act and, unless the process and procedures how it can work in practice are effectively undertaken, the "consultation process" can remain a mere formality at best and a bureaucratic hurdle at worst and not a prior informed consent. Therefore demonstrating how it can work in practice in different cases is important.

as in the case of Kalajeera rice, or supply the produce to supermarkets and nature shops as in the case of minor millets, or establish own outlets for herbal products made from medicinal plants. While the new products being developed and marketed are resulting in higher incomes for the community, the enterprises do not appear to have yet become financially sustainable. They continue to require investment from MSSRF or the government. Besides the marketing aspects and the alternative ways of adding value seem to have been afterthoughts, even though value addition through commercialisation has been considered by the program to be the central hypothesis as the way to conserve biodiversity.

Moreover, an effort to rely on a market mechanism for the products by stimulating demand for the product among consumers, seems likely to be a more sustainable and a scalable approach than encouraging government intervention in the purchase of rice, as was done with Kalajeera rice. India is behind in achieving reforms in its public sector interventions in grain markets relative to other Asian countries and it would be a regressive step to promote such interventions as a solution to the value addition challenge. The sustainability of these existing efforts, without the presence of the Foundation, and the lessons for scalability of such efforts on a large scale seem dim to the reviewers in the present approach. MSSRF could instead consider striving for a demand shift on the part of consumers by increasing their awareness of the importance of nutritious but endangered crops. It could use media campaigns, mobilize influential personalities and leaders to convince consumers that increased consumption of nutritious engendered species would be good for the diet instead of a wholesale shift to modern, prepared foods.

Another important area of work of the CABc is in documenting the plant diversity and the local conservation traditions and knowledge of the tribal communities. A study on the status and availability of medicinally important roots/tubers, orchids and fungi of Western Ghats has documented traditional knowledge on dioscorea species and wild edibles. It shows that women have greater knowledge than men. Younger generation has less knowledge than older generation. Therefore the MSSRF effort to induct the youth in the program described below seems very promising and perhaps more sustainable and scalable than some of the other approaches discussed below.

Many of the plants are conserved ex situ at the Centre. In four local Panchayats the local knowledge on bio resources is captured in the Peoples Biodiversity registers. These are used for motivating communities to implement conservation activities in their locality through activities such as the establishment of medicinal plant gardens, restoration of sacred groves, revival of rice varieties and the cultivation of traditional native varieties of food crops which were no longer found in the area. In Jeypore, in Eastern Ghats region, MSSRF is involved in preparing of a list of rare, endangered and threatened (RET) plants and a database on economically important plants. This in turn would provide significant inputs for the identification and collection of important plant resources of the region for conservation at the Research centre at Jeypore. Likewise, in Wayanad MSSRF has documented the RET species found in the area.

Ex situ Conservation is another strategy adopted by MSSRF to safeguard endangered and wild plant species. Ninety-eight species of wild edible plants, 35 species of edible mushrooms and thirty species of fish are preserved at CABc. A conservation garden, a butterfly garden and herbarium have been established at the Wayanad Centre containing species endemic to the area and which are rare and endangered. Likewise in Jeypore a Medicinal Plant Garden housing has more than 3000 medicinal plants representing 183 species, has been set up.

The cost of maintaining these collections is a public good and should be borne by the public including

by the GOI's Gene Bank. It would, also, be useful to know if these gardens can attract local tourists or international tourists, and if any "willingness to pay studies" have been undertaken to find alternative ways to promote eco-tourism as a way to partially pay for the conservation of biodiversity, just as Costa Rica is doing successfully on a large scale.

A good example of inter program synergy (the so-called Pan MSSRF Program) is that the biotechnology programme is screening some of the promising wild medicinal plant collections of the Jeypore centre for their genetic characteristics, in much the same way as the Coastal Area Management Program led to the breeding of salt tolerant rice program.

As part of the education and awareness efforts, Village Knowledge Centres and Village Resource Centres, from another program, synergistically provide information on biodiversity, government entitlements, eco-friendly agriculture, micro enterprise development and human health. To teach the tribal children and youth about the importance of biodiversity and its conservation Every Child a Scientist programme has been launched with the objective to focus on the youth with biodiversity, recent trends in genomics and ICT. A key achievement is that children dropped out of schools but participating in this programme have rejoined school and have developed special interest in biodiversity conservation.<sup>5</sup> District government in Waynad has requested MSSRF to replicate this in other parts of the District. MSSRF has also initiated capacity building of Panchayat leaders and farmers on the recent legislations pertaining to Biological Diversity and Farmer's Rights and the idea of teaching science from the primary schools up has caught on with GOI allocating large sums to replicate the idea nationally.

MSSRF has documented information on wild foods, yams and RET plant species in Western and Eastern Ghats. A community gene bank has also been established to conserve the traditional varieties. A database on the genetic resources, farmers' practices and traditional knowledge has been created. Many children have been educated with regard to importance of biodiversity and traditional knowledge. The work on conservation and sustainable utilisation of biodiversity has helped motivate tribal families to raise home gardens containing wild edible plants, medicinal plants, fruit trees and vegetables. These home gardens are said to provide vital nutritional supplement and have helped tribals meet their primary health care needs- reducing the expenditure incurred on health. It would be good to have these claims systematically, independently and quantitatively documented to the extent possible as an input into influencing public policy.

MSSRF is supporting the establishment of community seed, gene and grain banks. Through the Gene Bank – landraces with distinct characteristics are stored for the long-term, both by ensuring their continued on farm cultivation and through cold storage at the 'Community Gene Bank' and Community genetic Resource Centre at MSSRF. The seeds of these landraces are accessed for their genetic material and the economic benefit arising from such use will go to the individual or community conserving the landrace. The gene bank has identified 5 and 15 traditional paddy varieties respectively from Wayanad and Jeypore and the process of facilitating the farming communities to apply for the registration under the provision of plant varieties act is underway. This will, in theory, help the communities gain recognition and economic reward for their conservation efforts. A Farmer's Right Information System (FRIS) database has been developed by MSSRF. This includes the traditional knowledge associated with each accession, their passport data and nationally and internationally accepted scientific descriptors. This database is devised to establish the intellectual property rights of farmers on their varieties.

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5 This is based on information collected by MSSRF.

Despite these achievements the issue of economic incentives in biodiversity conservation does not seem to have received the attention it deserves.<sup>6</sup> One of the aims of the programme was to show successful examples of economic benefits to knowledge holders of biodiversity conservation for conserving traditional knowledge and plant varieties, from the National Gene and Biodiversity Funds provided under the Biodiversity act 2002 and Protection of Plant Varieties and Farmers Rights Act 2001. But there has been little progress on this front. Lack of staff with legal expertise is one of the reasons given for the slow progress in this area. This is an area the Foundation must demonstrate and document success on the issues of increased earnings due to farmers' rights, or risk the provision will result in increased bureaucratic requirements for plant breeders without improved benefits to farmers from variety protection. If the latter, then MSSRF will also need to modify its position on translating farmers' rights into concrete programs that improve incomes.

The Staff profile also does not seem to reflect the skills required to successfully develop economic incentives, such as, either develop commercial markets for the products of biodiversity or develop the kinds of government programs Costa Rica, China and Brazil have developed to compensate farmers for land set aside for biodiversity conservation through relatively simple easy to implement programs which keep bureaucracy, transaction costs and potential for graft to the minimum, but increase transparency, speed and benefits to farmers.

### **Going Forward**

- Dr. Swaminathan and the MSSRF have had considerable impact on Indian legislation on the Protection of Plant Varieties and Farmers' Rights Act 2001 (PPV&FR Act 2001), and the Biodiversity Act 2002.
- MSSRF's work in the area of biodiversity has been considered innovative and internationally recognised through awards and prizes.
- The state governments have recognised its effort to introduce the knowledge of biodiversity to school children, in some cases, helping student drop outs get back to school increasing their interest in biology. This is an important contribution and should be further promoted.
- Its biodiversity conservation work has had a positive, synergetic relationship with its work on biotechnology and such synergy should be strengthened to ensure some of the parts of the program are larger than the whole.
- But the program lacks a focus and priorities. It has not been successful in demonstrating economic benefits to farmers on a sustainable basis or demonstrate empirically and convincingly that the biodiversity conservation is economically viable to the producers or through the farmer's rights incorporated in the plant variety protection or to show fiscally and financially viable approaches that can be scaled up as in Costa Rica, Brazil or China.
- The Program calls for more innovative policy approaches, more focus on operationalisation of farmers' rights and stronger independent monitoring and evaluation to learn lessons for scaling up conservation approaches.

### **Biotechnology**

Many of those interviewed consider Biotechnology to be a flagship program of MSSRF although there are critics. Biotechnology research entails a long process of gene identification, isolation, and

<sup>6</sup> MSSRF 2008. Community Agro biodiversity Centre: facilitating a Strategic approach on Community agro biodiversity conservation and development.

MSSRF 2007. Strategic Review and Planning of MSSRF Community Agro biodiversity centre, Wayanad.

characterisation, validation, developing transgenic varieties, getting approval for the field trials and eventually to the development of products which can be used by farmers in production. Blending the tools of advanced molecular and conventional biology, the program works on a broad range of issues.

The idea of breeding for salt tolerant rice emerged from MSSRF's program of Coastal Systems Research; other activities intersect with the Biodiversity Program (e.g. bio prospecting for medicinal plants and biodiversity of coastal vegetation), still others with the Program on Eco-technologies (bio-fuel crops, eco-restoration and dry land interventions), some with the Food Security Program (e.g.- biotechnology for nutritional enhancement) and some others with aspects dealing with the emerging climate change program (e.g., assessment of impact of human ecosystem management on lichen communities and species).

Plant species for bio prospecting have come from the studies conducted by the Biodiversity group. The *Jatropha* (biofuel) programme and the programme on dry land agriculture aim to identify and popularise elite planting material, based on laboratory evaluation and assessments. Two of the *Jatropha* accessions the program has identified have been selected for national trials as elite material. The program has done considerable work on DNA fingerprinting of genetic resources including landraces, wild relatives and varieties of rice, legumes (*Vigna*, *Cajanus*), millets and mangroves among others. Thus a vast amount of work has already been conducted under the program.

By 2008, Biotechnology had raised \$6 million through 19, often successive; follow on projects (Annex 5), since its start in 1993. More than 90 % of all funds raised come from the Department of Biotechnology. The Biotechnology funds have been awarded through a competitive, peer review process and therefore, provide a seal of scientific approval of the MSSRF work. Moreover the fact that successive proposals were approved by DBT indicates that the DBT reviewers found the conduct of research and output satisfactory and meeting its standards. The general assessment of the work by professionals, whom the review team interviewed, is that the program conducts good science and as a whole has the potential to become a national centre of excellence because of its unique niche of using advanced tools to address problems of poor households living in challenging environments and facing a number of natural disasters, e.g., salinity and droughts and hurricanes, Tsunami and floods. The activity which has received the most funding and which is most well known outside MSSRF is the development of transgenic salt tolerant variety of rice and characterisation of other genes of species in the mangroves.

Dr. Parida, who since February 2009, also serves as the Executive Director of MSSRF, heads the programs with a team of 30 senior and junior researchers. It boasts establishment of a state of the art facility for advanced biotechnology research. Nevertheless largely project funding has driven this program, like all others discussed below. It has the potential to increase its focus, coherence and linkages to other programs inside MSSRF and with advanced country institutions to a greater extent than it currently does. Some long term funding and stronger leadership at the Foundation level would enable MSSRF to achieve sharper focus and greater coherence within and among its six major programs. (See section –below on organisation and management).

The program's foremost achievement, and one which is widely known, is the identification/ characterisation and validation of a number of mangrove genes in transgenic rice systems for a biotic stress tolerance. The program has led to the generation of transgenic rice plants tolerant to salinity stress. The programme has also generated transgenic material to improve iron content in Rice using a gene from Mangrove system.

Large scale evaluation of transgenic plants has not yet occurred at the field level to test their potential for wider application, due to the pending Supreme Court decision regarding bio safety issues concerning transgenic crops. The program is working with a few state level agricultural universities on an informal basis for conducting small scale trials.

Using conventional technologies of tissue culture the program has also developed replicable in-vitro protocols of rare and engendered plant species in the Western Ghats and mangroves, documented diversity among the mangrove species using molecular markers, and has isolated a number of genes of potential interest for plant improvement. It is bio prospecting for novel compounds of medicinal and therapeutically value. These latter activities are less well known and perhaps at a less advanced stage. For product development, MSSRF has taken a lead and established linkages with technical institutions like the Cancer Institute and the Tuberculosis Research Centre (ICMR), Chennai.

The program is recognised for awarding doctoral degrees by the University of Madras. So far 20 students have been awarded degrees and 11 are currently pursuing work. The work has led to conference presentations and policy discussions at international meetings of the CGIAR centres. The program director, Ajay Parida, has won a number of awards, elected fellow of the National Academy of Sciences and Agricultural Sciences and serves on many international advisory boards (Annex 12 & 13). A few other team members are internationally trained and recognised.

Two long term programmes of the Biotechnology Group have been supported by the Department of Biotechnology under the Centres of Excellence and Centre for Bio prospecting, each with a five year commitment of support of about \$1.5 million. The program has led to nearly 80 publications in a combination of refereed journals, newsletters, and book chapters.

The Department of Science and Technology also provides support. Current and past scientists of the Indian Council of Agricultural Research interviewed for this assessment also stress that the strength of the MSSRF comes from its commitment to producing science in the service of the poor, in a way large government bureaucracies tend not to do. Besides a typical scientist is driven by the pursuit of science than by humanitarian concerns, a signature thrust of MSSRF. A majority of MSSRF board members too consider this to be one of the most important programs, demonstrating effectively how MSSRF connects science to society.

#### ***Future Challenges in the Biotechnology Program***

Despite its achievements, there are sceptics, critics and some genuine concerns about the program, which need to be addressed to help focus future directions.

Some (including one or two members of the board), wonder if MSSRF should be conducting research on transgenic crops at all. They are either opposed to the idea of transgenics altogether, or believe that there are other larger institutions (alternative sources of supply) for such research, which are better endowed with financial resources, long term (tenured) staff and equipment. Even supporters of the program wonder if MSSRF, which has been largely dependent on short term project funding and maintains all staff including the program director on short term contracts can sustain a program of this significance without the stature and presence of Dr. Swaminathan, who they believe has had considerable influence in mobilising funding for biotechnology. Those familiar with the program as well as the MSSRF staff working on biotechnology are well aware of these concerns but believe correctly that the program has passed the stage of being recognised or supported simply because of the Swaminathan brand and has proven its worth.



Although similar concerns exist about the viability and sustainability of the gene banks, they might become financially self sustaining provided they are used to identify genetic characteristics of developmental value through the biotechnology program.

Other concerns include the fact that MSSRF has not established effective links with the ICAR institutions to scale up its work, cooperation which large scale trials necessitate, and that it has not established linkages with the private sector for commercialisation of technology.

MSSRF has an enlightened IPR strategy. MSSRF has initiated the process of commercialisation of few of the technologies. It has signed an MOU with the Biotechnology Consortium of India Limited (BCIL), an undertaking of the Dept. of Biotechnology for facilitating technology transfer to appropriate private sector on terms and conditions to be decided (on basis of mutual discussion). It will include exclusive/ non-exclusive contracts, part or full payment and terms and conditions of sharing royalty of the licence fees as appropriate.

It is not clear yet whether MSSRF wishes to use the biotechnology program for raising additional funds by selling technology to the private sector, or to make the technology available free of charge for the use by poor households who are unlikely to be able to afford market solutions.

Another concern is the insufficient synergy between the biotechnology program and the MSSRF activity in other programs. Besides its claims as a good and solid scientific program, although not yet a full centre of excellence and strong on science, it is as yet relatively weak on the issues relating to field level activities. However, since many of the MSSRF programmes are designed to meet societal needs it has the potential to address these issues.

The review team took these criticisms on board and explored them systematically including particularly the viability and sustainability of the existing program in the absence of Dr. Swaminathan, and its ability to soar to a higher level. The team feels assured that Dr. Parida, has established his credentials and earned respect from his professional peers, both for his dedication to the MSSRF mission and his demonstrated achievements to date even though the program has not yet been able to show field level results. The potential for scalability of the technology on farmers' fields is yet to be proven. He has been with the Foundation for nearly 15 years, without a long-term contract.

Given that eco-regional issues are becoming important, the program has the potential to expand the scope of its biotechnology research on plant and animal improvement in a natural resource context in several different areas. For this to materialise it will need more funds to place a core group of at least five and 10 staff on long term contracts, and be able to mobilise additional project funding as well as acquire at least some essential laboratory equipment, or in its absence, have effective linkages with better equipped advanced research institutions in India, and in developed countries. Reviews of the CGIAR have pointed out that to recruit an upcoming biologist in a top notch university such as Cornell, needs a minimum investment in a laboratory of \$1 million. The annual expenditure of MSSRF for 2007 for all six programs amounted to \$1.1 million. It shows both the enormous possibilities for conducting high quality biotechnology research in India at a low cost, and the fact that even by Indian standards, the salary and incentive levels in MSSRF have been modest. Most have remained in the program due to their sheer dedication to the MSSRF mission and the relative freedom to operate independently without the bureaucratic hurdles of a university or a research centre.

Its linkages with other programs within the Foundation remain weak and so are the social science dimensions of the biotechnology program more generally in MSSRF. (See –below).

MSSRF also needs to establish collaboration with ICAR and state level institutions to undertake large-scale trials and develop a policy and strategy towards public-private partnerships. Given how contentious the debate has been with regard to biotechnology in India, and in which the use of molecular biology to produce transgenic plants is seen in terms of black and white, MSSRF is potentially in a unique position to be an honest broker in speaking on policy level issues in a nuanced way with regard to the appropriate use of biotechnology. Its engagement in scientific research to address social and environmental issues will provide it the credibility which most civil society institutions or government agencies lack.

Some have considered MSSRF to have been silent on the most controversial issues linking scientific facts and social concerns even though it can potentially be a powerful voice. Others the Review Team interviewed, including MSSRF management and scientists have indicated that MSSRF has placed enormous emphasis on bringing issues of biotechnology into the public domain objectively. In 1996, when crop biotechnology was in its infancy, MSSRF with the help of USDA organised an Asia Pacific Workshop on Bio safety, bringing in more than 16 countries in the region for developing bio safety protocol for the countries. It is using its convening power to involve and bring diverse people together for debate and discussion on relevant issues on Biotechnology. Prof. Swaminathan and the Foundation have played a key role in the establishment of a completely independent National Biotechnology Regulatory Authority of the Govt. of India.

MSSRF has also initiated many programs, which have been adopted by the Govt. of India as large programmes. For example, MSSRF's initiative of Genome Clubs – inculcating scientific knowledge and interest among school children-- has now become a National Programme operating in 21 states of India, with MSSRF coordinating the activities in 7 southern states.

Similarly, MSSRF has facilitated the establishment of Indian Network on Biofortification and is coordinating with the Centre for Rice.

To achieve these goals MSSRF will need long-term corpus support from neutral sources to develop a centre of excellence, with the biotechnology program being one of its core anchor programs. As a civil society organization with considerable scientific and moral credibility MSSRF will also need a communication strategy on its evolving role in biotechnology innovations to the general public. The communications strategy will need to be strong on both transparency and on contributing to an informed debate on the role of biotechnology in India's development in a constructive forward looking way.

### **The Ecotechnology Program**

The goal of the Ecotechnology Program is to achieve sustainable rural development by promoting pro-poor, pro-women and pro-nature technologies and their adoption. It pursues this goal by supporting research, development and diffusion of environmentally, socially and economically sustainable technologies, covering coastal, semi-arid and hill areas. It operates in multiple sites (a relatively large activity in Puducherry, two centres in Kendrapara and Koraput in Orissa, and three in Poompuhar, Kannivadi, and Pudukottai in Tamil Nadu) each with a coordinator and three to five scientific staff and support/administrative staff in the rest.

The Ecotechnology Program is led by Dr. Sudha Nair and is supported by the JRD Tata Ecotechnology Centre established in MSSRF in 1996 with support of the Dorabji Tata Trust. The Program has leveraged the Tata resources by 3 to 5 times in various years since 1996, by mobilising resources from other

sources (Annex 5). The program has the second largest number of staff, 4 principal coordinators, 7 principal scientists, 5 senior scientists, 27 junior scientists and 25 junior/support staff.

This review has drawn on the Institutional Assessment and Review of Activities of the JRD Centre completed by consultants on behalf of the Sir Dorabji Tata Trust, background materials for the Program Review prepared by the program and its other publications, the review team's visit to Puducherry and to the Tata Trusts in Mumbai. Due to shortage of time the team was not able to visit any of the other centres and therefore its observations should be treated with caution.

The twin concepts of Bio-village and eco-enterprise development are at the centre of the program. The Bio-village Model is meant to be a holistic approach to the sustainable use of bio-physical resources to improve livelihoods of the poor particularly, women. Eco-enterprises are intended to promote environmentally sustainable technologies in an economically viable way.

The Program is working with a range of technologies related to promoting good agricultural practices including crop diversification, organic farming, integrated farming systems, pest management, usage of bio fertilizers, promoting soil fertility by using soil health cards, water management and quality, energy needs and area specific field research. Its intention is to integrate a group of technologies on and off farm through innovative delivery models.

Like other MSSRF programs, on farm, the program uses the tools of participatory approaches working with farmers and off farm by working with women's self help groups, farmer's federations, youth clubs etc. Different types of Eco-enterprises are being promoted by the Centre including bio fertilizers, bio pesticides, mushroom, handmade paper, apiculture and silk reeling to name only a few.

Capacity building is central to the efforts of the Centre. The Centre's capacity building efforts use diverse sources of dissemination including VKCs, networks with farmers, scientists, NGOs, government organisations, extension workers and the industrial sector. Both concepts of Bio-Villages and Eco-enterprises are explored later in this section report.

The Tata Institutional Assessment and Review team has credited the program for "demystifications" and "dissemination" of a large number of eco technologies, and for putting them in place at different project sites ----leading to the creation of gainful environmentally sound employment opportunities for women in rural areas. Productivity of more than 5000 ha of agriculture land has been enhanced, over 400 farmers have adopted integrated farming, and 310 hectares are converted to organic farming.

The program has established many vibrant self help groups and community based organisations, 10 grassroots institutions, two of them community banks, 567 self help groups, covering 8,500 households using bank credit of Rs.13 crores, a "significant achievement, given the staff are mostly of technical background" . Strong women and men community leaders have emerged who act as in-house resource for conducting training programmes and are invited by the government departments at the district level. Another important achievement has been the election of twelve women self help group members as leaders of the local self governance institutions i.e. the Panchayats.

The Community Learning Centre approach adopted by the Ecotechnology programme to promote functional literacy among the community members is recognised as a best practice by UNESCO. Over one thousand women and men have become literate through the Centre's efforts.

Among the challenges the Tata review identified is marketing. "Marketing continues to be a difficult

area and one that poses many challenges for the future”. The development of independent viable grassroots organisations poses another challenge. The review notes that their current financial and governance structures of these grassroots organisations were not sophisticated, and their management and financial structures did not meet best practice standards. The Tata review attributed these weaknesses to operating in a project mode. It has recommended a shift to large multi-site umbrella projects like the bio-industrial watersheds project, climate control initiatives and thematically focused locations like the SHG Mentoring Centre and the Fish for All centre. Yet there seem to be many themes in the eco-technology centre’s work and how they integrate under the bio-village theme is some times unclear.

The review also made several other recommendations including the need to:

- Build strong independent financially stable grassroots federations
- Develop staff remuneration policies with special emphasis on retaining good staff, and a staff development strategy
- Develop a medium term strategy formulation capability
- Develop a more system based approach to impact assessment and
- Upgrade and modernise laboratory facilities

The Ecotechnology program is already addressing some of these recommendations, particularly those which can be addressed at the level of the program as distinct from being systemic and applicable at the foundation level. It has developed partnerships with BASIX and Dhan Foundation to build financially sustainable grassroots federations, is working on streamlining procedures, clustering self help groups into thematic federations, providing access to financial services, facilitating them to leverage funds from different schemes of the Govt/banks etc, strengthening their livelihood options, skill empowerment (technical/managerial etc); and improving access to markets.

To help address the issue of capability for the development of a medium term strategy formulation capability and a system based approach to impact assessment – six monthly retreats of the JRD staff are being organised.

The program is upgrading and modernising laboratory facilities for the IPM and INM labs, an effort, which will have the new project support from DBT and other funding sources. New fundraising efforts are also underway.

There is scope to improve selectivity and improve the quality, scope and impact of programs in additional areas including particularly their scalability and sustainability since the consensus seems to be that it is not MSSRF’s comparative advantage to scale up pilot program on a significant large scale. There are also other potential risks to the program.

The concept of bio-village, at the centre stage, needs a critical examination. It appears not to have been integrative enough with strong synergy among the various projects, either of the Ecotechnology program, or of MSSRF as a whole, at the village level, to provide a critical minimum range of technologies to call it a “bio-village”. The program’s approach appears, based on the current fund raising strategies of the program as well as of MSSRF as a whole, to have been opportunistic, based on the possibilities for project funding and opportunities for working with specific stakeholders in introducing specific ecologically sound technologies at selected local sites. Understandable as this approach is from a historical perspective, the program rhetoric faces the risk of creating unrealistic

expectations, which it may not be able to meet unless there is a more programmatic long-term approach towards ecotechnologies but also greater coordination among MSSRF programs. Even with that MSSRF faces a choice of focusing on the more promising individual eco-technologies which have the potential to scale up and make a credible case to the stakeholders who must do the scaling up, or to demonstrate on a small scale what eco-villages can realistically mean. It appears to the reviewers that the Ecotechnology program as indeed several other programs have not spelled out these choices between the vertical approach to specific technologies in developing a value chain with a focus (a la Amul) and the horizontal approach to work with several technologies in a community or a geographical space and its implications for this and other programs of MSSRF going forward.

In reality the program as a whole has been working with a broad range of technologies rather than focusing on a few with huge potential to increase incomes sustainably, and then allowing the time and the effort to articulate its implications for the concerned stakeholders who must scale them up. The example of sunflower production is a case in point. Promoting sunflower production is by no means a new idea; to introduce a crop in an area but to develop a supply chain that is effectively linked to the market on a large scale will require a consistent, long-term approach. This activity has reportedly gone into an adoption mode thanks to the support the state has given to the farmers. MSSRF can articulate what promotion of sunflower and other such ideas will mean in terms of their policy, institutional, financial and technological aspects, including who the relevant stakeholders are and how to develop a dissemination/partnership strategy for lessons learnt to effectively and sustainably scale up the ideas emanating from its work.

Second, in a study conducted by MSSRF on Designing Rural Technology Delivery Systems for Mitigating Agrarian Distress being carried out correctly notes that “factors underlying the agricultural crisis are complex and manifold and relate largely to the nature of economic strategy pursued by the state (emphasis added) as well as several institutional, technological, ecological and weather related factors”.<sup>7</sup> The program’s focus appears to be supply side, on the extension of known technologies rather than on the systematic constraints analysis based on a theory of change and a logical framework at the outset, as well as the identification of the possible potential stakeholders with whom the project (or the program as the case may be) under consideration would need to partner to understand why many of the technologies which remain on the shelf do not get adopted in the first place. Whereas this is the general approach the Ecotechnology Program has adopted, there is a general acknowledgement within the foundation that its work has been weak on the side of demand assessment/marketing and commercial viability.

In the case of the irrigation project (which the Program Review team visited), such systematic analysis was conducted at the outset of the complex and manifold factors. That approach seems to have helped the project team to determine that the focus on technology alone will not solve the problem, and to reach out to the other relevant stakeholders, with considerable impact, thanks to MSSRF interventions.

A thorough internal review and screening processes and the necessary skill mix in teams (including socio-economic staff) will ensure true multi-disciplinary multi stakeholder pilot approaches that are strong on operational research on what works and why and what does not and why not as well as development. This will require strong social-science input including particularly the economic aspects. In this context the Tata review team considered the promotion of grassroots organisations

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<sup>7</sup> Designing Rural Technology Delivery Systems for Mitigating Agrarian Distress supported by the office of the Principal Scientific Advisor to the Govt of India, 2007-2009.

by the Ecotechnology program to be a “significant achievement given the staff are mostly of technical background”. This also may explain the weaknesses in the financial, managerial and governance issues noted by the external review team in the development of the grassroots institutions. Establishing an alliance with Basix and the Dhan foundation may be a good and a necessary approach, but it may not be sufficient without in-house expertise in MSSRF with commercial/demand assessment and marketing skills.

For demonstrating “how to develop” sustainable grass root institutions on a scale, MSSRF will need sufficient skill mix internally to partner effectively with others. The Ecotechnology program believes it has the necessary skill mix or that the biological scientists can pick up socio-economic skills. This may be true up to a point. But the review team also noted insufficient synergy within the foundation across programs to systematically develop approaches to participatory development, learn lessons and make the best use of all the knowledge MSSRF develops routinely in the ecotechnology and in other programs (see below).

A theory of change and a logical framework will help strategy from the outset, such that possible constraints to successful piloting and scale up are identified through constraint analysis, at the beginning of each project, including the development of an approach to working with all relevant partners to ensure that, even the demonstration pilots, can tackle the most binding constraints. As challenges with regard to finance, pricing and marketing multiply as the pilots are scaled up or replicated such an approach is essential for developing credible pilot models with potential for scaling up the programs by others. The team stated that they have already begun to adopt this approach in the watershed programme being implemented in three sites – Pudukottai/Karsanur-Puducherry and Koraput, and also in the Fish for All Programme.

Currently though all sites have an LFA (Logical Framework Analysis) it is unclear how effective the M and E system is to learn systematic lessons for scaling up or replication.

Finally whereas the Ecotechnology program is moving to a thematic approach, it would benefit from a central overarching theme, that is outcome oriented such as sustainable livelihoods for the poor and women, with the exploration of the full implications of this theme. For example, in Kendrapara, the JRD Centre is promoting a number of initiatives such as sunflower cultivation, backyard poultry, Integrated Intensive Farming system, system of rice intensification and seed multiplication. It is also supporting the formation of self-help groups and their capacity building. But whether and how these various activities form part of a livelihood or risk reduction strategy at the level of a household and help increase income, improve livelihood, or increase ability to withstand shocks is not clear.

### ***Challenges going forward***

The biggest challenge for the Ecotechnology Program is to marry supply led approaches (based on technologies it can provide) and demand led approaches (what individuals and markets will sustain).

It should

- Make an inventory of all ecotechnologies it is working with
- Explain in simple terms which rural communities will understand just what these technologies consist of
- Prepare a realistic analysis of the constraints to their adoption of a rigorous approach to developing pilots including particularly the market constraints and cost benefit analysis (discussed at the end of this report);

- Develop Integrated Strategies with other programs in MSSRF to increase cross program learning
- Increase the role of VKCs in assessing village needs and responses to technologies being supplied]
- Develop a vigorous program of M and E.
- Move to an Umbrella Program for Sustainable livelihoods (with measuring net increase in personal or household incomes and/or risk reduction as a result of interventions)
- Work with all other programs to consolidate livelihood approaches;

## **Food Security**

Despite rapid economic growth, and food surplus status at the national level, malnutrition and food insecurity are still important public health challenges in India. India has 40 % of the world's malnourished people, although it has only 20 % of the global child population. Nearly 30 % of India's children are born with low birth weight, i.e., less than 2.5 kg, due to insufficient food and nutrition intake of their mothers during pregnancy. Nearly 87 percent of pregnant women suffer from anaemia and 44 % of maternal deaths worldwide resulting from anaemia occurs in India. Malnutrition is particularly acute in Orissa, Maharashtra, Bihar, Madhya Pradesh, Uttar Pradesh and Rajasthan. Gender disparities are significant. There are more underweight girls than boys and prevalence of micro nutrient deficiencies too are high (e.g., vitamin A, iodine and zinc). The World Food Program notes that MSSRF's work on the Atlas of Food Insecurity in 2001-2004, and the regional consultations in 2004-05 have played a major role, among other things, in its own advocacy and "the increased awareness among the government's decision makers" about the food and nutrition situation in India. The MSSRF mapping of the food insecurity situation in India also influenced WFP's work in other countries in Asia, e.g. Cambodia where WFP engaged MSSRF to prepare the Food Security Atlas.

The programme area of food security comprises a small part of the overall work done by the Foundation. Most of it has an upstream focus on research studies, preparation of food security atlases, reports and policy advocacy towards creating a food secure India again mostly driven by project funding supplied by donors. Some field level projects have also been/are being implemented. The work is being carried out through the B.V. Rao Centre for Sustainable Food Security and the Ford Foundation Chair for Women and Food Security. It is led by Ms. Bhavani. The initiatives in Vidarbha with the families of farmers who committed suicide is also coordinated under this programme area. Sources of support to this programme work come from Venkateshwara Hatcheries, World Food Programme, Bajaj Trusts, Ford Foundation, Hunger Project and Government of Tamil Nadu, Swiss Development Corporation and Government of India. The Food Security program is preparing a proposal on the evaluation of the National Rural Employment Guarantee Scheme (NREGS), one of the boldest programs GOI has started. A demand driven program which has been extended to cover all districts since its launch in 2006, NREGS is consistent with MSSRF's mission and provides a safety net to the poorest households using legal guarantees for 100 days of work for every household that demands unskilled work, involving about Rs. 9105 Crores (about \$205 million annually). With its closeness to rural communities, MSSRF can provide a special perspective on how it works in practice.

A major contribution of MSSRF relates to the preparation of Food Insecurity Atlases of Rural and Urban India and an Atlas on the Sustainability of Food Security in India. The first nationwide Atlas jointly produced by the Foundation and the World Food programme helped to highlight the nationwide hotspots of food insecurity, and suggested an action plan to help India become food secure. Parallel to the preparation of national level atlases, several State level reports on food insecurity have been

prepared. The all India report on the State of Food Insecurity in Rural India has been updated and released on February 20, 09.

MSSRF has been engaged in conducting research studies, reports, designing programmes on the development of hunger free areas. A detailed report on priorities in the food nutrition sector for UNDP was prepared by the Foundation. MSSRF assisted the Tamil Nadu Government in the development of an integrated implementation strategy for the Chief Minister's programme to eradicate poverty induced hunger. For the Global Hunger Project a detailed strategy was developed on the theme 'Hunger free India – the final milestone'. The reports highlighted that achieving food and nutrition security required that the focus be on the individual rather than household as women and children tended to suffer the most from under nutrition. It also stressed the importance of addressing non food factors like safe drinking water, sanitation, environmental hygiene and primary health care.

On the invitation of the Government of India, as Special Projects, MSSRF conducted two research studies and recommended measures to mitigate agrarian distress in Idukki and Alappuzha districts in Kerala which helped the state of Kerala to mobilise Rs. 20 crores of central government resources. The Foundation also prepared brief State level reports on the issue of food security with special attention to problems of small farmers. These reports formed the basis of regional consultations with stakeholders in 2004-05, which fed into the Reports by the National Commission of farmers titled Saving Farmers and Serving farming.

The processes followed by MSSRF with regard to advocacy have been important and helped put international organizations on the map in India. WFP and FAO organised a National Food Security Summit in New Delhi in 2004, to present the findings of the 3 Atlases before a wider audience of professionals and public policy makers. The first Atlas – Food Insecurity Atlas of Rural India was released by the then Prime Minister Mr. Vajpayee. The other two were released by the then President, Dr Kalam. An ambitious road map for achieving the goal of hunger free India by 15th August 2007 was developed by MSSRF jointly with WFP. Two important recommendations were made; 1. Bring about convergence and synergy among all ongoing food security programmes and involving grass-root democratic institutions in implementation, 2. Setting up of a National Food Security Trust with an initial grain allocation of 10 million tonnes for the purpose of providing food grains to local bodies and civil society organisations for carrying out location-specific and felt-need based developmental work.

Following this, MSSRF, WFP and the National Commission on Farmers jointly organised a series of regional consultations on the theme 'Mission 2007: Hunger Free India' from September to November 2004, culminating in another national consultation in November 2004. While this has increased the profile of international organisations supporting this work by MSSRF, some of those interviewed wondered if this effort has at all resulted in any concrete action by the government towards improving the malnutrition situation, leading to some fatigue with regard to the consultation process.

In association with the Vistaar Project of USAID and Indian Council of Medical Research (ICMR) a National Nutrition Conclave was organised by MSSRF in August 2007 in Chennai. Participants identified ten recommendations for achieving nutrition security. Some of these participants are preparing a national strategy for children, preparing a white paper on nutrition and focusing on urban poor. The workshop led to the formation of a Coalition for Sustainable Nutrition Security chaired by Prof Swaminathan. The Coalition adopted a Leadership Agenda for Action in September 2008

Field Projects that can translate these concerns on changes on the ground constitute a small portion of



the overall work done under the Food security theme. In 1997-98, the Hunger Free Area Programme was launched for the total elimination of hunger in two Panchayats of Dindigul district, Tamil Nadu. Steps were also taken to end hidden hunger caused by micro-nutrient deficiencies in one block of Dharmapuri district of Tamil Nadu through the cultivation of appropriate vegetables and fruits.

The problem of access and delivery highlighted by the Rural Atlas, led to the initiation of action research projects to address the problem of food insecurity at the field level and a Resource Centre for Community Food and Feed Banks was set up with WFP. Pilot projects have been implemented in tribal pockets in Orissa and Tamil Nadu. A training manual on setting up Community Food grain Banks has been prepared. Fodder Banks were promoted in Ladakh through partnership with a local NGO. The Venkateshwara Hatcheries Group supported a project to improve feed grain availability in the Namakkal region of Tamil Nadu that houses the poultry industry.

A good example of cross programme integration was the cluster of micro studies carried to study the infant feeding practices and the nutritional status of mothers and children below three years in select tribal hamlets in Wayanad, Kerala and Jeypore, Orissa. Awareness of the high malnutrition levels revealed by the studies led to the community demanding a Centre under the Integrated Child Development Services from the Government and initiate an emergency feeding programme in the lean season. The Centre has since been opened. MSSRF has also been supporting the strengthening of food security by helping the households establish nutritious kitchen gardens. In Jeypore, a workshop was conducted with the community for sharing the findings. Based on this monthly growth monitoring has been initiated. In the monthly weighing of children, problems in feeding and care of children are discussed and individual counselling is provided to mothers.

MSSRF was host to many national and international workshops on the topic of food security. Numerous Research papers, articles and books on food security have been published.

MSSRF along with several leading academic institutions in Tamil Nadu developed an undergraduate curriculum in Food Science and Quality Control and Nutrition Science for colleges offering a BSc programme in Nutrition. A short course curriculum titled 'Hunger, Famine and Food Security' was developed for the United Nations University of Peace, for functionaries of various developmental organisations. Linking with the Village Knowledge Centre, an initiative content on nutrition support for children up to two years was developed.

A research study has been undertaken recently on institutional feeding programmes and their possible linkage with small holder farmers.

In 2006 MSSRF commenced work in Vidarbha where farmers were committing suicide. The programme works with families of these farmers. The Programme in Vidarbha has three components: providing education support to children whose fathers committed suicide, forming federation of women farmers for sustainable livelihoods and establishment of village knowledge centres (VKC). Under the education programmers scholarships are provided to children. MSSRF has a good track record in helping to re-orient high school drop outs to productive lives, so focusing on the youth in Maharashtra is perhaps a good idea.

The 20 women farmer groups aim to strengthen the livelihoods by promoting improved management of natural resources and setting up of micro enterprises. An informal technical support consortium set up includes Agriculture University, research institutions, finance and marketing support. The focus of VKC is on disseminating need-based information including information on government entitlements

and helping the rural community including the women farmers accesses the same. The Vidharbha program raises three questions: the logic of its being under the food security program rather than being under Ecotechnology since it seems to focus more on the technologies to manage soil and water resources, second, the reason why unlike in the case of the food security programs, the Vidharbha program lacks a public policy and institutional focus to address the thorny issues with regard to cotton seed and output pricing, marketing, untimely imports of subsidized cotton, and farmer access to finance, well articulated in a recent book *Agrarian Crisis in India*, and third, the relationship between programs such as those in Vidharbha and the six programs generally<sup>8</sup>. Organisationally, where to put such new programs, whether to turn them into regional centres, and their relationship to the existing programs will need to be addressed.

This concern is illustrated by the work of the program in Maharashtra on the suicides of the cotton farmers, where expectations from MSSRF are high. From the Vidharbha strategy MSSRF focus to date has been on education of high school dropout students and through them mobilisation of their mothers. This seems to be a good example of learning across programs. The Foundation has demonstrated success in achieving good results in fostering productive young citizens out of high school dropouts in the Biodiversity Program (see ---section for details). The program in Vidharbha is also focusing on soil and water management and on village knowledge centres but it is unclear how much cross learning has there been from Tamil Nadu. MSSRF has an important role, but it needs a strategy on the timing, content and level at which such advocacy should be pitched.

Neglected and Underutilised crops:

MSSRF has been promoting nutritious but neglected and underutilised crops (millets) under different programme initiatives over the years.

Promotion of millet cultivation

Conservation and value addition for income generation as well as advocacy workshops have been undertaken under the Programme Areas of Ecotechnology and Biodiversity Conservation, e.g., the IFAD funded project on 'Contribution of nutritious but neglected crops (millets) to food security and incomes of the rural poor'

In 2004-05, a four year project on "Empowering the Rural Poor through improved use and marketing of neglected and underutilised species" managed and coordinated by the Advisor Biodiversity and a one-off research study on role of markets in sustainable utilisation of millets was also undertaken as part of an international study supported by FAO and coordinated by IFPRI. But again the link between this work and the biodiversity program has been limited.

### ***Future Challenges***

Notwithstanding these achievements, the food security program lacks an overall long-term strategy and a focus. It lacks a social science group with the policy, institutional capacity. Unlike the work on Coastal Mangroves, biotechnology or the Village Knowledge Centres which have been purposeful, long term and consistent areas of work in which MSSRF has created a niche for itself, the food security work seems to have been opportunistic, project driven by the availability of funds on the one hand, and by the need of different donors to use MSSRF to increase their own profile. In fact, the programme area per se started getting independent focus only from 2000 onwards when work

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8 Narasimha Reddy and Srijit Mishra, Oxford University Press, New Delhi, 2008,

commenced on mapping the food security situation in the country. Although in the initial stages this may have helped to put MSSRF on the map and although advocacy was important earlier there are many possible directions in which the food security program could move in the future.

- One would be to produce, periodic (without being wedded to producing them annually or biannually), national reports on the changing state of India's food security. Its purpose would be to assess the role of external factors such as climate change, and natural resource degradation on food security on the one hand, and to increase the accountability of public policy makers to improve food security at the individual and household levels on the other.
- The second option would be to focus on livelihoods including NREGA, and develop more in depth knowledge of the relationship between livelihoods and food insecurity issues at the household level. Studies, including MSSRF's, have shown that household income is not highly correlated with levels of nutrition, and that women's nutrition education and other interventions such as water and sanitation, in addition, to the supply of food, matter.
- A third option would be to analyse the efficiency and effectiveness of the different public policy instruments, such as the targeted food subsidies, food producer and consumer pricing and subsidies towards inputs and compare those policies with other more efficient ways of using public monies to reduce household food insecurity.
- The fourth option is to develop pilot models of community grain banks and community managed nutrition effort, such as the ongoing initiatives in Jeypore. But the reviewers are not convinced that MSSRF has thought through a rigorous scientific experimental strategy to developing pilots so as to learn systematic lessons for scaling up these small models.
- Depending on the area MSSRF chooses it will need to focus both on longer term funding to produce these outputs as well as a staffing with the necessary skill mix. Currently it appears to depend heavily on short-term consultants and retirees (not necessarily a bad approach when they are experienced, qualified and at the cutting edge of state of the art) to undertake ad hoc food security tasks.

### **Village Knowledge Centres**

The Village Knowledge Centre initiative is a pioneering initiative of MSSRF. The VKC initiative was at the cutting edge in promoting the powerful potential of Information Communication Technology (ICT) to bridge the divide between rich and poor, urban and rural people and to demonstrate how the idea can be made operational for poverty reduction.

By demonstrating how ICT can work in practice, the interest in and the use of information technology idea has spread like a wildfire, a spectacular success in itself. Even recognising that its spread is explained by a variety of factors, MSSRF's contribution has been widely acknowledged and MSSRF has had influence at the highest policy making levels in India and has stimulated similar major national and international initiatives. MSSRF was at the forefront in 1993. But now many actors have entered the scene. Donors of the initiative are looking to MSSRF to systematically articulate its own process of learning, and particularly its lessons for other actors. Those actors have adopted quite different models than MSSRF's (a village entrepreneur model is being followed in the Common Service Centres which is significantly different from that of MSSRF, and the conceptual framework of CSCs is also significantly different from the VKC concept. Several other agencies and Ministries have their own schemes for ICT connectivity in rural India, but it is not known how far they will follow the MSSRF model). They all have different kinds of knowledge, experience and capabilities, and are operating under India's (and the rest of the world's) highly diverse institutional and socioeconomic

circumstances. Each of them meets a different set of challenges. Therefore replication, adaptation and scaling up, as appropriate, require considerable thought and good planning and implementation if the payoff to investments is to be commensurate with ICT's considerable potential.

The VKC initiative also helps to highlight the opportunities and challenges MSSRF faces in its business model and practices going forward to have a continued large and sustained impact.

The VKC initiative started in 1992 during "Information Technology: Reaching the Unreached," a dialogue at MSSRF. Known originally as the Information Village Research Project, and supported in 1997 by the International Development Research Centre of Canada, or IDRC, the first VKC was established in the Kizhur village, Union Territory of Puducherry in 1998. In 2004 the Jamsetji Tata Trust helped set up National Virtual Academy for Rural Prosperity and in the same year the "Mission 2007: Every Village a Knowledge Centre" was launched at the Foundation to bring together these concepts, with the goal of establishing a Knowledge Center in each of India's 600,000 rural villages by the 60th anniversary of Indian Independence, August 15th, 2007. Prompted by the success of the MSSRF initiative, the Finance Minister announced that the Government will join the National Mission with support of Rs.100 crores to VKCs. The Department of Information Technology is in the process of setting up 100,000 Common Service Centres (CSCs), one in every Panchayat of India. This ambitious goal of Mission 2007 has not materialised but it has brought together more than 400 partners from all sectors--public, private, technology, academic and civil society-- in an effort to narrow the rural-urban technological gap. Since 2007 this network has been called "Grameen Gyan Abhiyan (GGA)" or the Rural Knowledge Network. Its secretariat is based in Chennai in MSSRF. Mr. Senthil Kumar heads the VKC program.

The VKC experience has been written up in the World Bank's World Development Report 2008. It has been visited by a number of international dignitaries and triggered similar initiatives in other countries such as PAN Africa Network, ICTA in Sri Lanka, Telecentre Network in Bangladesh, PhilCeCNet in Philippines, Mission Swaabhimaan in Nepal. From Rwanda – a study team visited India (2007) to develop its own strategy for ICT4D.

The Village Knowledge Centre concept consists of a three-tier system using a hub and spokes model: the national hub, block hubs and Village Knowledge centres. The sheer technical aspects of getting it right under India's infrastructure can be a challenge and understandably has taken a few years. The national hub is located at MSSRF in Chennai and connects several data generators and data providers like universities, experts, financial institutions, corporate sector, focusing primarily on content development and capacity building.

Village Resource Centres (VRC) which form the second tier are located at the block level. They are linked to MSSRF through teleconferencing and satellite connectivity in partnership with the Indian Space Research Organisation (ISRO), which gives satellite connectivity. The block level hubs perform a two-way function. They generate and transmit knowledge resources to the Village Knowledge Centres and MSSRF. They also tap user demand and help articulate specific types of demand for information to MSSRF and mobilise the requisite information in local languages. The information is disseminated from the VRCs through Village Knowledge Centres (VKCs). Each VRC serves around 40 villages.

The third tier comprises the Village Knowledge Centres (VKCs) located among a cluster of villages or at the panchayat level. Space and electricity for the VKC are provided by the local community based organisation, NGO's, local self-government etc. The objective of VKC is to provide knowledge

services to the village with personal interface of the knowledge system with the users (villagers). They are also involved in selecting Knowledge Workers, spelling out needs of the communities particularly in the areas of content and training / awareness programmes.

The conviction that rural transformation requires rural men and women and all social strata be equal partners, has given rise to the concept of fellows and knowledge workers. This has helped create a horizontal platform, which is able to meet a variety of vertical sectoral needs of the rural poor to help improve information and knowledge, skills and delivery of a range of different public and private services in different sectors. This broad objective of creating a multi-sectoral and multi-level platform of the VKC seems to be working from the range of information providers that are using VKC as a tool. And yet, there is considerable interest in MSSRF making a convincing case of the VKC model in terms of its human capital, financial and institutional implications for replication and scaling up

In the VKC approach, individuals from the community possessing leadership skills, social commitment and traditional knowledge are identified as fellows and knowledge workers. They are trained in running the VKC and are responsible for creating community ownership and stake in the management of the centres. They act as conduit for information: by carrying queries and feedback to the Village Resource Centre and disseminating the information available with the VKC to local community. They serve the community by sharing the knowledge and skills available with them and that received through the training programmes. They enable a two way flow of information by sharing their needs as well as their grassroots knowledge and traditional wisdom with scientists and academicians and the knowledge of scientists, academicians, the private and civil society actors with the villagers.

VRC's horizontal platform to meet vertical needs in different sectors is achieved by the VKC acting as a bridge between the village and the outside world. VKCs network with government departments, educational institutions, voluntary/social organisations so that they can meet the demands and needs of the local populace. They provide information on agriculture, markets, employment opportunities, government entitlements and weather. They also provide services like telemedicine and tele-education. Different training programmes are organised by the VRC based on user demand emanating from the VKC. Either in-house resource from among the MSSRF programs such as the Ecotechnology program are used (using the tools of multimedia DVDs, films and trainers) or outside experts are brought in as the need arises from local and state government, banks, universities and NGOS to provide inputs. VRCs have helped in skill development by making the youth and children computer literate by conducting certificate-training programmes in computers.

The fact that beneficiaries and benefits grow over time was evident in Puducherry, a "poster child" centre which has been in existence for more than a decade, and which the review team visited. Impact includes helping the poor gain access to information on government schemes intended for them but of which they are unaware, capacity building of the farmers, and cattle owners, women's groups, and children on a range of issues based on local demand and needs, helping youth gain access to employment opportunities, and by developing computer and other skills securing livelihoods and promoting new economic opportunities. An example of the VRC/ VKC support for livelihood enhancement includes providing information on weather forecasts to fishermen and cultivation practices, pest control, promoting value addition and disseminating information on the market prices. VRC/VKCs have also facilitated small entrepreneurial activity by organising women and training them to set up micro enterprises and gain access to financing.

Virtual training is complemented by the possibility of face to face physical contact at the centre as well as the production and distribution of local newspapers. This seems to help but the relative importance

of these various tools in reaching the unreachable and voicing the voiceless is not known through any systematic analysis to design future programs. A thorough analysis of various dissemination tools with reference to local context and the information they provide needs to be carried out. This study would provide some useful insights into financial sustainability of the centres.

In coastal areas VRC/VKCs are serving an important role of improving livelihood and saving lives. Fisher folk rely on the weather reports and information about wave heights so as to avoid going out into rough seas. Announcement of the impending Tsunami in 2004 through various channels, including the internet and using loudspeakers, was said to have saved lives. Information on potential fishing zone and market prices helps strengthen livelihood. Government and banking officials from different sectors, as well as university professors who are working with the program and whom the review team consulted, considered that the VRC has been a very effective conduit for reaching rural people with information and government services and for understanding their needs, in a way that governments, universities and banks seem either unlikely or unable to do. A professor of electrical engineering now works with village children to promote science and math education as good grounding for college entry and similarly livestock experts do participation.

The knowledge centres also seem to be bringing about change in gender and social relations. Half the knowledge workers are women. By learning to use computers, publishing their own local newspaper and answering questions posed by mostly male dominated government and panchayat office holders, women stressed that they had gained new confidence and status within the community. Age old discriminatory practices against dalits (who allegedly fall in the lowest rung of the caste ladder) are being challenged by strategically locating Village Knowledge Centres in dalit habitations and employing them as knowledge workers.

### *Going Forward*

The external review of National Virtual Academy (NVA) in 2007 assessed progress, the institutional capacities built up to meet the challenges of Mission 2007 and suggested course corrections to strengthen the initiative. Its 10 recommendations were primarily focused on NVA moving upstream to learn strategic lessons for the Mission 2007 Initiative with respect to the design and implementation of similar or alternative programs and let the day to day operations of VKCs to others.

NVA is making progress in addressing the issues raised by the external review. The issue of lack of clarity in the division of roles and responsibilities between the NVA and Informatics lab has been addressed by developing a new structure for the programme area. MSSRF has decided that NVA is the overall umbrella for its ICT enabled development activities. It has four divisions: Informatics, Village Resource Centres/Village Knowledge Centres, Grameen Gyan Abhiyan and Jaksetic Tata Training School (JTTS). Clear roles and responsibilities have been assigned to each division. A study on the different VKC models is underway and will assess the relative advantages and disadvantages of various rural connectivity and business models. The recruitment of the fellows has been decentralised being carried out by the regional committees. NVA is supporting the implementation of the Government CSC programme by developing Standard Operating Procedures, toolkits and resource materials for the managers of CSC. Further, JTTS is organising training on different subjects for the CSC managers on facilitation skills, community participation in VKC, development of a participatory plan etc.

### **Program Review Team's Conclusions**

The Program Review conclusions are similar to the ones reached by the external assessment. It has a huge but as yet unrealised potential because it is not sufficiently harvesting its learning to push

the frontiers of knowledge for accelerating the process of development. It needs to become the Google for, by and of the Poor. The review team noted that the results in Maharashtra and other centres are perhaps less impressive than in Puducherry, because conditions in the former are less favourable. Puducherry is a semi-urban centre with good infrastructure, (the Government provided a very spacious centre for the location of the VRC), more reliable electricity supply, more educated population and more liberated women even among the so-called backward class. What does this mean for the design and implementation of the schemes elsewhere? While MSSRF has been strong on (and rightly busy with) the implementation of its own program, it has performed not so well in systematically monitoring and evaluating the program's performance, its strengths and weaknesses to derive broader lessons or to articulate a systematic process of learning for others.

Assessing the costs, benefits and impact of the information and communications technology is a difficult task methodologically and empirically but it is crucial to learn lessons for replication and scaling up. According to MIT's studies of enterprises in developed countries where ICTs have been introduced, the introduction of ICTs has resulted in a wide range of unconventional, difficult to quantify and measure benefits. ICTs also entail costs which go beyond the initial introduction of the hard and the software but other costs critically determine the success of ICTs. In the MIT study, only 10 per cent of total investment needed to ensure effectiveness of ICTs was in the hardware, 20 per cent in soft ware, and the remaining 70 per cent in human resource development, changes in processes and organisational arrangements, needed to realise the benefits of technology<sup>9</sup>.

Benefits grow over time as the technology is adopted by a larger number of community members. People's increased access to information, knowledge, skills, and livelihood options results in increased incomes and productivity. Measurement of productivity is critical but is difficult because increases come from unconventional sources, i.e., from increased reliability, timeliness, quality and inclusiveness of public and private services and not so much from increase in "traditional" outputs such as goods manufactured although the scope to achieve these gains from all these sources is considerable in India.

Furthermore, once ICT technology is available, there is vast scope for numerous applications of the freely available web based software to meet the varied needs of rural people, as well as to take the ICT technology closer to consumers, for example through cell phones and PDAs which are becoming increasingly popular in India. MSSRF can help articulate in detail, based on its own experience, the processes it followed, the partnerships and institutions it worked with and the complementary investment needs for the 100,000 centres it has helped to stimulate to ensure they become effective.

While the Government is setting up Common Service Centres, the viability and the effectiveness of those centres is a concern for many that the program review interviewed. Both will depend on deriving relevant lessons from Tamil Nadu and Puducherry. If the centres are operated largely with the support of the private sector, they may open up the rural markets though without systematically

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9 See for example, IT and Organizational Productivity, PPT, by Professor Erik Breynjolfsson, MIT Center for Digital Business, <http://digital.mit.edu>. The NVA team is involved in monitoring programmed activities and progress. They are also sharing their learning's with others by organizing visits of individuals and study tours. Each VKC develops its annual plan based on user demands the implementation of which is monitored on a regular basis. The information on users of the VKC, the queries made by them, the reach of the various training programmes profile is also collected and assessed. Frequent monitoring visits are made by the staff and suggestions are given to improve the functioning of the Centres. Individual case studies are also prepared documenting the benefits of the VKC initiative. The NVA is in the process of developing a detailed M and E system incorporating both output and outcome based indicators.

building the human capital of rural people or contributing to social change. On the other hand, if they are operated by NGOs with specific areas of the NGO focus, they may not achieve the larger public goods function of providing a horizontal platform to meet a variety of vertical needs in a way the VKCs of the MSSRF currently seem to be doing. This calls for systematic comparison of alternative models under diverse conditions which IDRC has reportedly undertaken

Yet another set of questions raised: Are MSSRF VKCs helping make the government more effective in the delivery of services and more accountable to people by providing them more information, or are the VKCs substituting for, and even providing an excuse to non-performing government departments who would rather take the short cut of using VKCs than reach the village communities themselves? Some feel that formalisation of this relationship by developing the VKC as an information outlet of the government, may be one way to achieve financial sustainability.

Financial sustainability of the Village Knowledge centres approach is another concern recognising that in the poorest areas these centres may have to be subsidised. Should they become self financing in the relatively prosperous areas and if so how soon? Some efforts have been initiated for generating income to run the VRC/VKC: through different ICT-based (conducting ICT-based curricula, maintaining Self Help Group Accounts, Examination Results, status of passport / visa, etc.) and non-ICT based services (selling the products, artificial insemination, control and test kit of mastitis, selling forms, etc.) and there seems to be considerably more scope to charge fees once the benefits of the program are evident. There is an urgent need to harvest more of MSSRF's learning on the existing VRCs and VKC e.g., who participates, with what set of resources, how much do they learn and how quickly? Based on the study a strategy which can first be tested in locations where the VRC/ VKC have been in existence for more than five years could be developed.

Finally, some have suggested that the larger alliance of GGA lacks a clear cut mission, objectives and plans of action and adequate human resources to ensure that the mission is realised by 2010. Recognising this gap, the NVA is organising brainstorming sessions with stakeholders in the next few months to help refine its vision and mission and identify ways to strengthen the movement. Currently, the GGA is providing a platform for sharing of knowledge and experiences, supporting in capacity building and is promoting the development of new uses of ICT for poverty reduction. Though the GGA is organising trainings for the managers of CSC, it does not have an explicit objective to ensure that the CSC programme of the Government has a pro poor focus and so leads to social change. This could be a new direction to be considered and may help the scale up as an all India initiative in an effective way.



**Cross Program Issues:**

Detailed assessment of the six programs contained in the full report highlights their substantial achievements but also several foundation level issues.

- Both the program review and the management review identified significant human resource issues at the foundation level as regards staff development, remuneration and retention. In response to the recommendations, the Foundation has taken several steps, including, longer term tenures to program leaders, incentives to encourage staff to attend conferences/ training programs and generally to sharpen their skills and link rewards more explicitly to performance.
- There is overlap in the scope of programs and sometimes competition among them. While some overlap is unavoidable and competition can be healthy, there is also considerable potential to increase coordination and synergy among various projects so that MSSRF's contribution as a whole is larger than the sum of its parts, e.g., among the programs of ecotechnology, biodiversity and food security. Examples of positive synergy across programs were also notable, e.g., between biodiversity, coastal area management, biotechnology and information technology. All the programs in turn are contributing to and are benefiting from the program on information technology. This synergy is adding considerable value.
- Overall program strategies are in need of development and sharpening. They are stronger in some cases than others with projects driving program prioritization.
- Monitoring and Evaluation systems are weak in all programs. Stronger monitoring, evaluation and reporting systems need to be in place at the level of the Foundation as a whole, for several reasons. The programs are intended to be pilots to demonstrate scope for scaling up or replication. This calls for systematic design, monitoring and evaluation to learn lessons.
- The Foundation derives nearly two thirds of its funding from short term project financing. Such a fund raising strategy has enabled the Foundation to assure relevance of the Foundation's work to its donors and to ultimate clients. Yet, it now has a sufficient record of achievements, reported in the full report, to strive for larger and lasting impacts beyond the presence of Dr. Swaminathan. Those impacts will likely be different than those achieved so far due in part to Dr. Swaminathan's stature. This calls for excellence in program choice, conception and implementation to derive lessons. It also calls for a better balance between project financing and long term financing.
- The Foundation needs an effective communications strategy. Its achievements remain largely unknown. The work of the Foundation as a whole has not been reviewed periodically, nor articulated or communicated regularly to its diverse supporters. Such a process needs to be instituted.

## Overall Conclusions, Implication and Lessons of the Program Review

MSSRF has a substantial record of achievement and is at a cross road. Depending on the road it takes, it can either coast along, decline overtime or soar to higher heights. There is considerable potential for MSSRF to achieve scaled up and sustainable impacts even post Dr. Swaminathan, if MSSRF effectively prioritises, consolidates and makes transitions to be at the cutting edge of problem solving in a variety of ways. There is a widely shared view externally and internally among those the review team consulted that such a transition is needed, movement forward should be possible quickly and should be based on strong internal and external consensus. Internally it will call for not letting interests of individuals and programs come in the way of a collective good. The review cannot provide a “roadmap” Dr. Swaminathan solicited in view of the very short time in which it was conducted. But it attempts to provide a general direction in which the Foundation should move and the steps it should start taking.

MSSRF has had a large and a growing program. Based on the evaluation framework presented in section on Methodology, and the evidence on MSSRF’s overall program can be rated as follows. These ratings should be viewed in conjunction with the discussion of individual programs in the preceding section, which contained issues and ideas for the future. The Program is:

- **High on relevance** (Its mission is central to India’s broad-based growth and of considerable local, national and international interest).
- **High on efficacy or effectiveness** (it can boast of a large number and variety of outputs in a wide range of areas over the last 20 years),
- **High on efficiency** (its outputs and impacts are strong *in relation to the* resources used),
- **High on impacts** in specific areas of national policies, legislation, national resource allocation decisions (100,000 Common Services Centres provided for in Planned Allocations), and national thinking and approaches (Food and Nutrition Security, an independent committee to assess the role of biotechnology innovations on a case by case basis, Every Child a Scientist idea leading to substantial investment of natural sciences and math in schools throughout the country).
- **Significant on impacts in some specific international strategies**, (e.g. information technology, a number of difficult to determine and measure spillovers, (e.g. adoption of Village Knowledge Centre idea in several developing countries), networks (An as yet weak International Coastal Area Management Network), and approaches (Food Security Mapping).
- **Significant in impacts on specific government and donor groups** with which it has worked (DBT, SDC, IDRC, WFP, and Microsoft—the latter four for putting them on the map in the areas they supported, giving the programs high visibility and strategic influence in India and elsewhere). In addition it has had a highly productive collaboration with the Tatas.
- **Modest to Substantial** in impacts on the lives of specific communities of poor, women and natural resource management in which it has undertaken programs (e.g. Through the JRD Tata funded Ecotechnology Centre and Tata Funded National Virtual Academy based on evaluations they have done).
- **Modest in Sustainability of the Impacts** in each of these areas.

- **Modest on Scaling Up effects** of individual pilot programs on other stakeholders (except perhaps in Common Services, Every Child a Scientist).
- **Modest on the sustainability of the MSSRF program as a whole.**
- **Modest on the scaling up of MSSRF Program.**

These achievements have been possible due to the synergy between the program's substantive content, MSSRF's dedicated staff (despite lack of tenures and competitive salaries) and Professor Swaminathan's considerable national and international reputation, although some of the large high profile impacts on policy (Farmers' rights and biodiversity) and government allocations (e.g. 100,000 Village Centres) are the result of Dr. Swaminathan's stature, credibility and influence. There is consensus among the people the reviewers consulted that the program is not only worth nurturing but worth taking to a higher level. Not only is the MSSRF mission important and its approach of combining science with society unique, it will also be a way of assuring Professor Swaminathan's considerable national and international legacy provided the weaknesses discussed below are addressed. This review presents areas where the program and the related issues need to be strengthened first before it can be sustained at the current level, and certainly before it can be taken to a higher level.

### **Programmatic, Management, Governance and Financing Challenges Going Forward**

In any organisation, governance, management, finance and operational content tend to be interlinked<sup>6</sup>. **MSSRF is no exception.** Although it has been fortunate to have been driven by India's needs rather than being donor driven, the Program as a whole now faces a number of **inter-acting strategic challenges of balance.** These are discussed in this section. Program specific suggestions contained in the full report on the web are not repeated here but should be considered in tandem with the overarching issues.

- **Between breadth and focus: (1) in Each Program and (2) Among Programs:** Currently there is considerable overlap and duplication, some major gaps (e.g. between the knowledge being generated about farmer needs and the MSSRF's own programs), a silo mentality among programs, and not enough synergy even when different programs address similar issues, e.g., improvement in livelihoods and security through community mobilisation, e.g. what kinds of community mobilisation works under what kinds of conditions. This leads to underutilisation of the huge knowledge that exists internally and is mobilised from partners. Yet there already are some examples of good practice, and Pan MSSRF achievements, well before the idea of Pan MSSRF programs was formally introduced, (e.g. information technology and biodiversity, leading to coastal areas and biotechnology work) upon which MSSRF can build. Yet the Pan MSSRF programs are not working well because currently incentives to cooperate among programs are lacking. There is too much rush to raise project funds and to help implement activities, issues discussed below.
- **Between Research and Grass Root Action/Development:** Even though the research it has done on Coastal resources and Biotechnology is well respected (see the full report on programs), reviewers were left wanting more *applied research* on the core issues of sustainable livelihoods, gender participation and agriculture and rural development. This could be either M and E based evidence from MSSRF programs, or analysis of strategic policy or institutional issues which seem to either facilitate or hinder large scale systemic impacts on agriculture and rural development of

6 World Bank (2004) Addressing the Challenges of Globalization: An Independent Evaluation of the World Bank's Approach to Global Programs. Washington, DC: World Bank (2003) The CGIAR at 31: An Independent Meta-Evaluation of the Consultative Group on International Agricultural Research. Washington, DC:

interventions such as those being tried by MSSRF. Currently there is dearth of well documented studies in MSSRF that look at what works and why from the perspective of the broad picture. Because this is also the case more generally in the area of agriculture and rural development, MSSRF has considerable opportunity to contribute to throwing light on these issues based on its experience for the benefit of policy and decision makers. For example, debates on vertically integrated commodity based programmes and (horizontal) integrated agricultural or/ and agriculture and rural development programs remain simply debates, without a solid research base to guide policy and decision makers on what works, what does not, what are the processes that need to be in place step by step, why and with what impacts<sup>7</sup>. What can programs such as the ones on *Kalajira* Rice, millets or Jeypore contribute to these debates given that they have faced scaling up challenges? The same applies in the case of the roles of public and private sectors. While there is much enthusiasm for the role of the supermarkets, and disenchantment with the role even of targeted public interventions in the areas of food and nutrition, there is relatively little in the Swaminathan Foundation's work on what could be made to work cost effectively on a large scale, e.g., to translate MSSRF work on food and child nutrition. Within MSSRF, there is currently plenty of action oriented development activity, networking and dissemination of "how to" ideas, but it is largely through learning by doing by MSSRF staff, (e.g. in the area of Village Knowledge Centres, or on community banking, but little on what works and what needs more tinkering, refining). At the same time VKC case studies which the reviewer read indicate farmers stressing they have no access to knowledge on improved practices from the traditional extension system, villagers are demanding that VKCs provide information on the issues they need to address in farming and benefit from ---once they have access to it. There are no scientifically conducted pilots in MSSRF which would be expected from a research organisation such as MSSRF.

International development experience suggests, and MSSRF programs seem to support, that neither participatory approaches nor management of natural resources are easy to scale up on a sustained basis, although there are some exceptions discussed later. It is even more difficult to achieve scaling up of participatory approaches and natural resource management concurrently, and still more difficult to do it, while ensuring gender and class equity. The challenge for MSSRF through action research of Ecotechnology and NVA Centres is to defy these odds. The reviewers were unable (due to lack of time and their own skills to determine) for example, which of the numerous NRM technologies the Ecotechnology centre is promoting that are scalable on the supply side, and which are scalable on the demand side and how do the two meet?

From this perspective, piloting and experimenting in the six program areas and several other special projects each with a vast array of projects has had strengths as well weaknesses. On the positive side, the totality of the program has shown that each project and program has associated with it:

- (a) A theory of change or the logic by which change occurs, and
- (b) A theory of scaling up—steps, specific kinds of resources, and stakeholders among others needed to achieve scaling up.

Theory of change and a theory of scaling up each poses different but related challenges. Each needs to be treated explicitly. Far too often both are implicit in MSSRF programs but could be made more explicit in each program and across programs providing a rich field for a joint bio-physical social science research.

- **Within Research** the balance of applied research is biophysical. There is not enough hard core social science research (Food Security Mapping was a good example of the latter but based mainly

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7 Uma Lele, *Design of Rural Development, Lessons from Africa*, Johns Hopkins University Press, Baltimore, Md, 1976.

on secondary data and conferences). There is insufficient use of the universally accepted design principles of time series and/or cross section studies, or the critical examination at the design stage of the possible constraints to the spread of technologies leading to partnership strategies, subsequent monitoring and evaluations that meets analytical standards to learn systematic lessons about processes of change, implications for training, human and institutional capacity building and scaling up.

- Even among MSSRF's own action programs, there is little systematic analysis of the roles of policies, class, caste and gender dimensions of social change that are dynamically affecting individual, household and community behaviour on adoption of practices or in the burgeoning demand for knowledge the review team noted during their field visits among poor women from the so-called "backward" classes. This enthusiasm tends to be infectious to visitors. But then sceptics, interested in scaling up of MSSRF work, as indeed of all such evidence based only on selective field visits, also note that what works in Puduchery is unlikely to work in poorer, less urbanised parts, even of Tamil Nadu and Maharashtra, and perhaps even less in Bihar. This is a hypothesis well worth testing for MSSRF through pilots using controlled experiments (see the section on M and E). It could ask: what factors do critically determine distribution of impacts, even within pilot schemes, and what are their lessons for sustainability and scaling up? Without systematic work of this nature Ecotechnology and NVA will not be able to provide informed guidance to policy makers and implementers of agricultural and rural development interventions. At the same time it is also clear that the use of multi-media makes the VKCs to be a good pilot market place for the supply of and the demand for information –leading to the possibility of developing **A Poor People's Google**.
- This observation does not mean great deal of information is not being collected. On the contrary only some of the data are analysed given the implementation pressures to keep programs going. (E.g.in the innovative village knowledge centre program). Furthermore, policy and institutional concerns are not being addressed, nor in the way the data seem to be collected. Knowledge gets disseminated through visitors, workshops, conferences and networking, and high level influences typically occur due to Dr. Swaminathan's personal credibility and stature.
- **Between a short term project by project financing and a long term corpus and endowment funding:** Excessive dependence on project funding leads to short term thinking, not enough strategic focus, such as that above, in areas in which MSSRF potentially has considerable comparative advantage. Having demonstrated what it can do, MSSRF should develop long term strategies for some core priority programs and present a funding plan for core support for MSSRF as a whole, to a group of key international and national donors, rather than fund raising for individual projects, or even in support of individual programs. As evaluations of the Ecotechnology and NVA centres have demonstrated, individual programs do not benefit enough from lessons from other programs, nor can evaluations explore scope for synergy as the donors can if they were to support MSSRF as a whole from the perspectives of its declared mission.
- **Between the growth of programs and the administrative and management leadership and support to programs:** Raising core funding will almost certainly require modernising the Foundation management prior to a fund raising effort. Existing program management is under great stress. As the management review has already noted there has been, until the review started, insufficient attention upstream to the systems of personnel recruitment, retention, performance assessment, incentives, skill mix, financial and administrative processes , procedures and support to carry the scientific programs forward expeditiously , or to report to donors in a systematic and timely fashion the progress of the work achieved. As in the case of project data above, the amount of financial data MSSRF has is considerable. Indeed as the donors indicated and the management review reported to this team, it suggests exceptionally high degree of financial accountability, but exercised through very limited amount of delegation to programs on expenditure levels leading

to considerable administrative inefficiencies in other respects. Moreover, the financial data are not organised or maintained to communicate to the current or future donors how finances are being or will be deployed strategically for program implementation. Annual reports to the board, for example, have not contained financial data. A larger more ambitious program will require these issues addressed for this level of programming.

- **Between charismatic visionary personalities based Foundation and a professionally managed foundation:** The current state of affairs is understandable because the Foundation has grown rapidly and with success has outgrown the personal styles of management of its founder and the family. Also not surprisingly there is a gap between the stature of Professor Swaminathan and program directors, notwithstanding their huge dedication and commitment to the mission of the Foundation and to Dr. Swaminathan, their considerable achievements and recognition among their peers.
- **The most urgent challenges are at the level of the Executive Director.** Ideally he/she should take on board and translate the broad vision laid out by the chairman and the board, be delegated the necessary authority and responsibility, and should be held responsible and accountable to establish priorities among competing programs. The Executive Director should have the capacity to lead internally and externally, be recognised both by the chair and the program directors as a leader and be in a position to negotiate with donors and partners. This appears not to have been the case under the various previous directors. Professor Swaminathan's long absences, meant to create space for MSSRF to manage itself, combined with the family health issues of the most recent Executive Director and the reported lack of feedback to the Ex. Director as regards expectations of his performance and areas of failure, have proven to lead to some inadvertent misunderstandings, gaps in leadership and management. There is need for self assessment within MSSRF to assess what steps are needed to correct past weaknesses before a new director is recruited, since his or her success would be crucial to the performance of MSSRF.
- **There are also issues of long term governance, with respect to the role of and transition from Professor Swaminathan as chair of the board.** He, the family and the board will need to determine succession issues either involving a family member as the trust calls for, or to an external leader. Other corporations led by visionaries have transferred power to others e.g. Microsoft, Infosys. Donors, stakeholders, external and internal supporters of Dr. Swaminathan, MSSRF staff and Dr. Swaminathan himself would like to see these issues resolved, as they have implications for the Foundation's long term growth and sustainability.
- **Networking vs. Partnering for Joint Action:** MSSRF has had a large network of organisations and individuals from which it has raised funds, in some cases on a programmatic basis, e.g. Ecotechnologies and NVA. But programs lack long term programmatic strategies, a related fund raising strategy, and a long term partnership strategy with key stakeholders beyond specific projects. There is also an absence of a systematic communication strategy. Consultations with partners have been ad hoc, based on ideas and projects driven by Professor Swaminathan's vision and contacts and programs have grown organically. Program leaders have established their professional and managerial credentials in their respective areas, often, even without sufficient overall leadership and management at the level of the Executive Director. They need to be delegated more responsibility and authority for fund raising, once the overall directions of MSSRF including priorities and fund raising strategies are determined and agreed upon.
- **Between Being a Foundation with a Local and State Presence to One of National and International Presence—**The Foundation is quite effective at the local level in Tamil Nadu, and at the national and international levels but does not have sufficient partnerships at the level of the states. The growth of programs in other states has taken place organically without an evident strategy of the relationship of those special projects/ programs with the larger MSSRF

based programs. The reviewers were not able to assess MSSRF's relationships with other state governments. Yet the team noted a sense of mission drift, lack of coherence and unclear rules with regard to decentralisation to resource centres. Going forward whether and how MSSRF expands to other states, and if so, for which programs, and on what scale, should ideally be taken in consultation with the relevant MSSRF program directors, state governments, and in the case of multi-state programs perhaps even involving central government. This will ensure that the states anchor MSSRF programs, particularly those which have huge public policy implications, or require grass root mobilisation, while enabling the foundation the necessary space to operate independently of state politics and changes in parties.

### **Remaining Programmatically Relevant for the Future**

There are numerous alternative ways to organise MSSRF programs to address its mission. The current programs and regional centres is one way. Critical mass is especially important to achieving economies of scale in research and its support (e.g., design and maintenance of meta-data repositories, web sites, etc., electronic libraries, GIS support, software access, etc.) and collaborative synergies of the type hopefully stimulated by the management review and this program review on which to build.

An alternative way of organising programs is suggested below:

MSSRF is aiming to achieve **Sustainable Improvement in Livelihoods of the Poor through:**

- (i) Sustainable Food and Agricultural Productivity Increases by, of and for the poor:** Several programs are trying to achieve this through action programs at the grass root level. (Most notably Ecotechnology but also in Biodiversity, in Coastal Area management and VKCs with regard to fisheries and small amount of the food security work (e.g. community seed banks), as well as special project in Maharashtra on soil and water management). Ecotechnology and Biodiversity Programs seem to be doing well on building capacity of the communities, Coastal Area Management and VKCs on outreach to the communities. Bringing such programs under a single umbrella would provide greater cross learning, cohesion and synergy across programs.
- (ii) Conservation of Natural Resources** on which the rural poor directly or indirectly depend for productivity growth, and environmental services. MSSRF's work here seems to have two components:
- a. Upstream Lab Component at the Scientific Level**—via applied research most notably in Biotechnology (screening for genetic characteristics in rice and other crops, breeding using biodiversity) and Ecotechnology (pesticides, bio-fertilizers)
  - b. Upstream Land, Forestry, Fisheries and Water Based** coastal resource management, (increasingly it should be in the area of adaptation to climate change and disaster response), this program has a huge public policy and public institutional component due to common pool and public resources.
  - c. Downstream Work at the Grass-Root level** working with communities and individuals on their small scale private lands and off farm on agricultural and non-agricultural enterprises. From a research perspective Biotechnology, and Coastal Systems Management and Ecotechnology have had external scientific assessments from and among scientific/ professionals reviewing these programs. To the extent that they are research programs, it is unclear how scalable these programs are. .
  - d.** Even recognising the risk, there is scope to enhance the programs. Many have considered

MSSRF's Biotechnology work as a flagship program even though it has its detractors. MSSRF experimentation in the area of Coastal Management is recognised internationally and also demonstrates that the management of national, regional and global commons such as biodiversity, forests, fisheries and water makes developing appropriate models and working closely with the relevant public sector institutions essential to scale up. It is also a much neglected area in which MSSRF has established a niche. There are concrete steps MSSRF can now take to make a convincing case to the central government and donors (e.g. Japan) that it is a strong candidate for establishing **Centres of Excellence in Coastal Area Management and Biotechnology**. **In the case of Coastal Areas Management, much as in the case of Biotechnology, absence of critical minimum mass or a core team of researchers may well be an issue.**

**e. Divesting programs** which are unviable is also important. The viability of its gene bank have been questioned by many, except perhaps as a partner with and funded by the Government of India's National Gene Bank. MSSRF could still be the depository of the collection on behalf of ICAR, and as an active user of the Gene Bank. There certainly would be other candidates of a similar nature.

**I. Off Farm Activities:** Agriculture is becoming an increasingly part time activity in India, albeit to a different degree. A distinguishing feature of MSSRF is that it is actively promoting nonfarm activities, e.g. information, education and training. It behoves MSSRF to have a long term program to systematically collect its learning through the VKC/NVA program as well as the work underway in Ecotechnology on these rural urban linkages.

**II. At the Grassroots Level the Eco-technology Centre (working jointly with all others including particularly the VKCs)** needs to examine critically which of its NRM programs are potentially sustainable and scalable, through a combination of methods often used for strategic analysis, e.g., PEST, SWOT analysis or Michael Porter's five forces of competition, some of which MSSRF already uses<sup>8</sup>. These could be refined to ensure some of MSSRF's implicit assumptions with regard to natural resource management become explicit. Alternative models of production and adoption of these technologies, incentives, demand, profitability and markets for environmental services are all new and growing fields. MSSRF should also place high priority on the sustainability and scalability of approaches (e.g. biodiversity conservation using promotion of specific crops). This will require a different skill mix than MSSRF perhaps has. This review did not have time to look into the skill mix in relation to programs, both of which are, and should be, moving targets. Bringing programs with similar objectives together would provide economies of scale and scope, improve standards, cross learning etc. A menu of options based on experience in other parts of the world should become part of MSSRF staff responsibility and training particularly under the program of climate change and adaptation (see below).

**III. Institutional and Policy Innovations** that enhance the quality of life for poor and marginalised rural populations—MSSRF is influencing food and nutrition policy, legislation and showing how the policies and legislations can be implemented. How sustainable this area of activity is beyond the life of Professor Swaminathan is unclear unless a vigorous program of food, nutrition and its links to production, consumption and livelihoods is developed at the grassroots level with a strong link to national or state policies. This will call for strong social, including economic and other disciplinary, input. MSSRF should create a social science group from among the current staff who undertake some of this work (e.g. on food security and livelihoods). They should provide cross support to all other programs. This means more matrix management in place of the current silos. Establishing

8 **Michael E. Porter**, *Competitive Strategy: Techniques for Analyzing Industries and Competitors*, The Free press, New York, N.Y. 1980



partnerships with a number of Indian universities will both encourage more analysis and improve relevance of university teaching and research to India's development challenges.

**IV. Information and Communication Technology: An Umbrella Program—Google for the Poor--** for MSSRF's entire program of participatory and resource management of food, agriculture, natural resources, livelihoods. As in the case of Social Science Research, this program should become a cross cutting, cross support and a demand driven program by communities with strong links between the social scientists to undertake effective monitoring and evaluation and policy research related to IT. It is evident from some of the case studies of the VKC program, villages are making huge demands for knowledge and indicating areas in which either government services do not exist or are dysfunctional, e.g., agricultural extension. Being at the cutting edge of Biology and Informatics, the MSSRF program, working jointly with all other programs, can greatly increase our understanding of the process for accelerating development which is demand led by the poor.

MSSRF's current research and development focus has also demonstrated successfully that scaling up demand led development requires more than just identifying and emphasising these large research and development themes and systematically pursuing them. It requires

- Identifying and enforcing strict boundaries on activities
- Avoiding duplication of efforts which are more effectively being performed within MSSRF or elsewhere,
- Crowding out new areas of research and outreach capacity by excessive focus on action and not enough on research.

Dr. Swaminathan has provided both the antenna and the space necessary for new ideas. This process will have to be institutionalised by younger action researchers, attuned to the needs of the poor, gradually defining the future agenda.

## Recommendations

### *Programs*

- **Create MSSRF Level Internal Taskforces of All Program Directors to Develop** a long term program strategy based on "lessons learnt".
- **Establish clear priorities within and among programs** to undertake follow up activities.
- **Select examples of technological innovation, institutional innovation,** and agricultural and rural development policy issues that can enhance MSSRF's scientific work and contribution, define and pursue interdisciplinary approaches to work to achieve this goal.
- **Identify who needs to do what to achieve** results, explore implications for intra-MSSRF networks
- **Develop overall partnership and communication strategies** internally first, consistent with an over arching programmatic strategy with a view to establishing *platforms of internal and external stakeholders*
- **Identify appropriate MSSRF's Indian and Donor Partners** who can participate in the design and implementation and strengthen MSSRF's messages, programs and strategic planning
- **Develop M and E** as integral part of the strategies , design monitoring and evaluations selectively using standard methods, e.g., experimentation using randomised controlled trials or the use of careful longitudinal tracking of households, individuals and communities in order to be able to

control for confounding variables

***Governance:***

***Establish Performance Standards and Indicators***

***Role of the Chair***

- Give high priority to the selection of the new executive director.
- Address issues of succession and of the role the future chairman and the board with regard to the future strategic directions and funding strategy of MSSRF.

***Role of the Board***

- Oversee reform of the organisational, management, finance and staffing issues identified by the program and management reviews on a regular basis.

***Organisation, Management and Finance***

- Develop reform proposals for administration, finance, management, and reporting systems ( along the lines of the recommendations of the management and program reviews)
- Standardise monitoring and reporting of expenditures to ensure timely progress reports to donors.

***Organisation of Scientific Staff***

- Develop a long term strategic plan for the Foundation
- Ensure form follows function: To mobilize the best skill mix and cross program experience, build flexible task forces of relevant staff from all program areas to break silos built around current programs.
- Develop a Foundation-wide strategy for determining presence in states outside Tamil Nadu as part of the program and funding strategies.

***Staffing***

- **Develop a human resource strategy- recruitment, skill mix, long term contracts** to at least 10 and perhaps 20 percent of the staff
- Strengthen training, and performance contracts among other issues.

***International Collaborations***

- **Develop A Few Long Term Working Collaborative Links with External Institutions** rather than just memoranda of understanding (e.g. Cornell University. Dr. Swaminathan has a long connection, Cornell has a strong science base and excellent research underway in a variety of areas including on the combined issues of poverty and management of natural resources. Cornell has received the largest foreign grant from among its alumni, from the Tatas to train Indian students and conduct research in the areas of food, nutrition and agriculture. Given the support of the Tatas to MSSRF and its great tradition of supporting some outstanding institutions led by individuals in India, a three way tie between MSSRF, Cornell and Tatas is timely. **The Institute of Development Studies** has excelled in its work on poverty and has recently received a major grant from Bill and Melinda Gates Foundation for improving Monitoring, Evaluation and Capacity Building, areas in which a link between MSSRF and IDS would be a win win. Both these external institutions are strong in the areas of household nutrition and livelihood security) with a long history of presence in India for mutually agreed programs of education, training and collaborative research;
- **Initiate mentoring, continuing education, training and evaluation** to set and enforce

individual and collective performance standards.

- **Develop modern Management Information Systems** for standardised monitoring of program activities and expenditure in an effort to improve accountability with the help of the System.

*Financing*

- **Adopt a Resource Mobilisation Strategy (with a concrete Programmatic Strategy, Governance and Management Reforms already in place and those that have been achieved).**
- **Increase Corpus and Endowments** from a diverse set of public, private and external sources so that the share of project funding in total annual expenditures declines to 30 to 40 percent of the total in five years and MSSRF gets launched on a long term path of sustainability and growth.

## **Actions Taken and Way Forward**

The Trustees, Staff and Scholars of the Foundation place on record the tremendous contribution made by Dr. Uma Lele and Ms. Kavita Gandhi in conducting an exhaustive review and suggesting several steps to ensure that MSSRF continues to work and contribute to sustainable agriculture and rural development rooted in the principles of equity and ethics. We are truly overwhelmed by their effort to capture the diverse activities being carried out by the staff and scholars of the Foundation in such a short time period. With completion of 20 years of operation of MSSRF, this review provided MSSRF as a whole an opportunity to look back and think ahead to make the contribution of MSSRF truly meaningful, contemporary and relevant to the present and future needs of the communities we are working with. This review also coincided with a Management Review conducted by M/S Krysalis for making MSSRF adopting modern management strategies for programme implementation. The trustees and the staff of MSSRF took serious note of the suggestions made by the two reviews and had several rounds of internal discussion to take corrective steps where action is required, strengthen the areas where new initiatives are needed, and consolidate the progress achieved during the last 20 years. .

After receiving the report of the review team programme area reviews were carried out during March 2009. These discussions centered on a critical analysis of the observations made in the review to translate the suggestions into actionable work plans with defined short term and long term objectives and strategies. Subsequently, a two day meeting was organized during April 1-2, 2009 to discuss in detail the programme area linkages and new initiatives. The Trustees and the Directors of MSSRF participated in this discussion in which Dr. Uma Lele, Ms. Kavita Gandhi and Mr. Venugopal were also present. To inform the senior staff members of the Foundation of the results of the review and the way forward, a two day workshop was organized for the staff council members (staff council is represented by about 50 senior programme and administrative staff of the Foundation). It was facilitated by Ms. Kavita Gandhi. Subsequently issues of interprogramme linkages, communication strategies, monitoring and evaluation methodologies and long term sustainability are being discussed and are being prioritized in the meetings of the Council of Directors as well as the Board of Trustees.

Several new initiatives have been taken based on the recommendations of the review team. Programme Advisory Committees have been formed for major thematic areas – represented by experts in the field as well as representatives of the donor agencies with a view to review, monitor and guide the activities of the respective groups. In addition, consultative groups have been formed at the Foundation level representing relevant programme areas on topical issues to identify priority areas of intervention. The following sections highlight the action plan for each programme area based on the review report and recommendations.

## **Action taken by the Board of Trustees on the Recommendations of the Programme Review**

### **Already Implemented**

- Dr.Ajay Parida has been appointed as the Executive Director (ED) w.e.f. March 1, 2009
- Council of Directors has been made as apex body for running the Foundation consisting of the Programme area directors and the Registrar. While each of the Directors & the Registrar shall report to the ED, the ED in turn is responsible to the Council of Directors (COD) as a collective.
- The Board of Trustees (BoT) to meet every quarter - on pre-fixed dates.
- The Annual Report has been published with Financial Statements.
- COD will meet at least twice a quarter
- Salary revision has been implemented.
- Salaries of non core staff to be primarily funded from project funding with a provision of support for six months as bridge period.
- A performance appraisal and reward system has been put in place and will be implemented for 2009-2010.
- Process of Staff categorization into core and project is underway to ensure that a certain number (say 30%) are declared as core to be funded from Foundation funds

### **The following are being implementation**

- Allocated a budget for restructuring the accounting system and software.
- Start the process of Annual revenue and expenses budgeting
- Accounting and MIS to become on-line for most key functions and programs.
- The BoT should resolve to develop a strategy for enhancing the corpus to Rs 100 crore by 2011
- The BoT should resolve to harmonise the Programs and ensure that both Science continues to get primacy and Development oriented research gets appropriate weightage in MSSRF.
- The BoT should put the CoD in charge of with implementing the main recommendations on programmatic restructuring that may be approved by the BoT
- Governance and management review to be carried out every three to five years
- Carry out an annual review of each program with a committee of external peers and present its highlights to the BoT Program Committee
- HRD review to be carried out on an annual basis in the initial years and then once in five years.
- Support Service review should be carried out once in five years and recommendations acted on immediately.
- Overall program review to be carried out once in five years

## **Coastal Systems Research**

The programme review indicated that linking coastal wetland programme with the management of other coastal resources such as water and fisheries will ensure MSSRF's place as a Centre of Excellence for Coastal Resources Management Research Centre. The review also suggested that such an integrated approach is urgently needed in the context of climate change and India's repeated exposure to natural disasters. With this background, consultations were held with the staff of the Programme Area and a conceptual framework for Integrated Coastal Resources Research and Management Centre was prepared.

Meanwhile, a Letter of Intent was submitted for Establishment of an "Integrated Coastal Resources Research and Management Centre" for anticipatory and participatory research to meet the challenges of sea level rise under Specialized Centres in Biotechnology Innovation. This proposal is a PAN MSSRF proposal. Proposed activities under this centre will cover research and extension activities relating to Biodiversity (such as halophytes diversity), Biotechnology (such as biosaline agriculture) and Coastal systems Research (like integrated mangrove fishery farming system).

Apart from mangrove wetland research and management, concentrating on identification of new sources of crops from halophytes for saline affected areas, techniques of cultivating these crops using seawater for irrigation (biosaline agriculture) and integrated mangrove and fishery farming system, provide opportunities for both livelihood enhancement and greening of the coastal areas. Results of these activities will help in enhancing adaptive capacity of coastal communities to meet the challenges posed by rise in the sea level due to climate change.

## **Biodiversity**

The biodiversity group realizes that the initial vision of creating economic benefits through on-farm or non-farm livelihood opportunities still remains a distant goal for the programme. The team also recognizes the importance of increasing the pace of work on assisting local biodiversity knowledge holders to access economic benefits from the National Gene and Biodiversity Funds provided under the Biodiversity Act-2002 and Protection of Plant Varieties and Farmers' Rights Act-2001 (PPVFRA) in order to help conservation and arrest the TK erosion.

The group unanimously agreed to address the major suggestions made in the report such as (i) Need of innovative viable economic models to demonstrate Biodiversity conservation as being essential for sustainable livelihoods; (ii) Adoption of diverse pathways to explore and to demonstrate economic viability in conservation efforts; (iii) Identification of cases of Access and Benefit Sharing practices arising out of biodiversity conservation to demonstrate practical application in the field and to monitor their outcomes, based on the PPVFRA Act 2001 and Biodiversity Act 2002; (iv) Developing evidence as regards the extent and nature of synergy of biodiversity with Biotechnology, Food Security and Ecotechnology, ICT and (v) Need of an independent monitoring and evaluation system.

The group has identified a strategic framework for the programme to address the concerns and suggestions raised by the reviewers, with three focal pillars – Community Agro-biodiversity Conservation and Enhancement, Sustainable Livelihoods and Food & Nutritional Security, and Education, Training and Capacity Building. In the light of the fact that Community Agro-biodiversity Centre has a large land holding, the programme should also have a fourth component on farm development. The focal component of biodiversity is agro-biodiversity particularly those neglected and under utilized crops and species of food and nutritional value. The rare, endemic and threatened plant species of medicinal and conservation value also will be taken into consideration.

Using this framework, the Biodiversity Programme developed location specific strategies and targets in three states- Wayanad in Kerala; Jeypore in Orissa and Kolli Hills in Tamil Nadu, according to the capacities and potentials of the programme, and taking into account the changing socio-economic conditions and the current and emerging needs of local communities who live in poverty. The MSSRF community gene bank will function as a common facility for collection, storage and exchange of seed materials identified from across the three states. Integrated interaction with tribal communities in these locations in the areas of conservation, cultivation, consumption and commerce will be a major goal to promote meaningful and symbiotic linkages between scientists and tribal families. Focused efforts will be made to establish synergy with the other programme areas such as Eco-technology, Biotechnology, Information Technology, and Food Security.

The program recognizes that effective monitoring and evaluation holds the key to successful project implementation. Clear responsibility for M and E is being assigned at every level to team members and is being made an integral part of assessment of the performance of each staff member in the context of their assigned duties. There should also be periodic independent evaluations of the impact of the work using well-defined criteria.

## **Biotechnology**

Based on the recommendations and discussions the following areas have been identified as the core programmes for the Biotechnology Group.

### ***1. Resource Centre for Genes for a Warming India***

- **Novel genes/promoters/transcription factors to address abiotic stress:** For this we have selected the mangrove species *Avicennia marina*, an associate species *Porteresia coarctata*, a wild relative of cultivated rice plant growing in the mangrove locations as well as *Prosopis juliflora* as donor plants for identification and characterization of novel genetic combinations for abiotic stress.
- **Developing Transgenic Systems:** Transfer of these genes to a few important crops species with an objective of assessing their performance in field conditions as well as developing location specific crop varieties. The target crops are local indica rice varieties, oil seed crops and select pulses.
- **Nutritional enhancement:** Screening varieties, land races and cultivars of rice for their iron content and using them for development of higher iron rich rice in suitable cultivars in the areas of prevalence of iron deficiency in the country using conventional breeding methods. Multi-location trials and assessment of nutritional qualities and bioavailability with respect to the physico-environmental parameters, and identification of potential varieties for cultivation.

### ***2. Resource Centre for National Lichen Gene Bank***

The research programme of lichen group will continue to focus on characterization of novel bioactive compounds, novel genes, establishment of lichen cultures of secondary compound rich lichen species. Based on the successfully standardized culture protocols for twenty five lichen species the program established to produce the bioactive secondary compounds *in vivo*, it plans to standardize cultures for another 100 compound rich lichen species in the next 5 years and proposes to isolate and clone genes for compound syntheses, symbiosis and abiotic stresses like dessication tolerance, heat tolerance etc.

There are plans to set up National Lichen Gene Bank of lichen species of Eastern & Western Ghats, Mangroves in the Southern Coast. It can serve as a Repository for Bioprospecting Scientists of India in future.

### ***3. Centre for Bioprospecting for Eastern Ghats***

The group proposes to select medicinal species from the Eastern Ghats and standardize tissue culture protocols and carry out Bioprospecting studies – Secondary metabolite characterization and isolation.

### ***4. Other Programmes***

**Bioenergy:** MSSRF will carry out multi-location trials of the select 10 accessions as part of the Bio fuel Mission Programme of DBT. MSSRF is also working on identifying genes responsible for high oil seed content that can be used in future to screen *J. curcas* germplasm accessions across India.

**Tissue Culture of RET species:** Based on the protocols established for several medicinal and mangrove species and plants to standardize protocols for about 15 RET species and will scale this up to become a mass production unit for select, elite planting materials.

**ECAS/DNA Clubs:** Nationally MSSRF is playing a pivotal role in leading the genetic literacy programmes conducted by DBT. MSSRF will take a lead role in generating awareness amongst Farmers, Panchayat Leaders, and School Students in both rural and urban areas.

### ***5. New Initiatives***

New project proposals have been initiated in the emerging areas of RNA interference, applications of Nanotechnology in Agriculture. RNAi will be a useful tool to quickly characterize and assess functions of unknown genes involved in abiotic stress tolerance from the many gene libraries. Nanotechnology in Agriculture will focus on novel agricultural and food security systems, cellular biology, environmental protections, disease treatment delivery methods etc. are a few areas we plan to focus.

**Policy Issues:** MSSRF will take further the lead role it has played in shaping Biotechnology policy in India. Through multi-stakeholder participation of scientists, media, farmers, activists, MSSRF will continue to be involved in Media workshops, Public Fora to disseminate and improve awareness on the emerging and biosafety aspects in Biotechnology. MSSRF is playing a key role in shaping the new Act, the NBRA (National Biotechnology Regulatory Authority) that will come into effect very shortly.

## **Ecotechnology**

The goal of the JRD Tata Ecotechnology Centre is to support research, development and diffusion of environmentally, socially and economically sustainable technologies. Thus, it serves as an incubator of eco-technologies, institutional innovations and ideas through development of scalable models for nurturing sustainable livelihoods in rural areas.

The reviewers have drawn on the Institutional Assessment and Review and materials submitted to them. Due to shortage of time they were not able to visit any of the field centers except the irrigation project (Manikollai lift irrigation group), which they have rated well. A majority of the observations of the review team are generic in nature and apply to all Programme Areas. *The responses to comments, which were meant for the Ecotech group, are addressed here and where relevant, responses to generic observations are provided*

The review credits the program for demystification and dissemination of a large number of eco-technologies leading to the creation of gainful environmentally sound employment opportunities for men and women; appropriate tools in place for a participatory approach in implementing; good



networking with other government departments by dovetailing various schemes in the ongoing work; and leveraging funds by enhancing endowment support from the Tata Trust and thro specific time bound projects. The program has also established many vibrant Grass Root Institutions and strong community leaders, both women and men, have emerged. They now serve as trainers for the various government departments at the district level and as good role models.

The areas identified for further strengthening include stability of the GRI's, marketing and developing a medium term strategy formulation capacity and a more system based approach to impact assessment. The grey areas are already being addressed since most of these were identified by the earlier reviewers. The responses to the observations and suggestions have been classified under different heads and discussed during the meeting, convened by the Chairman on March 23<sup>rd</sup>. The following are the major points agreed upon:

*Choice of technologies:* There seems to be broad range of technologies the Centre is working on and the suggestion is the choice it presents between vertical approaches to specific technologies in developing a value chain like Amul or the horizontal approaches to work with several technologies in a community or a geographical space and its implications. Within a biovillage framework (human centered developmental framework which helps in blending modern technologies with traditional wisdom to nurture sustainable livelihoods) both options will have to be kept open. Choice of technologies is based on the needs identified and it's potential contextually. Also, diffusion will depend on various factors and include the relevance; efficiency; policy support and linkages to markets. The program agrees that a SWOT be done carefully before interventions are decided upon.

*Community mobilization:* The centre is known for its twin approach in imparting technical skill and social skill development by the process it follows. The formation of grass root institutions is built into the framework of the BV delivery model. The Centre has done well in achieving empowerment by imparting skills and has entered into a partnership mode with organization like BASIX that have an edge to provide the other services needed. The two options of a more formal partnership using a long-term approach and building the in-house capacity are being considered. A decision will be reached after an in-house discussion is held as part of a strategic workshop.

*Choice of livelihood:* The Biovillage approach is about multiple choices, which will add value to their time, labor and resource. Based on the needs expressed the choices are made in relation to the resources available locally. Efforts are underway to strengthen the weak links along the value chain. Tracking household initiatives using GIS as a tool has now been initiated. Also, databases on the SHG's – profile of the people with whom the group works is in place. Impact studies have been initiated and will be strengthened.

*Scale and integration of technologies:* The work in the different sites has helped in attracting the government departments to work with the team for local interventions of the various schemes. Frequent sharing of learning and planning based on the local specific needs along with the stakeholders is part of the process. This mode of operation helps in the diffusion of interventions. Access to credit has vastly improved and newer concepts are being put in place as part of strengthening value chain. The Centre has moved into multi-centric larger themes, which provide an option to work in larger areas. For example, the watershed is not only testing the concept of converting it into bio-industrial site but works on a larger territory. This offers the scope to bring in greater integration of technologies to address the management of land/soil/water crop and livestock. The Logical Framework Analysis in places helps in the M&E, which can be strengthened further. Scale has different dimensions and this has been achieved to a certain extent, but this needs to be debated and developed further.

*The Way Forward Suggested:* Brainstorm to define more precisely the basic parameters towards attaining ecological security and livelihood security and develop a model for irrigated and rain fed areas. The watershed project need not be considered as another theme but can be considered under the biovillage theme. Linkages can be established with the National Rainfed Authority and Ministry of Rural Development for the Bharath Nirman Components and PURA. The climate change program can build a tie up with National Disaster Management and the studies on coping and adaptation work can be linked to this program. Structured training can be offered to the Panchayat Leaders in watersheds as defenders of ecological security with focus on sustainable agriculture and NRM based approaches. An external facilitated strategy workshop can be held to refine the path ahead.

## **Food Security**

During the discussion on findings of the Program Review committee and suggestions the following were listed as the areas of strength and focus for the program area:

- Documentation based on secondary and primary data (technical review reports) and dissemination of findings; Undertake evidence based research at the field level with proper baseline and evaluation for replication.
- Policy Advocacy: Develop draft Food Security Bill
- Promote decentralized community food security system involving the Panchayats; local grains like millets and tuber crops should be promoted.
- Gender Dimensions of Food Security (emphasis on pregnant women and 0-2 children)
- Mainstream nutrition in National Missions – NHM and NREGS; prepare proposal for pilot and seek support from NHM and MoRD.
- Capacity Building and Networking: Training and capacity building on community nutrition model, training for Panchayat representatives, GO and NGO functionaries on food and nutrition security.

The discussions called for strengthening the ongoing initiative in Vidarbha with following focus:

- Consolidating the VRC-VKC network
- Education Support for the children from farmer suicide affected families
- Training and capacity building of women farmers (*Mahila Kisan Sashaktikaran*)
- Study to understand and address wildlife conflict in agriculture
- Training for Young Farmers (*Yuva Kisans*)
- Support for Servicing the Coalition for Alleviating Agrarian Distress in Vidarbha

The last two components emerged from a multi-stakeholder meeting in Nagpur in early February. A database of all partners working in the region is to be prepared and they can as a group, make recommendations to the Government. A periodic newsletter can keep the coalition members abreast of initiatives in the region.

The study on technology delivery had brought out the collapse of the extension system and lack of investment in soil and water conservation; In Andhra, the village had been made the unit of assessment for crop insurance – this will be helpful. Recommendations from the Report when finalized can give useful policy feedback.

The ongoing work on millet promotion and value addition was discussed. In Tamil Nadu, while millet production is being practiced it cannot replace tapioca production as the income from the latter is more and it is also a carefree crop. In Orissa, the production is low, but dependence as a staple food is high.

Biodiversity Conservation and Food Security have clear overlaps. Community Food Security Systems should focus on enlarging the food basket by including crops like millets in Kolli Hills and Koraput and tuber crops in Wayanad. The Gene-Seed-Grain Bank continuum and nutrition gardens should be emphasized. Local biodiversity is a powerful means available for addressing hidden hunger.

There was discussion on renaming the programme area as 'Food and Nutrition Security', in view of substantial work being done on nutrition. The definition of Food Security subsumes nutrition security but is unfortunately not seen as such by many.

### ***Information, Education and Communication***

The Jamsetji Tata National Virtual Academy (NVA) mission is "To promote sustainable rural livelihoods through digital empowerment based on a pro-poor and pro-women orientation to technology choice and dissemination, and human resource development." The NVA programme is intended to bring together experts and grassroots level communities in two-way communication with the objective of making knowledge accessible to every home and hut.

Based on the Independent Programme Reviewers' suggestions and Tata Trust Programme Reviewers, NVA now operates through four divisions namely, Informatics (Research & Development) Division, Village Resource Centres (VRCs) and Village Knowledge Centres (VKCs), Training School and Outreach, Extension and Partnership. Monitoring and Evaluation system has been developed to streamline the activities of different arms of NVA. To address the issue of VRC financial sustainability, VRC sustainability fund has been created with the help of user fees and approaching the government projects.

Efforts are being made to document our decade long experience in the field of ICT-enabled development activities. A series of publications - Pictorial Toolkit on Setting up Community Based Village Knowledge Centre and Dissemination Services, Transformative Catalysts – Change Stories from Rural India on Impact on ICTs in villages, Role of Corporate Social Responsibility to set up VRCs and VKCs, Role of Member of Parliament to support VRCs and VKCs and How to do it- will be ready in October 2009.

Regional selection committees were formed for the selection of NVA Fellows segregated into three categories namely, Knowledge Workers, Social Workers and Traditional Knowledge and Innovative Practices. The training school has already initiated innovative capacity building programmes in different thematic areas. Training School is also developing database for NVA Fellows and Gyan Choupal Staff to cover all the aspects such as their expertise, expectations, etc. The training school will also be entering into MOU with different institutions regarding content generation and capacity building.

NVA concentrates on mobile applications based on current and future need based expansion. NVA is in the process of developing "Poor People's Google – Link Rural India" with the help of different partners. NVA is also in the process of developing web based Knowledge Management System to tell a 20 years story of MSSRF's work.

Based on the discussions, the following priority areas were identified:

- Prepare publication for use of Members of Parliament for allocation of funds under MPLAD programme.
- Prepare Publication for the use of industry through CII and other organizations for taking up VKCs under their Corporate Social Responsibility Programme.
- Take necessary steps for resource mobilization for different arms of NVA particularly Informatis (Research & Development) Division, JTTS and Outreach and Extension (Corporate Sectors, RUTAC, TIFAC, etc.).
- Share the need assessment of rural communities with the Government Departments and address the sustainable developmental issues in a scale-up manner.
- Develop five year strategic plan for different arms of NVA.
- Explore the possibility of entering MoU among JTTS and CSC, ITS, CIS, ISRO, etc.
- Classification of GGA partners (resource, content, capacity building, etc.)
- Develop resource materials to develop prototypes for replication of Public Good Model.
- Detailed study will be conducted for the concrete evidence on how many of them extensively using Government Entitlements based on Entitlement Pass Book / Database particularly how many of them avail those schemes.
- Develop concrete methodologies to address the issues of sustainability of VRCs and VKCs (both financial and social)

Looking beyond programme review NVA is developing a strategy for strengthening all the arms of NVA. The NVA will continue to strengthen the activities in three categories namely, Science and Technology (devise appropriate technology forecasting in relation to content, capacity building and connectivity), outreach, extension and partnership ('Bharat Jodo through ICT') and policy advocacy. NVA will also continue to focus on content and capacity building using different ICT and non-ICT tools for rural knowledge revolution.

## **Annexure 1**

### **Methodology**

There are few methodologies to evaluate organizational performance of a development organization with complex objectives. Following the experience of the World Bank evaluation of its Approach to Global Programs and the CGIAR, at a time when evaluation frameworks did not exist to assess organizational performance of partnership programs, the World Bank's Evaluation Department produced a very useful Source Book to assess Global Programmatic Partnerships<sup>1</sup>. While an excellent compendium of concepts, processes and standards, by necessity it is World Bank centric. There are no evaluation frameworks to evaluate the kinds of functions UN organizations perform, such as standard setting, generation of information and knowledge and the development and implementation of international agreements. Besides there are no standard good practice examples to obtain views of those members in the partnerships who have a limited voice. In the environmental field GEF evaluations have attempted to deal with some of the many challenges in the evaluation of implementation of environmental agreements, mostly via learning by doing.<sup>2</sup>

Evaluation frameworks for assessment of the growing number of civil society organizations, such as MSSRF are lacking altogether. Since they conduct advocacy, mobilize grassroots, attempt to influence public policy and institutions and engage in active knowledge sharing, their work calls for yet another set of criteria for evaluation which have not yet been developed. This evaluation therefore had to cobble together tools from various evaluation frameworks currently available.

#### **A Global Public Goods Framework**

Information and knowledge MSSRF generates is potentially an important Global Public Good. It is non-excludable, i.e., if disseminated widely it is accessible to all without exclusion. It is also non-rivalrous, i.e., the benefit of this work to any set of individuals or stakeholders does not come at the cost of any other. The term global (rather than international) public good is used intentionally in this case. The knowledge generated in developing countries is increasingly being applied, not just in aid programs in other developing countries, but in advanced countries. This is witnessed by the popularity of micro-credit, an approach, inspired by the Grameen Bank, which President and Mrs. Clinton embraced for the benefit of poor communities in the United States. The Grameen approach has acquired further currency in the United States since the global financial meltdown in September 2008, leading to Grameen type micro loans to poor

communities in many U.S. cities. Conditional Cash Transfers, an innovation developed in Mexico and Brazil, has similarly been adopted, not just in developing countries such as Indonesia, but by Mayor Michael Bloomberg in the New York City school system. As in the case of these programs the knowledge emanating from the MSSRF is generated from the bottom up, and it is already leading to innovative ideas being adopted in India and in other countries, e.g., in the areas of coastal area management, food security mapping and information technology.

Dr. M.S. Swaminathan's presence on the global stage in the areas of food and agriculture over nearly four decades has influenced the work of international institutions concerned with food, agriculture

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1 World Bank (2004), op.cit, World Bank, World Bank (2003), op.cit, World Bank,(2008) Sourcebook for Evaluating Global and Regional Programs: Indicating Principles and Standards, Independent Evaluation Group, the World Bank, Washington, D.C.

2 The GEF Monitoring and Evaluation Policy, Evaluation Document, #1, 2006

and the environment as well as their work having influenced the work of MSSRF. These two way global-local influences were highlighted by the donors who support MSSRF and are perhaps more noticeable in the case of MSSRF than would be typical of most small civil society organisations (CSO) in the developing world. They are captured in the evaluation framework shown in Figure 1.

The international development and aid architecture has also been under unusual stress for a well over a decade, and particularly since the global financial crisis. The G 20 meeting in London in April 2009 reflected the changing locus of voice, ideas and expertise for accelerating the process of international development through increased South South and South North exchanges, formal and informal, of experience and views. A review of the MSSRF work helps to derive lessons for the possible future roles and directions of MSSRF in such a changed global context.

## **Results Based Evaluation Framework**

A standard OECD/DAC results based framework defines the program logic that explains how the development objectives are expected to be achieved, including causal relationships and underlying assumptions (often implicit and sometimes explicit). Figure 2 shows the results chain, or the logical framework which is also often described as the theory of change. It is a very static framework. In reality programs tend to be dynamic and iterative. Learning from one stage to the next they either improve or die. Evaluations of monitoring and evaluations, largely internal carried out in international organizations indicate that despite considerable rhetoric, monitoring and evaluation has remained weak in most donors programs. While it might tell us what was achieved it can tell us little about why or how. Tacit knowledge and informal learning is important but few ways have been found to capture it from one program to another and it is not captured in traditional evaluation frameworks such as the OECD DAC frameworks.

## **Key Evaluation Criteria**

The key evaluation criteria used in the OECD DAC framework include:

**Relevance:** The extent to which the objectives of a development intervention are consistent with beneficiaries' requirements, country needs global priorities and partners' and donors' policies.

Retrospectively, the question of relevance often becomes a question as to whether the objectives of an intervention or its design are still appropriate given changed circumstances.

**Effectiveness or Efficacy:** The extent to which the development intervention's objectives were achieved, or are expected to be achieved, taking into account their relative importance.

**Efficiency:** A measure of how economically resources/inputs (funds, expertise, time, etc.) are converted to results. Note: Also used as an aggregate measure of (or judgment about) the merit or worth of an activity, i.e. the extent to which an intervention has attained, or is expected to attain, its major relevant objectives efficiently.

**Institutional Impact:** The Extent to which interventions were carried out with a positive institutional development impact.

**Sustainability:** The continuation of benefits from a development intervention after major development intervention has been completed, often also described as the probability of continued long-term benefits. It takes into account resilience to risk of the net benefit flows over time.

**Lacking in the standard OECD evaluation framework** is the evaluation of the development processes, and interactions among stakeholders and organizations, or the rules by which the various players designing and implementing an intervention play the game, what Douglas North describes as institutional analysis. Institutions critically determine the extent to which interventions are successfully adopted, adapted and scaled up. The absence of attention to processes and institutions is perhaps explained by the fact that donor evaluation frameworks have typically focused on accountability of the use of donor funds. The focus on how finances are used results, perhaps inadvertently, in less focus on i.e., outputs and outcomes. Evaluations focus least on the processes by which the program was implemented, and whether and how it can be replicated, or scaled up<sup>3</sup> (Lele and Balasubramaniam, 2007, Hartmann and Lynn 2008).

### **Evaluation Framework for Scaling Up Interventions**

“To Scale up” or “Not to Scale Up” is a challenge MSSRF has been wrestling with. Clearly, to this team, Scaling Up is not MSSRF’s comparative advantage. Yet, unlike most civil society/NGO organisations, due to Dr. Swaminathan’s demonstrated track record, and access to policymakers, MSSRF has had considerable opportunities *to be catalytic and contribute to* scaling up. Indeed in several cases it has already had considerable impact on scaling up. An important question for MSSRF, going forward is, whether, MSSRF’s long term effectiveness and the sustainability of its influence, will come from the extent to which its work results in *credible approaches* to technologies, institutions or policy innovations which can be scaled up by others, particularly, the government, the private sector and the financial institutions, into large scale programs with sustainable impacts on the poor. Fortunately literature and experience can contribute to considerations that should enter scaling up although a systematic evaluation framework or criteria for scaling up pilots does not yet exist and is long overdue.

Literature suggests that the ability to contribute to scaling up via pilots depends on considerations needed to scale up from the outset, i.e., at the design stage of pilots. In this regard, experience and literature suggests that MSSRF’s mission of pro-nature, pro-poor, and pro-women outcomes presents particularly difficult challenges in contributing to scaling up. Scalability of natural resource interventions the CGIAR has promoted has proven to have real limits because of the location specificity of natural resources. (Lele, et al., CGIAR at 31, 2004.) Similarly community based programs face special challenges in scaling up because they tend to be highly contextual, often face problems of elite capture, and are thus difficult to expand and replicate institutionally (Mansuri and Rao 2004, Gillespie 2004, Uvin 1996). Those few successful cases of scaling up involve champions with a relatively focused mission. In addition successful scaling up by individuals entails life time of work devoted to developing pilots and refining their weaknesses to help scale them up. Whereas champions are often necessary, the innovators who have ideas about what should be done are not necessarily those who take the idea to scale. Scaling up involves addressing a variety of other dimensions by various decision makers. Other models of successful scaling up involve governments and, in the case of agricultural innovations, either the private sector, or special institutions established to address issues of market failures. This was certainly the case with the First **Green Revolution** and would likely be even more true for the generation of the so-called **Ever-Green Revolution**, which is the gleam in the eye of MSSRF.

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3 Lele, Uma. Rema Balasubramaniam (2007). “Scaling Up Development Assistance: Lessons from Donor Evaluation and Evaluation Journals for Achieving Large Scale Sustainable Impacts,” January 6, 2007 (unpublished research Paper prepared for the Wolfensohn Center for Development). Also see Antraud Hartmann and Johannes Linn, Scaling Up: A Framework and Lessons For Development Effectiveness From Literature and Practice, Wolfensohn Center For Development, Working Paper 5, October 2008.

Government programs of Mexico and Brazil have involved rigorous monitoring and evaluation from the outset for systematic learning of the kind MSSRF has lacked. Additionally MSSRF has new tools of information technology which have not yet been deployed to achieve scale, and MSSRF has not yet systematically monitored or evaluated their role in scaling up.

Articulating the vision for the innovation or the model for implementing and scaling up the idea is therefore critical. Ideally, pilots should be put in place in such a way that, if successful, they could be scaled up. This means whether scaling up is feasible should be explicitly factored into the decision on whether and how to implement the pilot intervention. This needs to be followed up by a strategy on how to proceed beyond the first pilot phase of the project. Too often, such a vision for scaling up tends to be absent when projects are first designed and put in place. Some specific evaluations of MSSRF's programs have assessed its various pilots from such a perspective.

### **Devil is in the Detail on Scaling Up**

Scaling up has been defined using different concepts with more or less focus on coverage, quality, speed, equity and efficiency: For example, one such concept is “expanding, adapting and sustaining successful policies, programs or projects in different places and over time to reach a greater number of people.” (World Bank's Shanghai conference 2004). Others have defined “Scaling up to mean bringing more *quality* benefits to more people over a wider geographical area, *more quickly*, more *equitably*, and more *lastingly*,” or “to *efficiently* increase the socioeconomic impact from a small to a large scale of coverage” (Hancock 2003).

But the appropriate scale for and actors in scaling up varies considerably depending on the problem at hand. Communicable disease control or integrated pest management requires large scale replication to achieve successful results, but prudent management of ground water calls for caution against allowing too rapid replication by individuals or communities without any regulation, due to the risk of exhaustion of ground water resources. Large Scale Coastal Areas Management calls for an active role of national and state governments given complex interaction among publicly controlled forest lands, commercial fishers and small fishing communities, private sector dealing with fisheries and forestry, and the management of all the forestry and fisheries resources for their long term sustainability. Popularising MSSRF's salinity resistant or drought tolerant paddy varieties on the other hand requires large scale trials, production and commercialisation of seeds and the universal access of poor people to seeds, inputs and information on management of new rice technology. MSSRF's own food security work shows that while the problems and solutions to the nutrition and early child development are well understood based on decades of research, there is too little focus on how to implement and scale up the right interventions. This is because, scaling up tends to have several different dimensions: quantitative, policy, functional, political, fiscal, legislative, organisational and human capital among others. Going forward, based on its rich experience with pilots the tremendous potential for MSSRF to articulate the full implications for scaling up different types of interventions is explored in this review.

**Evaluation Process and Inputs:** To understand these issues in the context of MSSRF's work, in addition to the interviews, the review involved collection of the following types of data.

- **All program inputs:** This was a major challenge. The information and data are plentiful, but are not well organised to develop a programmatic view and had to be organised by the reviewers with the help of the MSSRF staff for this purpose.
- **Overall strategic direction and management of the organisation at all levels**



- **Staffing:** Composition, tenure, structure of formal and informal incentives to the staff in the use of resources,
- **Finance:** Levels and sources, the extent to which financing is project or program based, short or long term.
- **Program outputs:** Including publications, workshops and seminars, training manuals, self help groups formed, number of people trained, and successful partnerships formed among others.
- **Program outcomes:** Changes in policies, legislation, rules and regulations, institutions, public and private allocation of resources, infrastructure established, technologies and processes developed.
- **Program impacts:** Increased empowerment of people, increased incomes, improved quality or quantity of natural resources. The section on Monitoring and Evaluation discusses the system of M and E currently in place and the one needed to develop scalable models.

## Annexure - 2

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Email: swami@mssrf.res.in; chairman@mssrf.res.in

**Shri A M Gokhale**, Executive Director, MSSRF, 3<sup>rd</sup> Cross Street,  
Taramani Institutional Area, Chennai - 600 113,  
Tel: +91-044-22541698/ 22541229,  
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**Coastal Systems Research - PA 100 - *Dr V Selvam, Director***

**Biodiversity – PA 200** - Dr N Anil Kumar; Director, Dr K U K Nampoothiri, Director ; Dr Arivudai Nambi V ; Dr Israel Oliver King, Mr S V Ramana, &  
Dr Geetha Rani

**Biotechnology – PA 300** - Dr Ajay Parida; Director, Dr G N Hariharan; &  
Dr S Rajalakshmi

**Ecotechnology – PA 400** - Dr Sudha Nair, Director, Dr Rengalakshmi,  
Dr Prabavathy, Dr Nageswaran, Ms Shanthi Durai, Dr R Vijay Subbiah;  
Mr S V Ramana; Dr Malarvannan & Ms Hemavathy, Dr R Rukmani &  
Dr Arivudai Nambi .A

**Food Security – PA 500** - Ms R V Bhavani, Director, Dr V B Athreya,  
Ms G Anuradha, Mr R Gopinath, Dr Jayakumar, & Ms Subhangi Sahoo

**Information, Education and Communication – PA 600** - Mr S Senthilkumaran, Director, Ms Nancy Anabel, Ms Girija, Dr J D Sophia,  
Ms Ganga Vidya, Mr J Srinath, Mr P Sivakumar, Mr Rajkumar, Ms Velvizhi,  
Mr Surendran, Mr Jegan, Ms Sree Kirupa & Mr Rajamanickam

**Prof P C Kesavan**, Former Executive Director, MSSRF; **Dr S Bala Ravi**, Advisor, MSSRF

**Administration - *Mr Hariharakrishnan, Manager (P&A)***

**Accounts** - Ms S Udaya, Associate Manager (B&A), Ms Prathiba,  
Associate Manager (B&A)

***Stakeholders***

***a. Government Officials***

**Mr C K Sreedharan**, Chief Conservator of Forests,  
Government of Tamil Nadu, Chennai

***b. Stakeholders participated in the Video Conference on 7<sup>th</sup> January 2009 - PA 600***

**Annasaval VRC (Pudukkottai District):** Ms .Bhavani Elango, Mr Rajadurai, Mr. Ramasami, Smt. Vennila, Mr Senthilkumar

**Nagapattinam VRC (Nagapattinam District):** Mr. Neethimanickam, Mr. Mugundan, Mr. Manikandan, Ms. Sasikala, Mr. Ramesh, Ms. Umavadi, Ms. Kanimozhi, Ms. Durgadevi, Mr. Cholarajan, Ms. Surya, Mr. Muruganandam

**Thiruvaiyaru VRC (Thanjavur District):** Mr V Palaniappan, Mr. Pusparaj, Ms Kalaivani Rajendran, Mr Mohan, Mr S Loganathan, Dr. Porpavi, Mr. Ramlingam,

**Yavatmal VRC (Yavatmal District) (Tele-Conferencing):** Dr. Ramakant Kolte, Mr. Manoj Chandurkar, Dr. N D Parlawar, Mr. Hagwane, Mr. Avinash Shirke, Mr. S. K. Deshmukh, Mr Subhash Sharma, Mr. Sanjay Kolhe, Mr. Deepak Pal, Mr. Suresh Pawde, Mr. Deepak Shinde, Mr. Rajaram Kumre, Mr. Arvind Meshram, Mr. Balu Jadhav, Ms Prajapati chande, Ms Indubai Bondade, Mr Dinesh Hajare, Mr Prasant Dhepe, Mr Nilash

**VRC , Puducherry:** Ms Indira Gandhi, Ms Satyavani, Ms Maheswari, Ms Poongavanam, Ms Malarvizhi, Ms Kasturi, Ms Janagi, Ms Amirtham, Ms Sundari, Ms Uma, Ms Rukumani, Ms J Sumathi, Mr Chinathambi, Mrs. Maha, Mr Vijayan, Mr. Lingeswaran, Ms. Kasthuri, Mr Kathirvel, Ms Manohari, Mr Manankatty, Mr Krishnamoorthy and Ms Sundari, Ms Veerammal, Mr Sivaganesh, Mr Kasinathan, Mr N Rajaveeran, Mr T Kanthan, Mr Kaviyarasan, Prof. Srinivasan, Mr. Ravi, Mr. Ramasamy, Dr. Kumanan, Mr Thiagarajan, Dr Nachimuthu, Ms Bhuvaneshwary, Ms. Rajalakshmy, Ms Sumathy and her mother Ms Azhagarasi, Ms. Kanimozhi and her mother of Mrs. Malarvizhi, Ms Vazhumani, Mr Anbarasan, Ms Rajeswari, Mr. K. Sreenivasan, Mr. Chinnasamy, Mr. Jayakumar, Mr. Nagarathinam, Mr Ravi, Prof Ganavel

***Bio Centre, Puducherry, JRD Ecotechnology Centre***

***a. Staff interacted***

1. Mr. D. Rosario
2. Ms. G. Meenakshi
3. Dr. Sudarkodi
4. Mr. P. Santhamurthy
5. Mr. R. Sanjeev

**b. Bio Village Council Members / Animators:** Ms. Rajalakshmi, Ms. Krishnaveni, Ms. Jyothi, Ms. Suseela, Ms. Kathanayagi, Ms. Pakirichi, Ms. Akila Erasam, Ms. Vishnupathy, Ms. Prema, Ms. Thayar, Ms. Saraladevi, Ms. Bharathy, Ms. Lakshmi, Ms. Jamuna, Ms. Vijaya, Ms. Indira, Ms. Murugamathy, Ms. Shayamalavathy, Ms. Anandhi, Ms. Vijayakumari

**c. Other Stakeholders for JRD Ecotech Centre:** **Ms. Sharadha**, Asst. Manager, SBI, Puducherry; **Mr. Ramasamy**, Manager - Loans, Indian Bank, Villianur, Puducherry; **Mr. Kennedy**, Additional Director of Agriculture, Vanur Block, Puducherry; **Mr. Chitharanjan**, Asst. PO, DRDA, Puducherry; **Mr. Sivaprakasam**, Veterinary Doctor, Dept of Animal Husbandry, Villianur, Puducherry ; **Mr. Badhri**, SBI Life, Brindavan Branch, Puducherry.

***Chidambaram***

**a. Staff interacted:** Dr. V.Selvam (Coastal Systems); Mr.K.G.Mani (Coastal Systems); Mr.V.Sivanesan (Coastal Systems); Dr. Sanjeeviraj (JRD Ecotechnology Centre ); Dr. M. Nageswaran (JRD Ecotechnology Centre); E. Selvaganapathy (JRD Ecotechnology Centre); P. Sivakumar (Climate Change); Mr. Elangovan (Informatics); Mr. Veeraraj (Informatics)

**b. Community:** Traditional leaders and leaders of the Village Mangrove Council women and men of MGR Nagar and Kalaingar Nagar

**c. Panchayat Raj Members / Counselors:** **P. Sushill** (Panchayat Counselor); **V. Selvaragavan** (District Counselor); **Mr. Kasinathan** (Panchayat President, Silambimangalam)

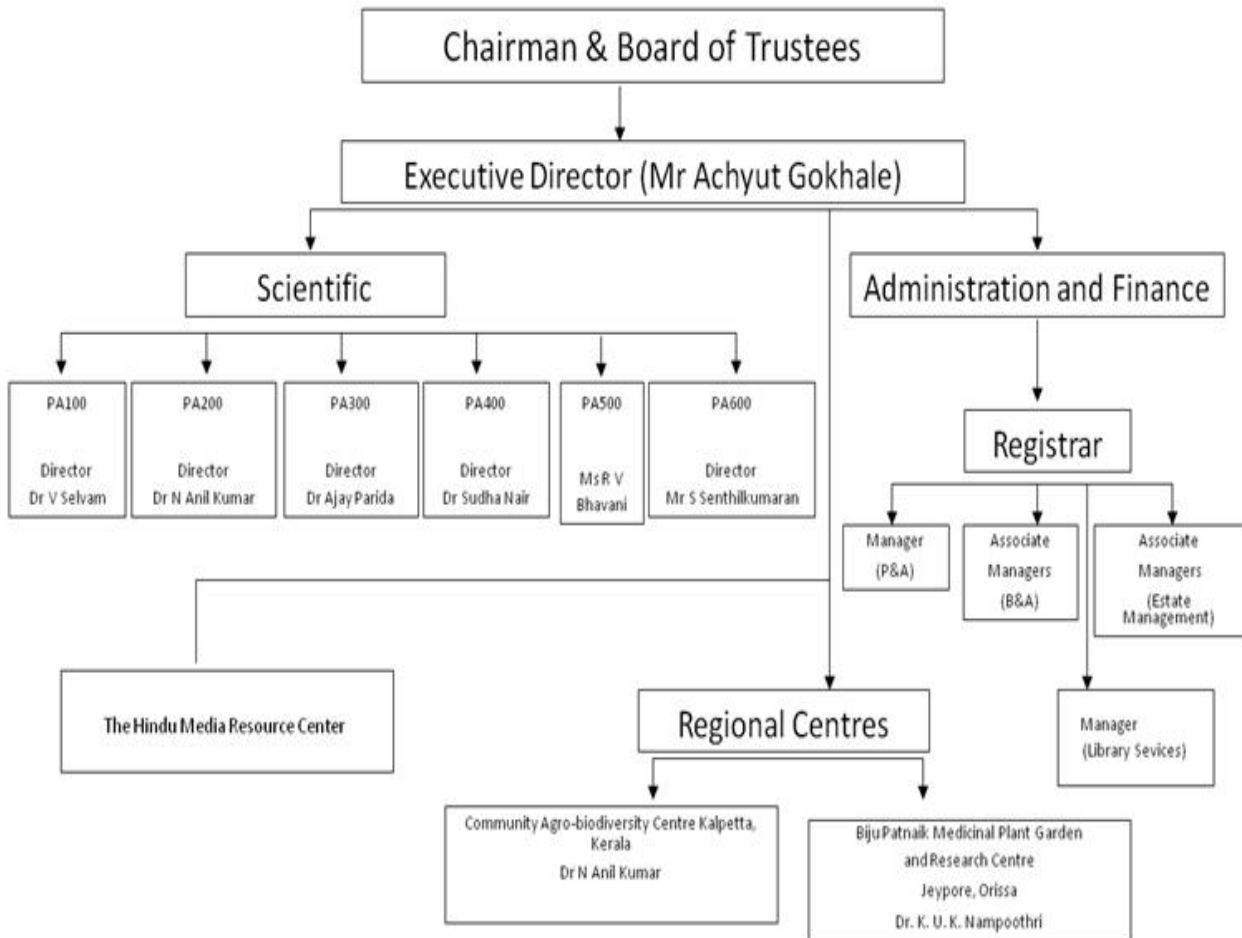
**d. SHGs Village wise:** Annai Kasthuribai Women SHGs, Annai Lakshmibai Women SHGs, Kamadenu Women SHGs, Vekkaiammam, Women SHGs, Jothi Vallalar Women SHGs, Mullai Women SHGs, Om Rajakaliyammam Women SHGs, Annai Sonia Gandhi Women SHGs, Annai Teresa Women SHGs, Suriyan Women SHGs, Kamaraj Men SHGs,

e. Manikollai Small Farmers Lift Irrigation Federation (JRD Field site) Om Sakthi Small Farmers Lift Irrigation SHGs; Vallalar Small Farmers Lift Irrigation SHGs; Veerananar Small Farmers Lift Irrigation SHGs; Pachaivazhiamman Small Farmers Lift Irrigation SHGs; Punitha Vannathu Chinnappar Small Farmers Lift Irrigation SHGs; Rajeev Gandhi Small Farmers Lift Irrigation SHGs

**f. Other Stakeholders::** **Mr. Vijayakumar**, Manager, Canara Bank, Pudukottai;  
**Mr. Illanchezian**, Proprietor, SSS Marine Farms, Chidambaram

### Annexure 3

## MSSRF - Organisational Structure





**Annexure 4**  
**Fund Flow Statement under each Programme Areas**  
**for the last 10 years**

PROGRAMME AREA / YEAR	1998-1999	1999-2000	2000-2001	2001-2002	2002-2003	2003-2004	2004-2005	2005-2006	2006-2007	2007-2008
	(Rs. in lakhs)	(Rs. in lakhs)	(Rs. in lakhs)	(Rs. in lakhs)	(Rs. in lakhs)	(Rs. in lakhs)	(Rs. in lakhs)	(Rs. in lakhs)	(Rs. in lakhs)	(Rs. in lakhs)
<b>PROGRAMME AREA – 100 Coastal Systems Research</b>										
Available fund from Ongoing Projects	16,870,974.00	15,665,928.00	379,514.00	49,705,261.00	42,428,270.00	34,277,324.00	4,256,410.00	4,053,960.00	6,804,393.00	33,624,113.00
Funds From new projects			10,360,774.00	351,262.00	304,301.00	2,450,496.00	2,002,891.00	4,523,162.00	23,724,124.00	
<b>SUBTOTAL - RECEIPTS - A</b>	<b>16,870,974.00</b>	<b>15,665,928.00</b>	<b>10,740,288.00</b>	<b>50,056,523.00</b>	<b>42,732,571.00</b>	<b>36,727,820.00</b>	<b>6,259,301.00</b>	<b>8,577,122.00</b>	<b>30,528,517.00</b>	<b>33,624,113.00</b>
Total Expenses from Ongoing Projects	11,516,547.00	15,749,923.00	120,999.00	38,344,690.00	32,429,136.00	27,693,716.00	3,236,266.00	3,022,783.00	6,134,200.00	25,169,260.00
Total Expenses- New Projects			79,028.00	164,548.00	129,268.00	1,452,049.00	224,231.00	2,680,545.00	2,585,357.00	
<b>SUBTOTAL EXPENSES - B</b>	<b>11,516,547.00</b>	<b>15,749,923.00</b>	<b>200,027.00</b>	<b>38,509,238.00</b>	<b>32,558,404.00</b>	<b>29,145,765.00</b>	<b>3,460,497.00</b>	<b>5,703,328.00</b>	<b>8,719,557.00</b>	<b>25,169,260.00</b>
<b>PROGRAMME AREA – 200 Biodiversity</b>										
Available fund from Ongoing Projects	3,658,594.00	2,249,083.00	6,771,658.00	2,052,817.00	4,789,569.00	18,557,270.00	15,876,195.00	22,471,206.00	11,008,831.00	17,171,289.00
Funds From new projects			887,008.00	8,771,784.00			2,574,735.00	1,978,926.00	2,017,000.00	2,945,471.00
<b>SUBTOTAL - RECEIPTS - A</b>	<b>3,658,594.00</b>	<b>2,249,083.00</b>	<b>7,658,666.00</b>	<b>10,824,601.00</b>	<b>4,789,569.00</b>	<b>18,557,270.00</b>	<b>18,450,930.00</b>	<b>24,450,132.00</b>	<b>13,025,831.00</b>	<b>20,116,760.00</b>
Total Expenses from Ongoing Projects	3,299,121.00	1,372,326.00	4,445,055.00	1,807,233.00	3,107,743.00	9,242,095.00	7,410,954.00	19,001,217.00	5,136,364.00	13,192,941.00
Total Expenses- New Projects			334,449.00	6,225,558.00			494,792.00	464,464.00		1,752,669.00
<b>SUBTOTAL EXPENSES - B</b>	<b>3,299,121.00</b>	<b>1,372,326.00</b>	<b>4,779,504.00</b>	<b>8,032,791.00</b>	<b>3,107,743.00</b>	<b>9,242,095.00</b>	<b>7,905,746.00</b>	<b>19,465,681.00</b>	<b>5,136,364.00</b>	<b>14,945,610.00</b>

PROGRAMME AREA / YEAR	1998-1999 (Rs. In lakhs)	1999-2000 (Rs. In lakhs)	2000-2001 (Rs. In lakhs)	2001-2002 (Rs. In lakhs)	2002-2003 (Rs. In lakhs)	2003-2004 (Rs. In lakhs)	2004-2005 (Rs. In lakhs)	2005-2006 (Rs. In lakhs)	2006-2007 (Rs. In lakhs)	2007-2008 (Rs. In lakhs)
<b>PROGRAMME AREA – 300 Biotechnology</b>										
Available fund from Ongoing Projects	1,595,292.00	11,124,766.00	39,192,867.00	10,840,170.00	33,295,909.00	38,086,615.00	34,812,583.00	49,221,902.00	83,805,553.00	54,282,228.00
Funds From new projects	5,559,672.00	57,000.00	287,000.00		6,697,508.00	4,100,122.00	13,630,413.00	37,245,472.00	1,547,929.00	12,220,488.00
<b>SUBTOTAL - RECEIPTS - A</b>	<b>7,154,964.00</b>	<b>11,181,766.00</b>	<b>39,479,867.00</b>	<b>10,840,170.00</b>	<b>39,993,417.00</b>	<b>42,186,737.00</b>	<b>48,442,996.00</b>	<b>86,467,374.00</b>	<b>85,353,482.00</b>	<b>66,502,716.00</b>
Total Expenses from Ongoing Projects	887,489.00	6,124,045.00	24,127,528.00	7,004,455.00	19,741,470.00	13,579,944.00	8,361,735.00	18,010,554.00	29,280,004.00	54,904,862.00
Total Expenses- New Projects	2,662,904.00	4,426.00	19,073.00		1,130,850.00	803,356.00	7,018,414.00	7,150,846.00	381,137.00	1,054,903.00
<b>SUBTOTAL EXPENSES - B</b>	<b>3,550,393.00</b>	<b>6,128,471.00</b>	<b>24,146,601.00</b>	<b>7,004,455.00</b>	<b>20,872,320.00</b>	<b>14,383,300.00</b>	<b>15,380,149.00</b>	<b>25,161,400.00</b>	<b>29,661,141.00</b>	<b>55,959,765.00</b>
<b>PROGRAMME AREA – 400 Ecotechnology</b>										
Available fund from Ongoing Projects	23,331,856.00	10,203,762.00	15,873,567.00	15,901,327.00	41,500,857.00	11,790,543.00	18,477,171.00	19,485,794.00	58,197,341.00	86,474,023.00
Funds From new projects	6,441,194.00			3,177,030.00	975,794.00	10,066,306.00	2,106,089.00	26,896,216.00	20,500,000.00	7,290,505.00
<b>SUBTOTAL - RECEIPTS - A</b>	<b>29,773,050.00</b>	<b>10,203,762.00</b>	<b>15,873,567.00</b>	<b>19,078,357.00</b>	<b>42,476,651.00</b>	<b>21,856,849.00</b>	<b>20,583,260.00</b>	<b>46,382,010.00</b>	<b>78,697,341.00</b>	<b>93,764,528.00</b>
Total Expenses from Ongoing Projects	17,054,845.00	13,245,298.00	8,118,682.00	8,422,906.00	12,055,709.00	3,397,129.00	6,010,760.00	8,136,203.00	19,485,134.00	25,155,641.00
Total Expenses- New Projects	3,897,099.00			1,031,351.00	347,958.00	902,013.00	363,616.00	6,296,236.00	7,550.00	2,474,404.00

PROGRAMME AREA / YEAR	1998-1999 (Rs. In lakhs)	1999-2000 (Rs. In lakhs)	2000-2001 (Rs. In lakhs)	2001-2002 (Rs. In lakhs)	2002-2003 (Rs. In lakhs)	2003-2004 (Rs. In lakhs)	2004-2005 (Rs. In lakhs)	2005-2006 (Rs. In lakhs)	2006-2007 (Rs. In lakhs)	2007-2008 (Rs. In lakhs)
<b>SUBTOTAL EXPENSES - B</b>	<b>20,951,944.00</b>	<b>13,245,298.00</b>	<b>8,118,682.00</b>	<b>9,454,257.00</b>	<b>12,403,667.00</b>	<b>4,299,142.00</b>	<b>6,374,376.00</b>	<b>14,432,439.00</b>	<b>19,492,684.00</b>	<b>27,630,045.00</b>
<b>PROGRAMME AREA - 500 Food Security</b>										
Available fund from Ongoing Projects	1,540,528.00	2,819,376.00	4,405,477.00	1,716,576.00	11,887,515.00	17,913,262.00	17,504,182.00	14,190,467.00	9,323,604.00	12,429,747.00
Funds From new projects		2,664,381.00	3,023,699.00	782,158.00			3,416,836.00	4,588,849.00		7,167,150.00
<b>SUBTOTAL - RECEIPTS - A</b>	<b>1,540,528.00</b>	<b>5,483,757.00</b>	<b>7,429,176.00</b>	<b>2,498,734.00</b>	<b>11,887,515.00</b>	<b>17,913,262.00</b>	<b>20,921,018.00</b>	<b>18,779,316.00</b>	<b>9,323,604.00</b>	<b>19,596,897.00</b>
Total Expenses from Ongoing Projects	367,407.00	1,694,009.00	2,417,565.00	1,095,497.00	8,279,770.00	11,791,967.00	9,006,675.00	6,395,455.00	3,422,542.00	4,698,553.00
Total Expenses - New Projects		438,640.00	2,467,020.00	200.00			529,087.00	836,263.00		1,899,969.00
<b>SUBTOTAL EXPENSES - B</b>	<b>367,407.00</b>	<b>2,132,649.00</b>	<b>4,884,585.00</b>	<b>1,095,697.00</b>	<b>8,279,770.00</b>	<b>11,791,967.00</b>	<b>9,535,762.00</b>	<b>7,231,718.00</b>	<b>3,422,542.00</b>	<b>6,598,522.00</b>
<b>PROGRAMME AREA - 600 Information, Education and Communication</b>										
Available fund from Ongoing Projects	978,379.00	3,260,328.00	378,908.00	4,206,216.00	4,948,161.00	1,892,545.00	9,089,198.00	33,032,680.00	49,846,228.00	49,980,336.00

PROGRAMME AREA / YEAR	1998-1999 (Rs. In lakhs)	1999-2000 (Rs. In lakhs)	2000-2001 (Rs. In lakhs)	2001-2002 (Rs. In lakhs)	2002-2003 (Rs. In lakhs)	2003-2004 (Rs. In lakhs)	2004-2005 (Rs. In lakhs)	2005-2006 (Rs. In lakhs)	2006-2007 (Rs. In lakhs)	2007-2008 (Rs. In lakhs)
<b>Funds From new projects</b>		2,107,448.00	514,918.00	986,430.00		13,399,931.00	22,429,114.00			8,592,376.00
<b>SUBTOTAL - RECEIPTS - A</b>	<b>978,379.00</b>	<b>3,260,328.00</b>	<b>2,486,356.00</b>	<b>4,721,134.00</b>	<b>5,934,591.00</b>	<b>1,892,545.00</b>	<b>22,489,129.00</b>	<b>55,461,794.00</b>	<b>49,846,228.00</b>	<b>58,572,712.00</b>
<b>Total Expenses from Ongoing Projects</b>	978,379.00	2,695,046.00	92,101.00	1,888,024.00	2,789,342.00	480,639.00	2,612,464.00	12,477,411.00	14,283,780.00	14,807,393.00
<b>Total Expenses- New Projects</b>			510,732.00	398,485.00	121,303.00		476,865.00	2,363,916.00		680,747.00
<b>SUBTOTAL EXPENSES - B</b>	<b>978,379.00</b>	<b>2,695,046.00</b>	<b>602,833.00</b>	<b>2,286,509.00</b>	<b>2,910,645.00</b>	<b>480,639.00</b>	<b>3,089,329.00</b>	<b>14,841,327.00</b>	<b>14,283,780.00</b>	<b>15,488,140.00</b>
<b>GRAND TOTAL - RECEIPTS - A ( all areas)</b>	<b>59,976,489.00</b>	<b>48,044,624.00</b>	<b>83,667,920.00</b>	<b>98,019,519.00</b>	<b>147,814,314.00</b>	<b>139,134,483.00</b>	<b>137,146,634.00</b>	<b>240,117,748.00</b>	<b>266,775,003.00</b>	<b>292,177,726.00</b>
<b>Add</b>										
Conferences/Seminars	14,546,657.00	27,064,939.00	97,538,283.00	121,877,315.00	18,302,703.00	21,847,408.00	34,712,833.00	28,701,887.00	27,328,008.00	14,235,337.00
recd during the yr & unspent										
bal c/f from prev. yrs										
<b>Total Receipts as per Audit Statements</b>	<b>74,523,146.00</b>	<b>75,109,563.00</b>	<b>181,206,203.00</b>	<b>219,896,834.00</b>	<b>166,117,017.00</b>	<b>160,981,891.00</b>	<b>171,859,467.00</b>	<b>268,819,635.00</b>	<b>294,103,011.00</b>	<b>306,413,063.00</b>
<b>GRAND TOTAL - EXPENSES - B ( all</b>	<b>40,663,791.00</b>	<b>41,323,713.00</b>	<b>42,732,232.00</b>	<b>66,382,947.00</b>	<b>80,132,549.00</b>	<b>69,342,908.00</b>	<b>45,745,859.00</b>	<b>86,835,893.00</b>	<b>80,716,068.00</b>	<b>145,791,342.00</b>

PROGRAMME AREA / YEAR	1998-1999 (Rs. In lakhs)	1999-2000 (Rs. In lakhs)	2000-2001 (Rs. In lakhs)	2001-2002 (Rs. In lakhs)	2002-2003 (Rs. In lakhs)	2003-2004 (Rs. In lakhs)	2004-2005 (Rs. In lakhs)	2005-2006 (Rs. In lakhs)	2006-2007 (Rs. In lakhs)	2007-2008 (Rs. In lakhs)
<b>areas)</b>										
Conferences/Seminars exps spent during the yf	12,288,324.00	220,160,397.00	9,280,281.00	19,565,202.00	10,065,661.00	16,441,057.00	21,233,010.00	14,025,739.00	13,838,646.00	18,511,360.00
<b>Total Payments as per Audit Statements</b>	<b>52,952,115.00</b>	<b>261,484,110.00</b>	<b>52,012,513.00</b>	<b>85,948,149.00</b>	<b>90,198,210.00</b>	<b>85,783,965.00</b>	<b>66,978,869.00</b>	<b>100,861,632.00</b>	<b>94,554,714.00</b>	<b>164,302,702.00</b>

NOTES:

1. The above figures are taken from Audited Reports ( Inflow - outflow statement) of the respective years
2. The total receipts includes the opening balance of the previous year.
3. Apart from the regular projects - conferences/ seminars are shown separately.

## Annexure - 5

### Projects Implemented / Ongoing segregated Programme Areas

(Source: Extracted from the reports submitted for this review under individual Programmes Areas)

**Summary Table showing the number of agencies from where we received support (unique for each Programme Areas, some of the donors have also supported multiple PAs)**

Programme Area(s)	NATIONAL							INTERNATIONAL					
	Agency - Govt. of India	Funding Agency	State Govt.	Banks	Pvt. Company	NGO	Individual	Agency - UN	Funding Agency	MNC	NGO	Research Institute	Association
PA 100 - Coastal Systems Research	1		1					1	4				
PA 200 – Biodiversity	4	1							1	1			
PA 300 – Biotechnology	2							1	1		1	1	
PA 400 – Ecotechnology	9	1		2	1	1		1	4	1	2		
PA 500 - Food Security		1			1		1	3	4		3	1	
PA 600 - Information, Education and Communication	2	1			1	1		1	5	3			2

Programme Area	Project Year	Project Title	FUNDING AGENCY	Classification/Nature of the Funder	Budget Amount	
PA 100 – Coastal Systems Research	<b>Detailed listing of projects</b>	Community based Mangrove wetlands Conservation and Management	CIDA-ICEF	International Funding Agency		
PA 100 – Coastal Systems Research		Promotion of Alternative Livelihoods for the Poor in the Biosphere of Gulf of Mannar	UNDP	Agency of UN		
PA 100 – Coastal Systems Research		1991 – 1994	Establishment of an International Network for the Conservation and Sustainable Utilization Of Mangrove Forest Genetic Resources	INTERNATIONAL TROPICAL TIMBER ORGANIZATION	International Funding Agency	
PA 100 – Coastal Systems Research		1998-2002	Nuclear and Biotechnological Tools for Coastal Systems Research	DEPARTMENT OF ATOMIC ENERGY	Agency of Govt. of India	Rs. 300.00 lakhs
PA 100 – Coastal Systems Research		2004-2009	Nuclear and biotechnological coastal systems research	DEPARTMENT OF ATOMIC ENERGY	Agency of Govt. of India	Rs. 440.00 lakhs
PA 100 – Coastal Systems Research		2005-	Development of community based models of bioshield	IDRC-CIDA	International Funding Agency	

Programme Area	Project Year	Project Title	FUNDING AGENCY	Classification/Nature of the Funder	Budget Amount
PA 100 – Coastal Systems Research	2005 -	Indo-Sri Lanka Project on Strengthening the Resilience of the Tsunami affected communities	SDC	International Funding Agency	
PA 100 – Coastal Systems Research	2005 -2007	Restoration of mangroves in Andhra Pradesh	DEPT. OF FOREST GOVT OF ANDHRA PRADESH	State Govt.	
PA 100 – Coastal Systems Research	2005-2009	Mangrove Restoration at Buckingham Canal Bay of Bengal mouth at Kalpakkam	DEPARTMENT OF ATOMIC ENERGY	Agency of Govt. of India	Rs. 9.00 lakhs
PA 200 – Biodiversity		Characterisation of rice land races	GEF-PDF	International Funding Agency	
PA 200 – Biodiversity		Endowment Support for Wayanad Centre	FORD FOUNDATION ENDOWMENT	International Funding Agency	
PA 200 – Biodiversity		Ex situ conservation of medicinal plants used by major tribes of Western Orissa and capacity building of local communities for conservation and cultivation of medicinal plants used in health care systems	DEPARTMENT OF BIOTECHNOLOGY	Agency of Govt. of India	
PA 200 – Biodiversity		Livelihood enhancement of tribal poor in Jeypore region of Koraput District, Orissa through sustainable NRM and Capacity & Skill Development	DEPARTMENT OF BIOTECHNOLOGY	Agency of Govt. of India	
PA 200 – Biodiversity		Quantitative Assessment and mapping of Plant Resources of Eastern Ghats	DEPARTMENT OF BIOTECHNOLOGY	Agency of Govt. of India	
PA 200 – Biodiversity		Training of Tribal Youth	MITSUBISHI	MNC	
PA 200 – Biodiversity	1999 – 2003	Sustainable Management of Plant Biodiversity (NATP-PB)	National Bureau of Plant Genetic Resources (NBPGR), New Delhi	Agency of Govt. of India	
PA 200 – Biodiversity	2000 – 2004	Collection, Documentation and Validation of Indigenous Technical Knowledge (NATP-ITK)	NATIONAL BUREAU OF PLANT GENETIC RESOURCES	Agency of Govt. of India	
PA 200 – Biodiversity	2004- 2009	Medicinal and speciality rices of Kerala: validation, value addition, organic cultivation and market development	NATIONAL MEDICINAL PLANTS BOARD, DEPARTMENT OF AYUSH, GOVT OF INDIA	Agency of Govt. of India	
PA 200 – Biodiversity	2005 – 2009	Conserving 80 Threatened Species by Creating 8 Research Fellowships In Systematic Botany	SIR DORABJI TATA TRUST, MUMBAI	Indian Funding Agency	

Programme Area	Project Year	Project Title	FUNDING AGENCY	Classification/Nature of the Funder	Budget Amount
PA 200 – Biodiversity	2005-2009	Integrated Management of Biodiversity Resources in Partnership with People: Innovative Models to reach Millennium Development Goal on Elimination of Hunger and Poverty	SWISS AGENCY FOR DEVELOPMENT AND COOPERATION	International Funding Agency	
PA 200 – Biodiversity	2008-2011	Biosystematic investigations on the wild cloves and Rose apples of Western Ghats	DEPARTMENT OF SCIENCE AND TECHNOLOGY	Agency of Govt. of India	
PA 300 – Biotechnology	1993-1997	Application of Biotechnology in the Conservation of endangered plant species for Genetic Enhancement – Molecular Biology Component	DEPARTMENT OF BIOTECHNOLOGY	Agency of Govt. of India	Rs. 99.00 lakhs
PA 300 – Biotechnology	1995-1997	Intra-specific variation in mangroves – Principal Investigator	IAEA	International Funding Agency	USD 12,000
PA 300 – Biotechnology	1997-1999	Farmer centered Agricultural Resource management (FARM) – Coordinator	FOOD & AGRICULTURE ORGANISATION	Agency of UN	USD 5,000
PA 300 – Biotechnology	1997-2002	Application of Biotechnology in the genetic enhancement of Coastal Agrobiodiversity	DEPARTMENT OF BIOTECHNOLOGY	Agency of Govt. of India	Rs. 195.00 + 33.00
PA 300 – Biotechnology	1999-2004	Genetic Indexing of legumes and millets	DEPARTMENT OF BIOTECHNOLOGY	Agency of Govt. of India	Rs. 44.00 lakhs
PA 300 – Biotechnology	2001	Every Child a Scientist	AMERICAN EXPRESS FOUNDATION	International NGO	USD 20,000
PA 300 – Biotechnology	2001-2003	EST sequencing and isolation of novel genes from Mangroves	DEPARTMENT OF BIOTECHNOLOGY	Agency of Govt. of India	Rs. 45.00 lakhs
PA 300 – Biotechnology	2001-2004	Enhancement of Coastal Agroecosystems	NBDB	Agency of Govt. of India	Rs. 98.00 lakhs
PA 300 – Biotechnology	2001-2004	Network project on Bioenergy crops	DEPARTMENT OF BIOTECHNOLOGY	Agency of Govt. of India	Rs. 26.00 lakhs
PA 300 – Biotechnology	2002-2007	Lichen diversity and its distribution in the Madhukarai region of western Ghats its correlation with distribution in the region	DEPARTMENT OF BIOTECHNOLOGY	Agency of Govt. of India	Rs. 20.00 lakhs
PA 300 – Biotechnology	2003-2008	Bioprospecting genes from Paspalum juliflora for drought tolerance	DEPARTMENT OF BIOTECHNOLOGY	Agency of Govt. of India	Rs. 28.00 lakhs
PA 300 – Biotechnology	2003-2008	Capacity Building and Development of Touch and Smell Gardens for Visually Impaired	DEPARTMENT OF BIOTECHNOLOGY	Agency of Govt. of India	Rs. 30.00 lakhs



Programme Area	Project Year	Project Title	FUNDING AGENCY	Classification/Nature of the Funder	Budget Amount
PA 300 – Biotechnology	2004-2010	Production and demonstration of quality planting material of Jatropha curcas	DEPARTMENT OF BIOTECHNOLOGY	Agency of Govt. of India	Rs. 44.00 lakhs
PA 300 – Biotechnology	2005-2009	Biotechnological approaches for sustainable management and enhancement of coastal ecosystem approach and gene mining and discovery for fragile ecosystems select plant and lichen species	DEPARTMENT OF BIOTECHNOLOGY	Agency of Govt. of India	Rs. 103.00 lakhs
PA 300 – Biotechnology	2005-2009	Clonal and progeny evaluation of Jatropha curcas	DEPARTMENT OF BIOTECHNOLOGY	Agency of Govt. of India	Rs. 42.00 lakhs
PA 300 – Biotechnology	2005-2009	Ex situ conservation of medicinal plants used by major tribes of Orissa and capacity building of communities for conservation and cultivation of medicinal plants and health care systems	DEPARTMENT OF BIOTECHNOLOGY	Agency of Govt. of India	Rs. 52.00 lakhs
PA 300 – Biotechnology	2005-2009	Genetic enhancement of coastal ecosystem – isolation, characterisation, and evaluation of antiporter gene from Portulaca oleracea	DEPARTMENT OF BIOTECHNOLOGY	Agency of Govt. of India	Rs. 123.00 lakhs
PA 300 – Biotechnology	2005-2009	Molecular and Chemical production of high quality essential oil of Pandanus (Pandanus Species)	DEPARTMENT OF BIOTECHNOLOGY	Agency of Govt. of India	Rs. 28.00 lakhs
PA 300 – Biotechnology	2005-2009	Sustainable ecological and economic Rehabilitation of four tsunami affected villages in Tamil Nadu and Pondicherry	DEPARTMENT OF BIOTECHNOLOGY	Agency of Govt. of India	Rs. 168.00 lakhs
PA 300 – Biotechnology	2005-2010	DEPARTMENT OF BIOTECHNOLOGY Program support for characterization and validation of the mangrove gene transgenic rice systems for salt stress tolerance	DEPARTMENT OF BIOTECHNOLOGY	Agency of Govt. of India	Rs. 375.00 lakhs
PA 300 – Biotechnology	2005-2010	Isolation of genes for Transcription factor for Mangrove Species Bioscience Award to Dr Ajay	DEPARTMENT OF BIOTECHNOLOGY	Agency of Govt. of India	Rs. 9.00 lakhs
PA 300 – Biotechnology	2005-2010	Rice biofortification with enhanced iron and zinc in high yielding basmati cultivar through marker assisted breeding and transgenic approaches	DEPARTMENT OF BIOTECHNOLOGY	Agency of Govt. of India	Rs. 102.00 lakhs
PA 300 – Biotechnology	2006	IRRI funding of biofortification	IRRI	International Research Institute	USD 42,000
PA 300 – Biotechnology	2006-2009	Genetic diversity assessment and molecular profiling of Cajanus and Vigna umbellata of East	DEPARTMENT OF BIOTECHNOLOGY	Agency of Govt. of India	Rs. 24.00 lakhs

<b>Programme Area</b>	<b>Project Year</b>	<b>Project Title</b>	<b>FUNDING AGENCY</b>	<b>Classification/Nature of the Funder</b>	<b>Budget Amount</b>
PA 300 – Biotechnology	2007-2010	Isolation and characterisation involved in <i>Jatropha curcas</i> s biosynthesis through large scale sequencing of seed - specific library	DEPARTMENT OF BIOTECHNOLOGY	Agency of Govt. of India	Rs. 23.00 lakhs
PA 300 – Biotechnology	2008-2012	Bioprospecting of selected li plant species for product dev against cancer and tuberculo	DEPARTMENT OF BIOTECHNOLOGY	Agency of Govt. of India	Rs. 324.00 lakhs
PA 400 – Ecotechnology	1999 – 07	NABARD Resource Centre for Precision farming and Poverty Alleviation	NATIONAL BANK FOR AGRICULTURE AND RURAL DEVELOPMENT (NABARD), MUMBAI	Indian Bank	Rs. 75.00 lakhs
PA 400 – Ecotechnology	2000 – 05	Livelihood Security, Information Empowerment & Sustainable Development Proposal-1: Sustainable Development through the Bio-village model of Poverty Eradication and Natural Resources Conservation	VOLKART STIFUNG, WINTERHUR	International Funding Agency	Rs. 30.00 lakhs
PA 400 – Ecotechnology	2001 -	Community Banking	FRIENDS OF MSSRF, TOKYO	International NGO	Rs. 48.41 lakhs
PA 400 – Ecotechnology	2001 – 03	Development of Open and Distance Learning Materials to Assisting Increasing Human Resource and Institutional Capacity among Communities in the Area of Sustainable Agriculture and Rural Development	THE COMMONWEALTH OF LEARNING, CANADA	International Funding Agency	Rs. 17.53 lakhs
PA 400 – Ecotechnology	2002 – 03	Localised Climate Forecasting system: Seasonal Climate and Weather Prediction for Farm Level Decision-Making	INTERNATIONAL START SECRETARIAT, WASHINGTON	International Funding Agency	Rs. 8.00 lakhs
PA 400 – Ecotechnology	2002 – 06	Use of Remote Sensing for Variable Rate Application Technology	SPACE APPLICATION CENTRE (ISRO), AHMEDABAD	Agency of Govt. of India	Rs. 5.90 lakhs
PA 400 – Ecotechnology	2003 – 07	Low cost biofertilizer production units at the village level as employment opportunities for rural women	DEPARTMENT OF BIOTECHNOLOGY	Agency of Govt. of India	Rs. 13.26 lakhs
PA 400 – Ecotechnology	2004 -	Community Banking	FRIENDS OF SWAMINATHAN, AUSTRALIA	International NGO	Rs. 27.41 lakhs

<b>Programme Area</b>	<b>Project Year</b>	<b>Project Title</b>	<b>FUNDING AGENCY</b>	<b>Classification/Nature of the Funder</b>	<b>Budget Amount</b>
PA 400 – Ecotechnology	2004 – 05	Acting as Facilitation Centre of CAPART	COUNCIL FOR ADVANCEMENT OF PEOPLES’ ACTION & RURAL TECHNOLOGY (CAPART), HYDERABAD	Agency of Govt. of India	Rs. 1.96 lakhs
PA 400 – Ecotechnology	2004 – 05	Community Managed ICT facilitated Literary Programme and Community Empowerment	UNITED NATIONS EDUCATIONAL, SCIENTIFIC AND CULTURAL ORGANISATION (UNESCO), THAILAND	Agency of UN	Rs. 27.00 lakhs
PA 400 – Ecotechnology	2004 – 07	Enhancing livelihood of rural poor and under-privileged SC / ST population through aquaculture complex activities in Orissa and Tamil Nadu	DEPARTMENT OF BIOTECHNOLOGY	Agency of Govt. of India	Rs. 27.91 lakhs
PA 400 – Ecotechnology	2004 – 07	Kodathur Biovillage	STATE BANK OF INDIA (SBI), CHENNAI	Indian Bank	Rs. 5.00 lakhs
PA 400 – Ecotechnology	2004 – 07	Linking ecopreneurship with poverty alleviation and livelihood security of weaker sections in Coastal villages of Puducherry, UT	DEPARTMENT OF BIOTECHNOLOGY	Agency of Govt. of India	Rs. 22.68 lakhs
PA 400 – Ecotechnology	2004 – 07	Preparing Charters -State Development Report of Puducherry	PLANNING COMMISSION, GOVERNMENT OF INDIA, NEW DELHI	Agency of Govt. of India	Rs. 4.00 lakhs
PA 400 – Ecotechnology	2004 – 07	Sesame Village	V.V. VANNIAPERUMAL & SONS, VIRUDHUNAGAR	Indian Private company	Rs. 2.70 lakhs
PA 400 – Ecotechnology	2005	Post Tsunami - Livelihood & Agronomic Rehabilitation	Tata Trust	Indian Funding Agency	Rs. 14.88 lakhs
PA 400 – Ecotechnology	2005	Post Tsunami - Livelihood & Agronomic Rehabilitation	MICROSOFT	MNC	Rs. 17.65 lakhs
PA 400 – Ecotechnology	2005 – 08	Improving the water quality through integrated biological control of Water hyacinth (Eichornia crassipes) using grass carp (Ctenopharyngodon idella) and weevil (Neochetina spp.) in the ponds of Cauvery tail end region, Tamil Nadu.	DEPARTMENT OF SCIENCE & TECHNOLOGY (DST), NEW DELHI	Agency of Govt. of India	Rs. 21.25 lakhs
PA 400 – Ecotechnology	2006 – 08	Front Line Demonstration	INDIAN COUNCIL OF AGRICULTURAL RESEARCH (ICAR)	Agency of Govt. of India	Rs. 1.00 lakhs

Programme Area	Project Year	Project Title	FUNDING AGENCY	Classification/Nature of the Funder	Budget Amount
PA 400 – Ecotechnology	2006 – 09	Integrated Management of Biodiversity Resources in Partnership with People: Innovative Models to reach Millennium Development Goal on Elimination of Hunger and Poverty	SWISS AGENCY FOR DEVELOPMENT AND COOPERATION	International Funding Agency	Rs. 340.00 lakhs
PA 400 – Ecotechnology	2006 -2008	Fish For All’ Building construction	JAMSETJI TATA TRUST	Indian Funding Agency	Rs. 267.00 lakhs
PA 400 – Ecotechnology	2007	“Tsunami 75”	OFFICE OF WATER FOR THE 3 <sup>RD</sup> WORLD-SWITZERLAND	International Funding Agency	Rs. 1.5 lakhs
PA 400 – Ecotechnology	2007	Screening for Bio molecules from Microbial Diversity Collected from Different Ecological Niches	DEPARTMENT OF BIOTECHNOLOGY	Agency of Govt. of India	Rs. 101.90 lakhs
PA 400 – Ecotechnology	2007 – 09	Strengthening livelihoods of small and marginal farmers in Organic farming of Lower Palani Hills	TIFAC, NEW DELHI	Agency of Govt. of India	Rs. 10.00 lakhs
PA 400 – Ecotechnology	2007 – 12	Community Managed Bio-industrial Watersheds for Sustainable Use of Natural Resources and Enhanced Livelihoods	JAMSETJI TATA TRUST	Indian Funding Agency	Rs. 995.00 lakhs
PA 400 – Ecotechnology	2007 -09	Designing Rural Technology Delivery Systems for Mitigating Agrarian Distress	OFFICE OF THE PRINCIPAL SCIENTIFIC ADVISER TO THE GOVERNMENT OF INDIA	Agency of Govt. of India	Rs. 35.70 lakhs
PA 400 – Ecotechnology	2008	Additional fund for Building construction	JAMSETJI TATA TRUST	Indian Funding Agency	Rs. 218.25 lakhs
PA 400 – Ecotechnology	2008-2010	Surveillance Insect Pest of Morindacitrifolia in west coast of Kerala & Karnataka	WORLD NONI RESEARCH FOUNDATION	Private NGO	Rs. 5.98 lakhs
PA 400 – Ecotechnology	2008-2011	Biocontrol of blast disease of finger millet using plant growth promoting Rhizobacteria (PGPR) with special reference to the functional and genetic diversity of Rhizospheric PGPRs	THE DEPARTMENT OF BIOTECHNOLOGY, GOVT. OF INDIA, NEW DELHI.	Agency of Govt. of India	Rs. 19.40 lakhs
PA 400 – Ecotechnology	2008-2011	Bioprospecting novel actinomycetes from the mangrove ecosystem for novel metabolites	THE DEPARTMENT OF BIOTECHNOLOGY, GOVT. OF INDIA, NEW DELHI.	Agency of Govt. of India	Rs. 101.94 lakhs
PA 400 – Ecotechnology	As on	JRD Corpus Enhancement	TATA TRUST	Indian Funding Agency	Rs. 1500.00 lakhs

Programme Area	Project Year	Project Title	FUNDING AGENCY	Classification/Nature of the Funder	Budget Amount
PA 500 – Food Security		Endowment Support	FORD FOUNDATION CHAIR FOR WOMEN & FOOD SECURITY	International Funding Agency	Rs 60 lakhs
PA 500 – Food Security		Endowment Support	B V RAO CENTRE FOR SUSTAINABLE FOOD SECURITY	Private Indian Company	Rs 120 lakhs
PA 500 – Food Security	1999-2001	Research on Mapping Food Security in Rural India	WORLD FOOD PROGRAMME	Agency of UN	Rs.16.50 lakhs
PA 500 – Food Security	2000-01	Community level Assessment of Food Security in Orissa	WORLD FOOD PROGRAMME	Agency of UN	Rs. 6.50 lakhs
PA 500 – Food Security	2001-02	Food Insecurity Atlas of Urban India	WORLD FOOD PROGRAMME	Agency of UN	Rs 32.00 lakhs
PA 500 – Food Security	2001-03	Designing and Promoting a Community Food Security Movement	RAMON MAGSAYSAY AWARD FOUNDATION	International Funding Agency	USD 10000
PA 500 – Food Security	2001-2002	Preparation of Reports on Food Security Situation in Madhya Pradesh and Rajasthan	WORLD FOOD PROGRAMME	Agency of UN	Rs. 5.00 lakhs
PA 500 – Food Security	2001-2004	Resource Centre for Community Food and feed Banks	WORLD FOOD PROGRAMME	Agency of UN	Rs.27.25 lakhs
PA 500 – Food Security	2002-04	Atlas of Sustainability of Food Security in India	WORLD FOOD PROGRAMME	Agency of UN	Rs.25.50 lakhs
PA 500 – Food Security	2002-04	Community Feedgrain Movement in Namakkal	VENKATESHWARA HATCHERIES GROUP	Indian Private company	Rs.10.00 lakhs
PA 500 – Food Security	2002-04	Community Food Security System	FRIENDS OF MSSRF, TOKYO	International NGO	Rs.3.59 lakhs
PA 500 – Food Security	2004	Dissemination Workshops on Hunger Free India	WORLD FOOD PROGRAMME	Agency of UN	Rs. 32.94 lakhs
PA 500 – Food Security	2004-05	Report on Hunger Hotspots in Asia Pacific Region	COLUMBIA EARTH INSTITUTE,	International Research Institute	Rs. 4.75 lakhs
PA 500 – Food Security	2004-2008	Training in Post harvest technology and Fruit Processing in Ladakh	SIR DORABJI TATA TRUST	Indian Funding Agency	Rs 10 lakhs
PA 500 – Food Security	2005	Paper on Micronutrient Malnutrition Situation in India	MICRONUTRIENT INITIATIVE, CANADA	International Funding Agency	Rs. 5.00 lakhs
PA 500 – Food Security	2005 – 10	Technical Resource Centre for Food Security	WORLD FOOD PROGRAMME	Agency of UN	Rs. 91.80 lakhs
PA 500 – Food Security	2005-06	Report on Food Security in Cambodia	WORLD FOOD PROGRAMME, CAMBODIA,	Agency of UN	Rs.24.01 lakhs
PA 500 – Food Security	2006-2008	Role of Markets in Sustainable Utilization of Crop Genetic Resources – A Case Study of Minor Millets in Kolli Hills and Dharmapuri	FAO	Agency of UN	USD 74,016

Programme Area	Project Year	Project Title	FUNDING AGENCY	Classification/Nature of the Funder	Budget Amount
PA 500 – Food Security	2006-2008	Role of Markets in Sustainable Utilization of Crop Genetic Resources – A Case Study of Minor Millets in Kolli Hills and Dharmapuri	IFPRI	Agency of UN	USD 15000
PA 500 – Food Security	2007 – 10	Project on Strengthening Livelihoods through Improved use and marketing of underutilized species, Phase II Implementation in Kolli Hills and Jeypore; plus co-ordination of activities in other three other centres by designated institutions	INTERNATIONAL FUND FOR AGRICULTURAL DEVELOPMENT	International Funding Agency	USD 261000
PA 500 – Food Security	June 2006	Education Support Programme for children of Farmer Suicide Families in Wardha	PROFESSOR SWAMINATHAN AND FRIENDS OF MSSRF, TOKYO	Individual & International NGO	Rs.12.75 lakhs
PA 500 – Food Security	November 2007	Mahila Sashaktikaran Pariyojana	FORD FOUNDATION ENDOWMENT	International Funding Agency	Rs.15 lakhs
PA 500 – Food Security	November 2007	Mahila Sashaktikaran Pariyojana	FRIENDS OF SWAMINATHAN IN AUSTRALIA	International NGO	Rs 15 lakhs
PA 500 – Food Security	Sept 2008 – August 2009	Case Study of Institutional Feeding Programmes and their possible linkage with smallholder farmers for sourcing of foodstuffs	GATES FOUNDATION	International NGO	USD 63894
PA 500 – Food Security	since Dec 2008	Endowment Support	UTTARA DEVI RESOURCE CENTRE FOR GENDER & DEVELOPMENT	Indian Private company	Rs 45 lakhs
PA 600 – Information, Education and Communication	01.09.2008 to 31.08.2009	Grameen Gyan Abhiyan	SWISS AGENCY FOR DEVELOPMENT AND COOPERATION (SDC)	International Funding Agency	Rs.34.25 lakhs
PA 600 – Information, Education and Communication	2007-2009	Establishment of Regional R Agency for DNA club (DEPARTMENT OF BIOTECHNOLOGY'S natural resource awareness)	DEPARTMENT OF BIOTECHNOLOGY	Agency of Govt. of India	Rs. 160.00 lakhs
PA 600 – Information, Education and Communication	8 December 1995 to 15 September 1997	Development of Farmer-Centred Agricultural Resource Management Programme (FARM) / Food and Agricultural Organization (FAO) Multimedia Database	FOOD AND AGRICULTURAL ORGANIZATION	Agency of UN	USD 8,000

<b>Programme Area</b>	<b>Project Year</b>	<b>Project Title</b>	<b>FUNDING AGENCY</b>	<b>Classification/Nature of the Funder</b>	<b>Budget Amount</b>
PA 600 – Information, Education and Communication	December 1998 – March 2001.	Develop Global Mangrove Database and Information System (GLOMIS)	THE INTERNATIONAL SOCIETY FOR MANGROVE ECOSYSTEMS (ISME)	International Association	USD 60,000
PA 600 – Information, Education and Communication	December 2000	Digitizing of SCOPE (Scientific Committee on Problems the Environment), France volumes into HTML format.	SCOPE	International Association	USD 10,000
PA 600 – Information, Education and Communication	December 2005	Intel Learn Programme	INTEL	MNC	Rs.15 lakhs
PA 600 – Information, Education and Communication	February 2005	Unlimited Potential and software	MICROSOFT	MNC	USD 108,000
PA 600 – Information, Education and Communication	February 2005	Using ICT for Improved Livelihood and Community Based Disaster Preparedness in Tsunami Affected Coastal Villages in Pondicherry	CANADIAN INTERNATIONAL DEVELOPMENT AGENCY (CIDA)	International Funding Agency	Rs.17.34 lakhs
PA 600 – Information, Education and Communication	February 25, 2005	Endowment Grant Support for Jamsetji Tata National Virtual Academy and support the secretariat of “Mission 2007: Every Village a Knowledge Centre”	TATA EDUCATION TRUST	Indian Funding Agency	Rs.1000 lakhs
PA 600 – Information, Education and Communication	January 2001 – March 2004	Impact of Information Technology in Rural Areas – India,	INTERNATIONAL DEVELOPMENT RESEARCH CENTRE (IDRC)	International Funding Agency	CAD 287,000
PA 600 – Information, Education and Communication	January 2006	Participatory Knowledge Management Workshop for Jamsetji Tata National Virtual Academy (NVA), MANAGE	ITC LTD., INTERNATIONAL BUSINESS DIVISION	Indian Private Company	Rs.0.85 lakhs
PA 600 – Information, Education and Communication	January 2007	30 new Community Technology Learning Centres in the states of Tamilnadu, Maharashtra and Pondicherry	MICROSOFT	MNC	Rs.9,426,900/-.
PA 600 – Information, Education and Communication	January 2008	Mission 2007 Rural Innovation Fund	MICROSOFT	MNC	Rs.14.,91 lakhs

Programme Area	Project Year	Project Title	FUNDING AGENCY	Classification/Nature of the Funder	Budget Amount
PA 600 – Information, Education and Communication	June 2006,	supplementary grant for supporting Mission 2007 secretariat	IDRC	International Funding Agency	Rs.43.43 lakhs
PA 600 – Information, Education and Communication	March 2005.	one Village Resource Centre (VRC) and eight Village Knowledge Centres (VKCs) in Tsunami Affected areas	TATA RELIEF COMMITTEE (TRC)	Indian Funding Agency	Rs.35 lakhs
PA 600 – Information, Education and Communication	March 2006	Organizing training and education rehabilitation programmes in the Vidarbha regions of Maharashtra through the creation of Village Resource Centres (VRCs) in 5 districts in the region	JAMSETJI TATA TRUST	Indian Funding Agency	Rs.117 lakhs
PA 600 – Information, Education and Communication	March 2006	Strengthening Resilience in Tsunami-affected Communities in India and Sri Lanka	INTERNATIONAL DEVELOPMENT RESEARCH CENTRE (IDRC) AND CANADIAN INTERNATIONAL DEVELOPMENT AGENCY (CIDA).	International Funding Agency	Rs. 1.2 crores for Village Resource Centre
PA 600 – Information, Education and Communication	March 2006	Strengthening Resilience in Tsunami-affected Communities in India and Sri Lanka	INTERNATIONAL DEVELOPMENT RESEARCH CENTRE (IDRC) AND CANADIAN INTERNATIONAL DEVELOPMENT AGENCY (CIDA).	International Funding Agency	Rs. 1.2 crores for Village Resource Centre
PA 600 – Information, Education and Communication	March 2007	Support for Mission 2007: Every Village a Knowledge Centre Secretariat	SWISS AGENCY FOR DEVELOPMENT AND COOPERATION (SDC)	International Funding Agency	Rs.44.13 lakhs
PA 600 – Information, Education and Communication	May 2004 - 2009	Impact of ICTs on Poverty Alleviation in Rural Pondicherry, India (Phase III),	INTERNATIONAL DEVELOPMENT RESEARCH CENTRE (IDRC)	International Funding Agency	Rs.16.76 lakhs
PA 600 – Information, Education and Communication	November 1997 – October 2000	Impact of Information Technology in Rural Areas – India	INTERNATIONAL DEVELOPMENT RESEARCH CENTRE (IDRC), CANADA	International Funding Agency	CAD 214,120.
PA 600 – Information, Education and Communication	November 2003 to 30 September 2005	Open Knowledge Network (OKN)	ONEWORLD INTERNATIONAL, LONDON	International Funding Agency	Rs.45 lakhs



<b>Programme Area</b>	<b>Project Year</b>	<b>Project Title</b>	<b>FUNDING AGENCY</b>	<b>Classification/Nature of the Funder</b>	<b>Budget Amount</b>
PA 600 – Information, Education and Communication	October 2005	Setting up of two Village Resource Centres (VRC) and 15 Village Knowledge Centres (VKCs) in Tsunami Affected areas	NASSCOM FOUNDATION	Indian NGO	Rs.20 lakhs
PA 600 – Information, Education and Communication	October 2007	Mission 2007 Rural Innovation Fund	INTERNATIONAL DEVELOPMENT RESEARCH CENTRE (IDRC	International Funding Agency	Rs.38.35 lakhs
PA 600 – Information, Education and Communication	September 2004.	Setting up of Village Resource Centres in Tamilnadu.	INDIAN SPACE RESEARCH ORGANIZATION	Agency of Govt. of India	Rs.45 lakhs
PA 600 – Information, Education and Communication	September 2007	“Fisher Friend Mobile Application”	QUALCOMM	MNC	Rs.14.44 lakhs
PA 600 – Information, Education and Communication	September 2008	Academy: India – Enhancing the capacity of telecentre managers through the telecentre.org – Jamsetji Tata Training School (JTS	TELECENTRE.ORG, IDRC	International Funding Agency	Rs.68 lakhs

## Annexure - 6

### International and National Workshops and Conferences hosted by MSSRF (1990-2008)

#### *International Conferences*

**1990 – 1991**

Date	Event title	Supported by
Jan 15 – 19, 1991	Project Design workshop for the purpose of establishing a global network of Genetic Resources Centres for adaptation to Climatic change	International Tropical Timber Organisation
Jan 22 – 26, 1991	Dialogue Series on New Technologies – Reaching the Unreached I. Biotechnology	Keystone Foundation, USA

**1991 – 1992**

Date	Event title	Supported by
Sep 11, 1991	Meeting of the Indian Awardees of the Ramon Magsaysay Award	The Ramon Magsaysay Award Foundation (RMAF), Philippines
Oct 7 – 9, 1991	CASAFA Workshop on Sustainable Management of Coastal Ecosystems	Anna University
Oct 7 – 9, 1991	CASAFA – Committee on the Application of Sciences to Agriculture, Forestry and Aquaculture. Established by International Council of Scientific Unions (ICSU) in 1978.	IDRC, INSA
Nov 21 – 22, 1991	Project Design Workshop on Genetic Resources for Sustainable Agriculture	
Jan 15 – 18, 1992	International Conference on Environmentally Sound Coal Technologies: Policy Issues and Technological Options	UN Centre for Science and Technology for Development, New York; Ministry of Env. and Forests, GoI; Anna University; MSSRF
Jan 20 – 23,	International Dialogue on New Technologies:	IDRC

1992	Reaching the Unreached II. Information Sciences and Technology	
May 7, 1992	Discussion Meeting on Applications of Recent Developments in Biotechnology in Developing Countries	Biofocus Foundation, Maastricht, Holland

## 1992 – 1993

Date	Event title	Supported by
Oct – Nov 1992; Apr 1993	Travelling Workshops in the ASEAN Countries and in West and Central Africa	IDRC – CIDA
Nov 30 – Dec 2, 1992	World Food Production by Means of Sustainable Agriculture: The Role of Crop Protection	Ciba Foundation, London & CRSARD
Dec 19 – 20, 1992; Jan 16 – 18, 1993	Policy Makers' Workshops on Conservation and Sustainable Management of Biological Diversity	UNESCO DOEF
Apr 12 – 15, 1993	International Dialogue on New Technologies: Reaching the Unreached. III. Ecotechnology and Rural Employment	CRSARD CAPART, SSF
Apr 30 – May 1, 1993	Project Design Workshop for the Establishment of a Network of Mangrove Forest Genetic Resources Centres in West and Central Africa (Dakar, Senegal)	ITTO – CRSARD  Co hosted by the Senegal Institute for Agricultural Research (ISRA)

## 1993 – 1994

Date	Event title	Supported by
Dec 17, 1993	Symposium on Inventorying and Monitoring of Biodiversity with Special Reference to Mangrove Ecosystems	International Agriculture Training Programme, UK
Mar 6 – 10, 1994	Second Asia-Pacific Conference on Agricultural Biotechnology	MSSRF NAAS, Rockefeller Foundation, FAO

**1994 – 1995**

<b>Date</b>	<b>Event title</b>	<b>Supported by</b>
Aug 12 – 13, 1994	Workshop on Strategies for Sustainable Rural Livelihood and Household Nutrition Security Systems in the Asia-Pacific	UNDP
Jan 30 – Feb 2, 1995	Dialogue on A New Deal for the Self-employed: Role of Credit, Technology and Public Policy	MSSRF Supported by UNDP, UNESCO, CAPART and the Reserve Bank of India
Feb 25 – 28, 1995	Workshop on Integrated Intensive Farming systems in the Asia-Pacific Region	MSSRF with the support of FAO

**1995 – 1996**

<b>Date</b>	<b>Event title</b>	<b>Supported by</b>
Dec 4 – 6, 1995	Impact of Climate Change on Food and Livelihood Security: An Agenda for Action	Co-sponsored by MSSRF and the Climate Institute, Washington DC, USA
Jan 15 – 18, 1996	Agrobiodiversity and Farmers' Rights: Technical Consultation on an Implementation Framework for Farmers' Rights	MSSRF with support of FAO and SIDA
Feb 4 – 8, 1996	Asian Regional Workshop on Ecotechnology and Shaping the Future	UNESCO Honda Foundation IFAD
Jul 8 – 11, 1996	Science Academies Summit: Uncommon Opportunities for a Secure World	MSSRF co-sponsored by the National Academy of Agricultural Sciences of India, the Italian National Science Academy and the Third World Academy of Sciences

**1996 – 1997**

<b>Date</b>	<b>Event title</b>	<b>Supported by</b>
Jul 8 – 11, 1996	World Science Academies Summit on Food Security	NAAS, Italian National Science Academy and the Third World Academy of Sciences; financial support by the Govt. of Italy, the FAO, the UNDP and the Encyclopaedia of Life Support Systems.
Aug 18 – 20, 1996	Workshop on Biovillages for Biodiversity Conservation and Eco-development	Support by UNESCO
Dec 17 – 19, 1996	Women in S&T and S&T for Women (Meeting of the Resource group of Women Scientists and Technologists in the Asia-Pacific Region)	The UNDP, the UNIFEM
Feb 3 – 6, 1997	Inter-disciplinary Dialogue on Reaching the Unreached: Building partnerships for sustainable Food and Livelihood Security	Foundation with financial support from the UNDP and NABARD, India

**1997 – 1998**

<b>Date</b>	<b>Event title</b>	<b>Supported by</b>
Jul 21 – 22, 1997	Asia-Pacific Workshop on Biosafety: Environmental Impact Analysis of Transgenic Plants	DBT, GoI, Animal and Plant Health Inspection Service (APHIS), USDA and Cornell University, USA
Dec 15 – 17, 1997	SAARC Workshop on the Conservation and Sustainable Management of Coral Reefs	Co-sponsored by the FAO/Bay of Bengal Programme
Jan 28 – 31, 1998	Inter-disciplinary Dialogue on Malthus and Mendel: Population, Science and Sustainable Food Security	NAAS, XV Genetic Congress Trust, DBT, DST, NABARD
Feb 22 – 25, 1998	South and Southeast Asia Regional Workshop on Access to Genetic Resources and Traditional Knowledge	Collaboration with the World Conservation Union (ICUN)

**1998 – 1999**

<b>Date</b>	<b>Event title</b>	<b>Supported by</b>
Sep 21, 1998	Workshop on Sustainable Forestry Practices	Iwokrama International Rainforest Centre, Guyana
Sep 30, 1998	Discussion Meeting on Traditional Knowledge, Innovations and Culture of Indigenous People, Local Communities and other Holders of Traditional Knowledge and Culture	In Association with the South Asian Fact Finding Mission of the World Intellectual Property Organisation
Nov 23 – 24, 1998	Workshop on Ending Malnutrition in India by 2020	
Dec 10 – 11, 1998	Workshop on Sustainable Livelihoods and Environment Management of Coastal Ecosystems – in Observance of the International Year of the Ocean	Jointly organized with the FAO Bay of Bengal Programme and the India Operational Centre of International Ocean Institute
Feb 3 – 6, 1999	Annual Interdisciplinary Dialogue Series: Climate, Biotechnology and Food and Water Security	With the support of World Water Vision for the 21 <sup>st</sup> Century and Housing and Urban Development Corporation – HUDCO
Feb 17 – 19, 1999	Consultation on Enlarging the Basis of Food Security: Role of Under-utilised Species	IPGRI
Apr 7 – 9, 1999	Consultation on “Towards a Hunger-Free World: The Final Milestone”	Organised with Global Hunger Project, The Hunger Project, India and Tamilnadu Council for Sustainable Livelihoods

**1999 – 2000**

<b>Date</b>	<b>Event title</b>	<b>Supported by</b>
Dec 11 – 18, 1999	Travelling Workshop on Ecotechnology in Tropical Monsoon Asia: a comparative study of Mekong Delta (Vietnam) and the Kaveri Delta (India)	Centre for South East Asian Studies, Kyoto University; Mekong Delta Institute; University of Can Tho
Dec 19 –20, 1999	Knowledge technologies for the Small Farmer in South and Southeast Asia	MSSRF, Science Committee on Problems of the Environment
Jun 22 –24, 2000	Project Design Workshop on Integrated Natural Resource Management for Food Security and Enhancement of Environment Quality	Jointly organized with the Sir Dorabji Tata Trust and the Ohio State University
Jun 28 – 30, 2000	Project Design Workshop on Benefit Sharing under Provisions of the Convention on Biological Diversity	Supported by Global Environment Facility

**2000 – 2001**

<b>Date</b>	<b>Event title</b>	<b>Supported by</b>
Aug 2 – 5, 2000	LEAD – MSSRF workshop on Intellectual Property Rights and Human Well being	LEAD International Inc., USA
Dec 2 – 5, 2000	CABI Bioscience, UK – MSSRF Conference on Management of Alien Invasive Species	The Barwale Chair in collaboration with CABI Bioscience, UK
Jan 18 –20, 2001	Tenth Interdisciplinary Dialogue in the series “New Technologies for Reaching the Unreached” – Information and Communication Technologies for Poverty Eradication	Dept of Space, NABARD, SBT, CAPART

**2001 – 2002**

<b>Date</b>	<b>Event title</b>	<b>Supported by</b>
Jun 25 – 28, 2001	Expert Consultation on Science for Sustainable Food Security, Nutritional Adequacy and Poverty Alleviation in the Asia Pacific Region - Bangkok	In collaboration with the FAO Regional Office for Asia and the Pacific

Sep 18 – 20, 2001	Knowledge Management and Knowledge Sharing for International Development: Asia Workshop	In collaboration with Bellanet, Canada on Knowledge Management (KM) and Sharing
Jan 21 – 23, 2002	MSSRF – FAO Expert Committee Consultation on Implementing Farmers’ Rights for Conservation and Utilisation of Plant Genetic Resources in the Asia-Pacific Region: from Legislation to Action	In collaboration with FAO, Rome

**2002 – 2003**

<b>Date</b>	<b>Event title</b>	<b>Supported by</b>
Jul 16 –19, 2002	International Workshop on Forest Science and Forest Policy in the Asia-Pacific Region: Building Bridges to a sustainable future	Sponsored by the USDA Forest Service, with support from Seoul National University, CIFOR and FRIM.
Oct 21 – 28, 2002	ICT Enabled Development: South Exchange through Travelling Workshop	JRD Tata Ecotechnology Centre and the Informatics, with the support of the Humanist Institute for Cooperation with Developing Countries, IICD and IDRC of Canada
Dec 2 –4, 2002	Consultation on Peace, Freedom from Hunger and Sustainable Development: The Ethical Dimensions	With the support from the IFAD
Jan 9 – 12, 2003	Annual Dialogue on The Legacy of Watson and Crick: Biotechnology for Food, Health, Nutrition and Water Security	MAHYCO, XV Genetic Congress Trust, CSIR, Syngenta Foundation
Mar 3 – 7, 2003	30 <sup>th</sup> Annual Session of the United Nations Standing Committee on Nutrition (UNSCN)	UN System Standing Committee on Nutrition



**2003 – 2004**

<b>Date</b>	<b>Event title</b>	<b>Supported by</b>
Oct 8 – 9, 2003	ICT Policy-Makers Workshop – Rural Knowledge Centres: Harnessing Local Language via Interactive Media	IDRC
Oct 30 – Nov 6, 2003	Workshop on ICT-enabled development: South-South Exchange through Travelling Workshop	Global Knowledge Partnership Secretariat
Feb 4 – 5, 2004	National Food Security Summit, New Delhi	MSSRF and WFP
March 9 – 11, 2004	MSSRF – World Youth Bank Regional Conference on Adequate Food for All	Support from the UN Interagency Group on Rural development, Food Security and Nutrition, Soka Gakkai International, Japan, International Food Policy Research Institute, USA and Science City, Chennai

**2004 – 2005**

<b>Date</b>	<b>Event title</b>	<b>Supported by</b>
Oct 15 – 22, 2004	Workshop on ICT enabled development: South-South Exchange through Travelling Workshop	Global Knowledge Partnership Secretariat
Nov 17 – 19, 2004	Workshop on Up-scaling prop-poor ICT policies and practices	SDC, GKP, One World South Asia and UNDP
Nov 20 – 22, 2004	Symposium on Uncommon opportunities – A Roadmap to Peace, Employment and Food Security, New Delhi	WFP, NCF, International Commission on Peace and Development, and Mother's Service Society, Pondicherry
Dec 1 – 3, 2004	Workshop on Learning from ICT for Rural Development Projects In Asia	MSSRF and IDRC
Mar 7 – 10,	Inter-disciplinary Dialogue on Biotechnology and	National Commission

2005	Organic Farming	for Farmers, XV Genetic Congress Trust
Mar 11 –13, 2005	Nanobiotechnology: Implications for food, health and nutrition security	IFPRI and MSSRF
Apr 18 –19, 2005	UN Millennium Development Goals- Five years later: Agricultural Biodiversity and Elimination of Hunger and Poverty	IPGRI and the Global Facilitation Unit for Underutilised Species in association with other partners

**2005 – 2006**

<b>Date</b>	<b>Event title</b>	<b>Supported by</b>
Aug 22 –26, 2005	International Workshop on Molecular Markers for Allele Mining	In collaboration with the Generation Challenge Programme of CGIAR
Nov 28 – Dec 5, 2005	Workshop on ICT-enabled development: South-South Exchange through Travelling Workshop	GKP, HIVOS, IICD, IDRC
Feb 13 –14, 2006	Interactive Workshop on Crop Biofortification for alleviating micronutrient malnutrition	HarvestPlus and DBT, GoI
Apr 7 –9, 2006	5 <sup>th</sup> Pugwash Conference on HIV/AIDS: Sharing of Experiences, What works?	WFP, ICMR, NACO, Bil and Melinda Gates Foundation, UNDP

**2006 – 2007**

<b>Date</b>	<b>Event title</b>	<b>Supported by</b>
Dec 10 –18, 2006	Travelling Workshop on Pro-poor, Pro-Women Use of Information and Communication Technologies for Social Development	Global Knowledge Partnership
Jan 29 – Feb 1, 2007	Consultation on Food Insecurity: A Great Threat to Human Security	In collaboration with International Young Student Pugwash, with support from WFP, IFPRI, SDC, UNDP and UN Foundation

**2007 – 2008**

<b>Date</b>	<b>Event title</b>	<b>Supported by</b>
Aug 7 – 9, 2007	Annual Dialogue on Bread and Biotechnology	The Pugwash Conferences on Science and World Affairs and MSSRF
Feb 4 –11, 2008	Study tour of 25 Nenasala operators on knowledge and experience sharing mission	IDRC
Feb 11, 2008	Workshop on Role of ICT in the management of Climate change at the Grassroots Level	SDC
Apr 19- 21, 2008	Annual Interdisciplinary dialogue on Community Management of Climate Change: Role of Panchayats & Nagarpalikas	MSSRF- SDC, NewDelhi

***National Conferences*****1992 – 1993**

<b>Date</b>	<b>Event title</b>	<b>Supported by</b>
Oct 16, 17, 1992	Establishment of Information Villages: An Orientation Workshop	MSSRF
Dec 23, 1992	Seminar on Structural Adjustment Policy and the Child in India	GoI

**1993 – 1994**

<b>Date</b>	<b>Event title</b>	<b>Supported by</b>
Aug 11, 1993	A One day meeting “Community participation in mosquito control”	MSSRF
Oct 17, 1993	A day long workshop to coincide with the dedication of a hall in honour of Mr Ramakrishna Bajaj	MSSRF
Jan 6, 1994	First Bhoothalingam Memorial Lecture on “Sowing the Seeds in Time: India’s Future”	MSSRF
Jan 27, 1994	Dedication of Community Gene Bank in honour of Prof G T Scarascia Mugnozza	MSSRF

Dec 18 – 19, 1993	National Biodiversity Alliance  Launch of “Conservation Action – 1994”	XV Genetic Congress Trust, New Delhi
Feb 7 – 9, 1994	Policy Makers’ Workshops on Conservation and Sustainable Management of Biological Diversity in the North Eastern Region	Ministry of Env. and Forests, GoI
Jan 28 – 31, 1994	Inter-Disciplinary Dialogue on Methodologies for Recognising and Rewarding Informal Innovation in the Conservation and Utilisation of Plant Genetic Resources	MSSRF

**1994 – 1995**

<b>Date</b>	<b>Event title</b>	<b>Supported by</b>
June 13 – 14, 1994	Workshop on Women, Biodiversity and Seed Industry	MSSRF With support of National Commission for Women, the National Foundation for India, the International Federation for Women in Agriculture and the UNDP
Jun 30, 1994	Workshop on the role of information technology in the changing economic environment in India	MSSRF and the Ranganathan Centre for Information Studies, Madras
Dec 21 – 22, 1994	Workshop on finalising the common format for a Community Register	MSSRF with the support of CAPART, New Delhi
Jan 9 – 10, 1995	National Workshop on transfer of technology for sustainable shrimp farming	MSSRF, Central Institute of Brackishwater Aquaculture, the Union Ministry of Agriculture and the Marine Products Export Development Authority

**1995 – 1996**

<b>Date</b>	<b>Event title</b>	<b>Supported by</b>
Feb 6 – 9, 1996	<i>Kulavai: An Affirmation</i>	MSSRF's Voicing Silence theatre group
Nov 27 – Dec 11, 1995	<i>Training Programme on Yeast Genetic Manipulation and Molecular Markers</i>	MSSRF's Molecular Biology group; financial support from the Dept. of Biotechnology, GoI
Oct 6 – 8, 1995	<i>Workshop for Women Quarry Workers of Pudukottai</i>	With the help of Arivoli Iyakkam

**1996 – 1997**

<b>Date</b>	<b>Event title</b>	<b>Supported by</b>
Jan 9 – 10, 1997	Securing the Future: National Consultation on Medicinal Plants	support of Ministry of Env. and Forests, New Delhi and the Foundation for the Revitalisation of Local Health Traditions, Bangalore
Jan 28 – 30, 1997	Workshop on Training and Design of the Project "Empowerment of Grassroot Democratic Institutions in Micro-level Planning: Preparation of Socio-Demographic Charters"	Population Council of India
Dec 30, 1996	A Seminar by Prof Krishnaswami Alladi (University of Florida, USA) on the contemporary research along the lines of Srinivasa Ramanujan's mathematics.	MSSRF

**1997 – 1998**

<b>Date</b>	<b>Event title</b>	<b>Supported by</b>
Dec 3 – 4, 1997	National Workshop on Technological Empowerment	MSSRF, co-sponsored by the National Commission for Women
Jan 21 – 23,	Symposium on Induced Mutations and Molecular	DAE sponsor

1998	Techniques in improving Crop Productivity and Quality	
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**1998 – 1999**

<b>Date</b>	<b>Event title</b>	<b>Supported by</b>
Aug 10 – 17, 1998	National Level Training Programme on Participatory Assessment and Planning for Natural Resource Management and Community Development	FAO, UNDP
Jan 6 – 7, 1999	National Consultation on Genetically Modified Organisms: Implications for Environment, Food Security and Human Nutrition	ISCA

**1999 – 2000**

<b>Date</b>	<b>Event title</b>	<b>Supported by</b>
Jul 26, 1999	Technical Consultation on Integrated Natural Resources Management in Coastal Areas	Foundation in collaboration with the Nuclear Power Corporation of India
Nov 29 – Dec 1, 1999	National Workshop on Biovillages	With support from the UNDP, Govt. of India & Govt. of Pondicherry
Feb 17 – 18, 2000	Dialogue on Biovillages and Community Banking	MORD
Feb 18, 2000	National Consultation on Application of DNA Markers for Crop improvement: Issues and Perspectives	XV Genetic Congress Trust

**2000 – 2001**

<b>Date</b>	<b>Event title</b>	<b>Supported by</b>
Aug 3 – 4, 2000	NISSAT – MSSRF Workshop on Intellectual Property Rights and Food Security	National Information System for Science and Technology (NISSAT), Dept. of Scientific and Industrial Research

		(DSIR)
Aug 28, 2000	Workshop on Green Belting and Eco-development in Kudankulam	DAE
Nov 25, 2000	Workshop on Biovillage Programme: Extending the Biovillage Concept to all the Villages of Pondicherry	IFAD
Jan 23 – 25, 2001	Project Design Workshop on Enhancing the contribution of Neglected and underutilized Species to Food Security and to incomes of the Rural poor.	The Barwale Chair, supported by the International Plant Genetic Resources Institute (IPGRI), Rome, International Fund for Agricultural Development (IFAD), Rome, and the International Development Research Centre (Food Links Initiative), Canada
Apr 24 – 26, 2001	National Consultation on “Towards Hunger Free India” & Release of Food Insecurity Atlas of Rural India”	Planning Commission, GoI; WFP
May 2, 2001	Convocation for Members of the Community Agro-biodiversity Conservation Corps (ACC)	The Royal Embassy of the Netherlands

### 2001 – 2002

Date	Event title	Supported by
Jun 18 – 19, 2001	National Consultation on Community Food Grain Banks for Local Food Security	WFP
Jun 30, 2001	Consultation on Animal Feeds, with Special Reference to Maize, Soybean and Minor Millets	FAO
Jun 29, 2001	National Workshop on Alleviating Micronutrient Deficiency: Role of Horticulture and Home Gardens	In collaboration with the FAO office in India
Nov 24 – 26, 2001	Policy Makers Workshop on Farmers’ Rights: From Legislation to Action and Conservation of Kerala’s Bioresources	
Dec 4 – 5,	Brainstorming Session on Operationalisation of Policy	Ministry of

2001	Framework for Agricultural Extension during Tenth Plan Period	Agriculture
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**2002 – 2003**

<b>Date</b>	<b>Event title</b>	<b>Supported by</b>
Jun 3, 2002	Seminar on Enlarging Agroprocessing, Agri-business and Agri exports: Role of Agri-clinics and Agri business Centres	NABARD, SFAC, SBIRD, APEDA, MANAGE
Oct 23, 2002	National Consultation on “Towards Hunger Free India” & Release of Food Insecurity Atlas of Urban India”	WFP
Mar 3, 2003	Consultation on Towards Malnutrition Free TamilNadu	Support of the UNICEF and the Dept. of Women and Child Development, Govt. of Tamil Nadu
Apr 4 – 5, 2003	Consultation on Towards Hunger-free India – Countdown from 2007	WFP, FAO
May 8 –27, 2003	Vacation Training Programme for School Children on Bio-resources and Biotechnology	Financial support from NBDB and DBT
May 16, 2003	India Consultation on Evergreen Revolution, based on the findings of the Report: Human Development in South Asia 2002: Agriculture and Rural Development	The UNDP
Sep 30, 2003	Towards Food Security of Jammu & Kashmir	WFP & Govt. of J&K

**2003 – 2004**

<b>Date</b>	<b>Event title</b>	<b>Supported by</b>
Dec 1, 2003	Workshop on Poultry Feed, Crop Management and Marketing (18 September 2003) and Expert Meeting on Poultry Feed Crop Area Expansion and Marketing, Namakkal	Venkateshwara Hatcheries Ltd., Namakkal Poultry Growers Association
Oct 27 – 28, 2003	National Workshop on Science and Technology for Sustainable Water Security in India	In collaboration with the office of the Principal Scientific Advisor to the GoI and the Confederation of Indian Industry



Nov 6 –9, 2003	13th Swadeshi Science Congress, Kalpetta	the Swadeshi Science Movement and local sponsors
Nov 24, 2003	National Consultation on Food Parks, AgriBusiness and Quality Literacy	Ministry of Food Processing, APEDA, IOB
Nov 28, 2003	Workshop on Community Food Banks for Food Security, Koraput	WFP
Dec 17 – 18, 2003	Fish for All: National Launch, Kolkata	World Fish Centre, Malaysia; Govt. of West Bengal, GoI; TIFAC, NABARD, CSIR, Dept of Animal Husbandry & Dairying; The Marine Products Export Development Authority, Kochi
Mar 1 –2, 2004	Workshop on Conservation of Rice Biodiversity, Jeypore	MSSRF in collaboration with the district administration of Koraput
Mar 12 – 13, 2004	National Colloquium on Molecular Breeding and Shaping the Future of Rice	FAO of the UN, DBT, GoI, XV Genetic Congress Trust and the Mahyco Research Foundation
May 2 –4, 6 –8, 2004	Workshops on Open Access	MSSRF Bioinformatics Centre, sponsored by CSIR, British Council, Open Society Institute and IDRC
May 19 –20, 2004	Jamsetji Nusserwanji Tata Consultation on forming a National Alliance for Agenda 2007: “Every Village a Knowledge Centre”	One World International Inc., UK, Tata Trust

**2004 – 2005**

<b>Date</b>	<b>Event title</b>	<b>Supported by</b>
Aug 4 – 5, 2004	Agenda for National Happiness	MSSRF
Aug 20 – 21, 2004	Medicinal and Aromatic Rices of Kerala	National Medicinal Plants Board, Kerala Agriculture University
Aug 22 –23, 2004	Interactive Workshop on Crop Biofortification for Alleviating Micronutrient Malnutrition	DBT
Sep 2 – 3, 2004	Gender Concerns and Food Security issues in Rice Livelihood system in India	Planning Commission, GoI and WFP
Sep 4, 2004	Farmers' Distress: Causes and Cures	In collaboration with the NCF
Nov 5 -6, 2004	Rice Heritage of the NE: Challenges, Opportunities and Strategies	ICAR, Rescomplex for NE Hill Region
Jan 10, 2005	Beyond Tsunami: Saving Lives and Livelihoods	NCF
Apr 2, 2005	Beyond Tsunami: Significance of the Dandi March	NCF
Apr 26 –27, 2005	Science-Society Interface on Tribals and Biodiversity Related Legislation, Calicut	CABC Wayanad in collaboration with the Kerala Institute for Research and Development Studies (KIRTADS)
May 13 –14, 2005	Consultation on Post-Disaster management and Prevention Strategies	IDRC
Jun 9, 2005	National Consultation on the Role of Panchayati Raj Institutions in Spearheading a Rural Knowledge Revolution	NCF, Gandhigram Rural Institute and Microsoft Unlimited Potential Programme

**2005 – 2006**

<b>Date</b>	<b>Event title</b>	<b>Supported by</b>
Jun 19, 2005	Workshop on National Food Guarantee Act	WFP
Jul 16 – 19, 2005	Travelling Workshop on Agronomic Rehabilitation of Tsunami Ravaged Lands in TamilNadu – Nagapattinam, Cuddalore	NCF
Nov 11 –12, 2005	Women in Agriculture in India – What Next?	FAO
Nov 18 –19, 2005	Ten Years after Beijing: Gender, Science and Technology – New Delhi	Supported by UNDP, Govt. of NCT of Delhi, and Dept. of Women and Child Development, GoI, NAAS
Nov 23-24, 2005	NGO Workshop on Bioshield Development and Management	MSSRF
Dec 6, 2005	National Symposium on Biodiversity	MSSRF
Jan 5, 2006	National Virtual Congress of Farmers – Hyderabad	ISRO, ISCA
Jan 19 – 21, 2006	Workshop on Mangrove Bioshield for NGOs and Grassroot Level Institutions - Karaikal	National Academy of Sciences, Allahabad
Mar 17 –18, 2006	Panchayat Raj Institutions (PRIs) training workshop on mangrove bioshield - Chidambaram	MSSRF
Apr 20 –22, 2006	Annual Dialogue on the theme Hunger Free India: Mission 2007	WFP and Micronutrient Initiative
Apr 23 –28, 2006	Fourth Commonwealth-India Small Business Competitiveness Development Programme – Chennai and Pondicherry	The Commonwealth Secretariat, Export-import Bank of India (EXIM Bank), MSSRF and GoI's Ministry of Small Scale Industries
May 1, 2006	Launch of Education and Livelihood Rehabilitation Programme in Vidarbha - Nagpur	MSSRF
May 4, 2006	Mission 2007 Technology Partners Meeting	IDRC
May 26, 2006	Interaction meeting on development of community-based disaster preparedness modules	MSSRF

**2006 – 2007**

<b>Date</b>	<b>Event title</b>	<b>Supported by</b>
Jun 6 –7, 2006	Workshop on “Creating and Networking of Village Knowledge Centres”, Pillayarkuppam VRC, Pondicherry	Supported by Ramon Magsaysay Award Foundation, IDRC, CIDA, Jamsetji Tata National Virtual Academy for Rural Prosperity (NVA), Microsoft and NASSCOM Foundation
Jun 10 –11, 2006	Workshop on Biodiversity: Conservation of medicinal plants and revitalization of traditional healthcare systems of Kerala, Irinjalakkuda	Interdisciplinary Scientific and Development Organisation (ISRDO)
Jul 24 –25, 2006	Brainstorming meeting on “Technology Options for Natural Resource Management and Improving the Livelihood of SC/ST populations. Jeypore, Orissa	National Commission for Farmers
Nov 4, 2006	Consultative Meeting on “Reward and Recognition under Farmers’ Rights in the PPVFR Act. Jeypore, Orissa	PPVFRA
Dec 8, 2006	Workshop on Food Security and Human Security	THMRC & B V Rao Centre for Sustainable Food Security
Feb 26 –27, 2007	Workshop on Gender Concerns in Food Security	Supported by Ministry of Women and Child Welfare, GoI
Mar 22, 2007	Consultation on Developing Mobile Fisheries Application	MSSRF
Mar 29, 2007	Nutrition Curriculum Assessment Workshop	MSSRF
Apr 18 –20, 2007	Workshop on Microsoft Unlimited Potential Programme (MUPP) NGO partners meeting	Microsoft

**2007 – 2008**

<b>Date</b>	<b>Event title</b>	<b>Supported by</b>
May 23, 2007	Seminar on Taxonomy vis-à-vis Conservation - CAbC, Wayanad	Sponsored by Investing in Nature (IIN), NBRI and Sir Dorabji Tata Trust, Mumbai
Jun 2, 2007	Capacity building workshop for Panchayat and Community leaders, farmers and other workers on the recent legislations pertaining to Biological Diversity and Farmers' Rights	Supported by Dept. of Scientific and Industrial Research and National Biodiversity Authority
Jun 22 –23, 2007	Workshop on Strengthening the Linkages of Different ICT4D Models	Qualcomm, IDRC
Jul 26 – 28, 2007	National Consultation on Technology Development and Delivery Models for Sustainable Livelihoods	Financial support from FAO, Bangkok, DST, New Delhi and SBI, Chennai
Aug 1 –3, 2007	4 <sup>th</sup> Convention of the National Alliance for Mission 2007: Every Village a Knowledge Centre – IGNOU, New Delhi	GGA, IDRC
Aug 12 –14, 2007	National Nutrition Conclave	In collaboration with USAID and ICMR
Oct 6, 2007	Socially Sustainable Strategy for Agriculture in Vidarbha, Sep 8 2007, Nagpur and Mahila Kisan Sashaktikiran Pariyojana – Sewagram, Wardha	MSSRF
Nov 24 – 26, 2007	National Discussion on Revitalising Agrobiodiversity for Alleviating Poverty and Hunger, CAbC, Wayanad	Partially supported by the State bank of Travancore, Thiruvananthapuram
Jan 5, 2008	First National Virtual Congress of Mahila Kisan, Visakhapattinam	MSSRF, ISRO, Andhra University, ISCA
May 10, 2008	Soybean cum Livestock based Farming system Approach for Work and Income Security in Vidharbha - Nagpur	MSSRF and the Soybean Processors Association of India (SOPA)

## Annexure 7

### MSSRF Staff who have been awarded Ph.D.

Year	Particulars
<b>Programme Area: Biodiversity (PA 200)</b>	
1997	Uma, G. 1997. Dynamics of Pichavaram Mangrove Ecosystem, Tamil Nadu, India: Phytosociology, Phenology, and Impacts & Management. Thesis submitted to the Central University of Pondicherry in partial fulfillment of requirements for the degree of Doctor of philosophy.
1999	John Joseph, S. 1999. A Study into the Changing Profile of Sirumalai Forest Hills and Ecofriendly Restoration Plan. Thesis submitted to Gandhigram Rural Institute in partial fulfillment of requirements for the degree of Doctor of Philosophy.
2001	Jayashree M, 2001. <i>Gender and Biodiversity Correlates of Food Security: A Case Study of Kol/i Hills, Tamil Nadu</i> . Thesis submitted to the University of Madras in partial fulfillment of requirements for the degree of Doctor of Philosophy.
2006	King, E. D. Israel Oliver. 2006. <i>Sacred Forests of Kolli Hills, Tamil Nadu, India: A Study on Botany, Ecology and Community Interactions</i> . Doctorate Awarded.
<b>Programme Area: Biotechnology (PA 300)</b>	
1994	Subramonian, N. 1994. <i>Studies on genetic diversity in some Rhizophora species</i> . Ph.D. Thesis submitted to the University of Madras. (Degree Awarded).
1995	Balakrishna, P. 1995. <i>Genetic, physiological and molecular basis of salt tolerance in Oryza sativa L. and Porteresia coarctata Tateoka</i> . Ph.D. Thesis submitted to the Osmania University, Hyderabad.
1997	Jayanthi, M. 1997. Saving Endangered Plants: A case study on <i>Crotalaria longipes</i> Wight & Arn. Thesis submitted to the University of Madras in partial fulfillment of requirements for the degree of Doctor of Philosophy.
1998	Rao, C.S. 1998. Studies on Clonal Propagation of Some Indian Mangroves and Species Differentiation in the Genus <i>Rhizophora</i> . Thesis submitted to Osmania University in partial fulfillment of requirements for the degree of Doctor of Philosophy.
1999	Anand, Ajith. 1999. Studies on Genetic Diversity, Propagation and Rehabilitation of a Critically Endangered Tree Species: <i>Syzygium travancoricum</i> Gamble. Thesis submitted to the University of Madras in partial fulfillment of requirements for the degree of Doctor of Philosophy.
1999	Lakshmi, M. 1999. Genetic Diversity in Mangrove Species of the Family Rhizophoraceae. Thesis submitted to the University of Madras in partial fulfillment of requirements for the degree of Doctor of Philosophy.
1999	Parani, M. 1999. Isolation of Salt Tolerance Genes from Mangroves: Characterisation of Betaine Aldehyde Dehydrogenase (BADH) Gene from <i>Avicennia marina</i> and its Expression in Tobacco Transgenic System. Thesis submitted to Anna University in partial fulfillment of requirements for the degree of Doctor of Philosophy.
2000	Latha, R. 2000. <i>Studies on Propagation, Genetic Relationship and Characterization of Salinity Tolerance in Porteresia coarctata (Roxb.) Tateoka, a Wild Relative of Rice</i> . Thesis submitted to the University of Madras in partial fulfillment of requirements for the degree of Doctor of Philosophy.

Year	Particulars
2000	Senthilkumar, P. 2000. <i>Cloning, Characterization and Expression of Vacuolar H<sup>+</sup>ATPase Subunit c from the Mangrove Species Porteresia coarctata (Roxb.) Tateoka</i> . Thesis submitted to the University of Madras in partial fulfilment of requirements for the degree of Doctor of Philosophy.
2001	Radha, R. 2001. <i>Studies on Conservation, Micropropagation and Characterisation of Bioactive Secondary Metabolites in Some Medicinal Plants</i> . Thesis submitted to the University of Madras in partial fulfilment of requirements for the degree of Doctor of Philosophy.
2002	Eganathan, P. 2002. <i>Studies on Conservation, Clonal Propagation and Assessment of Economic Characters in Three Members of the Mangrove Ecosystem</i> . Thesis submitted to the University of Madras in partial fulfilment of requirements for the degree of Doctor of Philosophy.
2002	Loganathan, P. 2002. <i>Isolation and Characterisation of Novel Salt Tolerant Nitrogen Fixing and Phosphate Solubilising Bacteria from Wild Rice -Porteresia coarctata - Tateoka</i> . Thesis submitted to the University of Madras in partial fulfilment of requirements for the degree of Doctor of Philosophy.
2002	Rangarajan, Sunita. 2002. <i>Genetic Diversity and Salt Tolerance of Plant-associated Pseudomonas spp. and their Efficiency as Biological Disease Control Agents in a South Indian Coastal Agri-Ecosystem</i> . Thesis submitted to the University of Madras in partial fulfilment of requirements for the degree of Doctor of Philosophy.
2002	Saleena, Li Ily M. 2002. <i>Genotypic Characterisation of Rice Associated Azospirillum spp. and Identification of Efficient Indigenous Strains for the Coastal Agri-Ecosystem</i> . Thesis submitted to the University of Madras in partial fulfilment of requirements for the degree of Doctor of Philosophy.
2005	Balaji, P. 2005. <i>Assessing the Lichen Diversity and its Distribution Pattern for Prospecting the Ecological and Economic Potential of Lichens within Bolampatti II Forest Range (Siruvani Hills), Western Ghats, India</i> . Doctorate Awarded.
2005	Jithesh, M. N. 2005. <i>Isolation and Characterization of cDNA Isoforms for Catalase Gene from Avicennia Marina (Forsk.) Vierh. and its Expression in Transgenic System</i> . Doctorate Awarded.
2005	Prashanth, S. R. 2005. <i>Characterization of Copper Zinc Superoxide Dismutase Gene from Mangrove Plant Avicennia marina (Forsk.) Vierh. and Transformation into Rice for Salinity Tolerance</i> . Doctorate Awarded.
2006	Mehta, Preethi Angela. 2006. <i>Identification of Abiotic Stress Induced Gene from Avicennia marina (Forsk) Vierh. and Over-Expression in the Transgenic System</i> . Thesis submitted to the University of Madras in partial fulfilment of requirements for the degree of Doctor of Philosophy.
2006	Sivaprakash, K. R. 2006. <i>Identification and Characterization of Iron Storage Protein ferritin Gene from Avicennia marina (Forsk.) Vierh. and Tissue Expression in Rice for Iron Fortification and Ectopic Expression in Tobacco for Mitigation of Oxidative Stress</i> . Thesis submitted to the University of Madras in partial fulfilment of requirements for the degree of Doctor of Philosophy.
2006	Subramanian, H. M. SR. 2006. <i>Studies on Sodium Chloride Tolerance of Sesuvium portulacastrum</i> . Thesis submitted to the University of Madras in partial fulfilment of requirements for the degree of Doctor of Philosophy.

Year	Particulars
2007	George, Suja. 2007. <i>Genetic Engineering for Abiotic Stress Tolerance Using Prosopis juliflora (Swartz) DC. as a Model Plant System for Gene Mining</i> . Thesis submitted to the University of Madras in partial fulfilment of requirements for the degree of Doctor of Philosophy.
2007	Satyan, R. S. 2007. Isolation, Purification and Characterisation of Bioactive Secondary Metabolites from <i>Excoecaria agallacha</i> L. and <i>Jatropha gossypifolia</i> L. against <i>Helicoverpa armigera</i> , <i>Culex quinquefasciatus</i> and <i>Corynebacterium diphtheriae</i> . Thesis submitted to the University of Madras in partial fulfilment of requirements for the degree of Doctor of Philosophy.
2008	Rameshkumar, N. 2008. Isolation and Characterization of Two Novel Plant Growth Promoting Vibrio Species from Wild rice ( <i>Porteresia coarctata</i> Tateoka): Description of <i>Vibrio rhizosphaerae</i> sp. nov., and <i>Vibrio porteresiae</i> sp. nov. Thesis submitted to the University of Madras, Chennai in partial fulfilment of requirement for the degree of Doctor of Philosophy.
<b>Programme Area: Ecotechnology (PA 400)</b>	
2002	Gopalakrishnan, A. 2002. <i>Effect of White Spot Syndrome Virus (WSSV) Disease on Shrimp Aquaculture in Southeast Coast of India</i> . Thesis submitted to the University of Madras in partial fulfilment of requirements for the degree of Doctor of Philosophy.
2004	Rengalakshmi, R. 2004. Conservation Biology of Little Millet ( <i>Panicum sumatrense</i> Rothex Roem. A Schultz) Landraces of Kolli Hills, South India. Doctorate Awarded.
2005	Malarvannan, S. 2005. <i>Studies on Biocontrol of Helicoverpa Armigera using Traditional Plants</i> . Doctorate Awarded.
2005	Nageswaran, M. 2005. <i>A Study on Integrated Intensive Farming System</i> . Thesis submitted to the Bharathidasan University in partial fulfilment of requirements for the degree of Doctor of Philosophy.
2007	Palled, Vishwanath. 2007. <i>The Process of Self Help Groups Movement and Socio-economic Change: Case Studies from Tamil Nadu and Karnataka</i> . Thesis submitted to the Karnataka University, Dharwad in partial fulfilment of requirement for the degree of Doctor of Philosophy.
<b>Programme Area: Food Security (PA 500)</b>	
2008	Varma, Deepa. 2008. <i>The Sustainability of Farming Systems – Integrating the Principles of Conservation with the Economic Objectives of Farming in the Rice Farming Systems of Tamil Nadu</i> . Thesis submitted to the University of Madras, Chennai in partial fulfilment of requirement for the degree of Doctor of Philosophy.
<b>Programme Area: Information, Education and Communication (PA 600)</b>	
2006	Parasuraman, N. 2006. <i>Peraasiriyar Ma. Sa. Swaminathan: Vaazhvum Paniyum = Professor M. S. Swaminathan: Life and Works</i> . (Tamil). Doctorate Awarded.



## Anneuxre – 8

# LIST OF PUBLICATIONS (1990 – 2008)

### *Summary table*

<b>Particulars</b>	<b>Number of Citation</b>
Books / Monographs / Manuals	261
Articles in Journals / Books	856
Invited Papers / Lectures	5
Reports	40
Articles in Popular Journals / Media / Special Lectures	33
Participation in Conferences / Seminars / Symposia / Training Programmes / Workshops	593
Presentations in Conferences / Symposia	621
Videos/ CD-ROMs and Web Sites	21

### *Detailed listing*

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- Bala Ravi, S., I. Hoeschle-Zeledon, M. S. Swaminathan and E. Frison. (eds.). 2006. *Hunger and Poverty: The Role of Biodiversity: Report of an International Consultation on The Role of Biodiversity in Achieving the UN Millennium Development Goal of Freedom from Hunger and Poverty.* M. S. Swaminathan Research Foundation, Chennai, IPGRI, Rome and Global Facilitation Unit for Underutilized Species, Rome. 232pp.
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- Balaji, V. (ed). 1998. *Ecotechnology and Shaping the Future: proceedings of the Asian Regional Workshop on Ecotechnology and Shaping the Future.* Proceedings No. 20. MSSRF, Chennai. v+172.
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Balakrishna, P. 1992. Role of Molecular Markers in Crop Improvement. *First Symposium on Biotechnology in Cropping Systems*. ISTCRAD, Kerala, India. September.

Balakrishna, P. 1993. "Biotechnology and Biodiversity". Presented at the XVII International Congress of Genetics, Birmingham, UK

Balakrishna, P. 1993. Awarded the International Fellowship for Advanced Research by the International Tropical Timber Organisation (research conducted at the Scottish Agricultural College, Edinburgh, U.K., June-August, 1993).

Balakrishna, P. 1994. "New sources of genes for salt tolerance". Sixth Annual Rockefeller Foundation Rice Biotechnology Meeting, Bali, Indonesia. 15 - 21 May

Balakrishna, P. 1997. Global Biodiversity Forum Meeting, Montreal, Canada, 29 - 31 August.

Balakrishna, P. 1998. 4th Conference of the Parties to the Convention of Biological Diversity (CBD), Bratislava, Slovakia, 3 -15 May.

Balakrishna, P. 1992. "Biotechnological tools to identify biodiversity of insects" Paper presented at the National Symposium on Biological Diversity of Insects. Indian Academy of Entomology. Madras. November. 1992.

Balakrishna, P. 1993. "Molecular markers and conservation biology" Paper accepted /for presentation at the XVII International Congress of Genetics. Birmingham. U.K.. 15-21 August. 1993.

Balakrishna, P. 1993. "Use of Small Oligonucleotide - based DNA Amplification (SODA) for finding genetic diversity" Paper presented at the 6th European Congress of Biotechnology. Florence. Italy. June. 1993.

Balakrishna, P. 1993. Participated in the International Conference on Biotechnology in Agriculture and Forestry, Association of Indian Biochemists and Biotechnologists. New Delhi, February. 1993.

Balasubramanian, K. 1997. Conference on Multiple Resource and Land use Planning in Biosphere Reserve and Similar Managed Areas as Subject for Ecodevelopment. Conducted by South -South Co-operation on Environmentally Sound Socio - Economic Development in the Humid Tropics, Kunming, China. 8 - 13 December.

Balasubramanian, K. 1997. Round Table Discussion for Asia Development Research Forum, IDRC. Bangkok. 26 - 27 September.

Balasubramanian, K. 1999. Millennium Assessment Prototype. World Resources Institute, Washington. February 10-11.

Balasubramanian, K. 2000. *14CCEM Parallel Symposium for the 14th Conference of Commonwealth Ministers of Education*. Halifax, Nova Scotia, Canada. November 26-29.

Balasubramanian, K. 2000. *Regional Symposium on Sustainable Development in Desert Societies*. Islamic Republic of Iran and the United Nations Development Programme, Yazd, Iran. May 16-18.

Balasubramanian, K. 2000. *Workshop on Poverty, Gender and Water in South Asia*. International Water Institute and Gujarat Institute of Development Research. Taj Residency Ummed, Ahmedabad. August 10-11.

- Balasubramanian, K. 2002. *Eco-jobs and Ecoentrepreneurship: The Way Forward at the Ecology of Hope Initiative*. World Summit on Sustainable Development (WSSD), Johannesburg, South Africa. August 30.
- Balasubramanian, K. 2002. *Second Global Environment Fund (GEF) Assembly on Ecology of Hope: Uncommon Opportunities for Eco-jobs and Eco-entrepreneurship*. Beijing, China. October 16-18.
- Balasubramanian, K. 2002. *Workshop on Obtaining Effective Research Results with Scarce Resources: Strategies for Research and Innovation in Forestry*. FORSPA, IUFRO/SPDC, USFS and TNC, Colombo, Sri Lanka. December 2-4.
- Balasubramanian, K. Discussion on Doubly Green Revolution. CIRAD, Mont Pellier, France. 8 -9 September.
- Balasubramanian, S. 2001. *Workshop on Cell and Developmental Biology*. National Centre for Biological Sciences, Bangalore. January 9-13.
- Balasubramanian, T. N. 2005. *Stakeholder Workshop on Managing Climate Risk*. Climate South-Asia Programme, ICRISAT, Hyderabad. November 9-11.
- Balasubramanian, T. N. 2007. *National Conference on Impacts of Climate Change with particular reference to Agriculture*. Tamilnadu Agricultural University, Coimbatore. August 22-24.
- Balasubramanian, T. N. 2007. *TERI, DFID, IDS Project Meeting*. New Delhi. September 25-26.
- Balasubramanian, T. N. 2007. *UNDP Media Workshop*. United Nations Development Programme, Udaipur. October 26-28.
- Banumathy, S. and A. Alagesan. *Workshop cum Group Meeting on Crop Resource Management Network (CRMNET)*. DRRRI & ICAR Hyderabad. 7 - 9 January.
- Baskar, R. 2004. *Barefoot Taxonomist Training Programme on Documentation of Traditional Knowledge and Natural Resources*. FRLHT, Amirthi. August 18-20.
- Baskar, R. 2004. *Barefoot Taxonomist Training Programme on Documentation of Traditional Knowledge and Natural Resources*. FRLHT, Bangalore. November 23-29.
- Baskar, R. 2005. *Barefoot Taxonomist Training Programme on Documentation of Traditional Knowledge and Natural Resources*. FRLHT, Bangalore. March 22-24.
- Baskar, R. 2006. *State Level Seminar on Tribals, Forest and Futures*. Department of Future Studies, Gandhigram Rural University, Gandhigram. December 11.
- Baskar, R. 2007. *India Organic Trade Fair 2007*. International Competence Centre for Organic Agriculture and Indian Council of Agricultural Research, New Delhi. November 29-December 02.
- Bhandari, Ruchi. 1996. *Development and environment issues*. Training programme at Anna Institute of Management, Madras. 6 -10 May.
- Bharath, P. 2008. *Thelotremataceae Lichen Workshop*. The Field Museum, Chicago, USA and Ramkhamhaeng University, Bangkok, Thailand. March 10-15.
- Bhavani, R. V. 2001. *EU-India Think Tank Seminar*. European Commission, Brussels. October 15-16.



- Bhavani, R. V. 2002. *Consultation on Dichotomy between Grain Surplus and Widespread Endemic Hunger*. National Academy of Agricultural Sciences, New Delhi. July 11.
- Bhavani, R. V. 2002. *Workshop on Decentralised Grain Management*. Centre for Environment Concerns, Hyderabad. July 26-27.
- Bhavani, R. V. 2002. *Workshop on Ethics of Science and Technology in Asia-Pacific Region*. UNESCO, Bangkok. October 10-11.
- Bhavani, R. V. 2002. World Summit for Sustainable Development, Southern Regional Consultation. CEE and Ministry of Environment and Forests, Bangalore. February 13.
- Bhavani, R. V. 2003. *Dissemination Workshop on Decentralised Food Grain Management*. Centre for Environment Concerns, Hyderabad. April 1.
- Bhavani, R. V. 2007. *Programme Advisory Board of DFID's Research into Use (RIU) Programme, 2006-2011*. Accra. March 13-14.
- Bhavani, R. V. 2008. *Asian Commonwealth Conference on Strengthening Role of Civil Society and Media in Climate Change Adaptation and Disaster Mitigation*. Commonwealth Foundation and All India Mitigation Institute, Chennai. April 23-25.
- Bhavani, R. V. 2008. *Workshop on Tool to Assess Local Level Food Security*. SEVA Mandir, Udaipur. March 19.
- Bhavani, R.V. 2003. Workshop on Developing LIBERA (Livelihood Improvement through Innovative Interventions using Biomass Energy in Rural Areas) Framework for Biomass based Micro-Energy Systems. Gram Vikas, Orissa. August 19-20.
- Biju, K. J., Smita S. Nair, K. A. Sujana, K. Satheesh, K. S. Surabhi and C. S. Dhanya. 2007. *Training on Vegetative Propagation*. Kerala Agricultural University, Ambalavayal. January 24-25.
- Boopathy, P. 2002. *Biodynamic Training Programme*. Biodynamic Association of India, Kodaikanal. October 6-13.
- Boopathy, P. 2002. *Training Programme on Value Addition to Minor Millets*. Central Food Technological Research Institute (CFTRI), Mysore. May 13-16.
- Boopathy, P. 2004. Training on Composting Techniques. KVK, Gandhigram Rural University, Gandhigram. March 29-April 2.
- Boopathy, P. 2004. Trainers' Training Programme on Composting Technologies. Krishi Vigyan Kendra, Gandhigram Rural Institute, Gandhigram. March 29-April 2.
- Bose, S. 2002. *All India Adult Education Conference*. Indian Adult Education Association and The Gandhigram Rural Institute. Gandhigram Rural University, Dindigul. December 27-29.
- Bose, S. 2003. *NGO-Banker Interface on Rural Entrepreneurship Development*. Small Industries Development Bank of India and Entrepreneurship Development Institute of India, Kodaikanal. February 10-12.
- Bose, S. 2003. *State Level Workshop on Renewable Energy for Sustainable Development*. Rural Energy Centre, Gandhigram Rural Institute, Gandhigram. March 15-16.

- Bose, S. 2003. Training Programme on Hill Banana and Acid Lime Cultivation. Horticultural Research Station, Thadiyankudisai. July 31.
- Bose, S. 2003. Training Programme on Onion Cultivation Methods. National Horticulture Development Foundation, Oddanchatram. October 17.
- Bose, S. 2004. Workshop on Road Show on Water Surface – North India. Dhan Foundation, Madurai. February 6-19.
- Brindha, N. 1993. "Studies on genetic inheritance of quantitative characters in *Sisamum indicum L*". Paper accepted for presentation at the Eleventh International. Congress of SABRAO (The Society for the Advancement of Breeding Researches in Asia and Oceania), Academia Sinicia, Taipei. November
- Brindha, N. 1994. Participated in the training programme on "Hybrid vegetable seed production". Indian Institute of Horticultural Research, Bangalore. 3 - 8 January
- Chandrasekaran, A. 2004. Advanced Training on Sustainable Agriculture. Ohio State University, Ohio. October 11-25.
- Chandrasekaran, A. 2005. Conference on Renewable Energy and Poverty Alleviation in Rural India. Karl Kudel Institute for Development, Coimbatore. March 7-11.
- Chaudhury, Susanta Sekhar. 2004. Workshop on Crop Post Harvest Options and Market
- Chitra, K. 2004. Training on Agricultural Technology Platform Software. TNAU, Coimbatore. September 16-17.
- Choudhury, Amulya Kumar. 2006. *Workshop on Orissa Fisheries Policy*. UNDP and AFPRO, Bhubaneswar. May 25-26.
- Daniels, R.J.R. 1994. Participated in UNEP - Global Biodiversity Assessment, London. 25 - 28 April
- Deshmukh, Sanjay V. 1991. Bihar GIS Workshop. A Workshop related to application of geographical information systems. Organized by International Development Research Centre (IDRC), Canada. November 28-29.
- Deshmukh, Sanjay V. 1991. Seminar on Utilisation of shoreline change maps for study of Coastal Wetlands and Land forms. Organised by Space Applications Centre, Ahmedabad. And Institute of Remote Sensing, Anna University, Madras. November 11.
- Deshmukh, Sanjay V. 1993. «Criteria for identification and methods of evaluation of forest areas for the establishment of a global network of mangrove forest genetic /resources centres» Paper presented at the Project Formulation Workshop for the Establishment of a Network of Mangrove Forest Genetic Resources Centres in West and Central Africa, Dakar, Senegal, 30 April - 1 May 1993.
- Deshmukh, Sanjay V. 1993. Participated in the Training Course: Identification and Planning Projects in Biodiversity Conservation, University of Bradford, U.K., June-July, 1993.
- Deshmukh, Sanjay V. 1993. Resource Person on Coastal Biodiversity, National Workshop for Policy Makers on the Conservation and Sustainable Management of Biological Diversity, M.S. Swaminathan Research Foundation, Madras 16-18 December, 1992.
- Deshmukh, Sanjay V. 1991. Attended the International Training Programme in Farm Forestry, Chinese Academy of Forestry, Beijing. September 8 – 28.

Deshmukh, Sanjay. V. 1991. Member, Expert group on Consultation for the Preparation of a Syllabus for the Master's Degree Programme on Coastal Zone Management. Asian Institute of Technology, Bangkok, Thailand. July 7-13.

Deshmukh, Sanjay. V. 1991. Process involved in the establishment and management of genetic resources centre for in situ and exsitu conservation of mangrove germplasm. ICSU-CASAFA *Workshop on Sustainable Management of Coastal Ecosystems*. Anna University, Madras. October 8-9.

Deshmukh, Sanjay. V. 1992. Course Advisor and Resource Person, International Trainers Training Programme for the Conservation of Mangrove Genetic Resources, CRSARD, Madras. 17 February – 22 May.

Deshmukh, Sanjay. V. 1992. International Dialogue on New Technologies: Reaching the Unreached – II. Information Science & Technology. CRSARD, Madras. January 20 – 23.

Deshmukh, Sanjay. V. 1992. Member, International expert team for the Identification of suitable sites for the Establishment of Mangrove Genetic Resources Centers in Papua New Guinea and India, CRSARD. 23 April – 18 May

Deshmukh, Sanjay. V. S. B. Chaphekar and S. M. Karmarkar. 1991. Effect of inter-tidal position on survival and growth of Mangroves. *National Seminar on Conservation and Management of Mangrove Ecosystems with special reference to Sundarbans*. Calcutta. December 6-8.

Deshmukh, Sanjay. V., S. M. Karmarkar and S. B. Chaphekar. 1991. Studies on germination of Some Mangrove species. *National Seminar on Conservation and Management of Mangrove Ecosystems with Special reference to Sundarbans*. Calcutta. December 6-8

Dhanapal, D. 1997. Gender Analysis for Gender Planning: Socio-economic and Gender Analysis (SEAGA), a training programme. FAO-RAP, Bangkok. 30 -31 October.

Dhanapal, D. 2001. Trainers' Training on Women's Entrepreneurship Development Programme at Pattukottai. Tamilnadu Corporation for Development of Women, Chennai. July 7-12.

Dhanya, C. S. and K. J. Biju. 2007. *Training on Pollination Ecology*. Kalakad Mundanthurai Tiger Reserve, Tirunelveli, Tamil Nadu. February 6-13.

Dhanya, C. S., K. A. Sujana and Smita S. Nair. 2006. *National Seminar on Wild Life and Biodiversity Conservation*. Pondicherry University, Pondicherry. October 13-14.

Eganathan, P. 1999. Summer School on Crop Improvement in Plantation Crops. Central Plantation Crop Research Institute (ICAR). Kasaragod, Kerala. June 8-28.

Eganathan, P. 2001. UNESCO-Regional Training Programme on Biodiversity Systematics: Evaluation and Monitoring with Emphasis on Medicinal Plants. National Botanical Research Institute, Council of Scientific and Industrial Research, Lucknow. September 3-13.

Eganathan, P. 2002. Workshop on *Converting Medicinal Plants into Business Opportunities*. Heritage Healing and Centre for Biotechnology, Anna University, Chennai. October 26.

Eganathan, P. 2004. Short-Term Training Course on IPR in Biotechnology for Scientists and Officers. Department of Biotechnology, Government of India and National Law School of India University, Bangalore. July 12-17.

Eganathan, P. 2006. *Experts Group Discussion on Non-Edible Grade Vegetable Oils as a Source of*

*Decentralized Power Production*. Ministry of Non Conventional Energy Resources (GOI), Regional Circle, Chennai. April 24.

Ganesan, M. 1996. *Savings and Credit*. State level training at Society for Rural Development, Dharmapuri. 4-7 March

Ganesan, M. 2001. Intensive Cultivation of Vegetables Under Different Growing Conditions. Indo-Israel Project on R&D and Demonstration Farm, Indian Agricultural Research Institute, New Delhi. December 3-14.

Ganesan, M. 2001. Workshop on Home Gardening and Waste Management. Ga.Gemunafushi Island, Male, Maldives. December 23-27.

Ganesan, M. 2003. *National Workshop on Natural Dyes*. Shri AMM Murugappa Chettiar Research Centre, Chennai. February 27-28.

Geetha Rani, M. 1998. 9th International Course on Desert Agro-Biology. The Jacob Blaustein Institute for Desert Research, Israel. December 1-January 20.

Geetha Rani, M. 1998. National Agriculture Technology Project (NATP) : regional co-operators interaction meeting on PGR exploration and collection activities. 12 May. Thrissur.

Geetha Rani, M. 1998. Socio-economic and Gender Analysis, training Programme. FAO-FARM Program. Bangkok. 16-27. March.

Geetha Rani, M. 1999. *First Consultation-cumOrientation Workshop on National Agricultural Technology Project on Plant Biodiversity*. National Bureau of Plant Genetic Resources, New Delhi. August 24-25.

Geetha Rani, M. 1999. *Training Programme for Zonal Co-operators under National Agricultural Technology Project on Plant Biodiversity*. National Bureau of Plant Genetic Resources, Thrissur. November 5-6.

Geetha Rani, M. 2000. *International Workshop on NGO Activities to Accompany the Global Forum on Agricultural Research*. Dresden, Germany. May 16-23.

Geetha Rani, M. 2000. *Launching Workshop of National Agricultural Technology Project on Collection, Documentation and Validation of Indigenous Technical Knowledge*. Indian Council of Agricultural Research, Jabalpur. July 15.

Geetha Rani, M. 2000. *National Agricultural Technology Project on Plant Biodiversity Zonal Technical Co-ordination Committee Meeting*. Thrissur. June 9.

Geetha Rani, M. 2001. *First Regional Level Nattu Vaidyar Convention*. Covenant Centre for Development. Madurai. April 15.

Geetha Rani, M. 2001. *Orientation Trainingcum-Workshop under Human Resources Development (Mission Mode) on National Agricultural Technology Project on Plant Biodiversity*. New Delhi. February 27-March 1.

Geetha Rani, M. 2001. State Level Innovators Workshop. SEVA, Madurai. August 3-4.

Geetha Rani, M. 2001. *Third National Workshop on National Agricultural Technology Project on Plant Biodiversity*. New Delhi. April 18-20.

Geetha Rani, M. 2001. *Workshop on Conservation and Management of Traditional Cultivars*. Thiruvannamalai. March 23.

- Geetha Rani, M. 2001. *Zonal Technical Coordination Committee Meeting under National Agricultural Technology Project on Plant Biodiversity*. Thiruvananthapuram. February 6-8.
- Geetha Rani, M. 2002. State Level Committee for Giving Awards and Technological Improvements of Grassroots Innovations. SEVA, Madurai. April 29.
- Geetha Rani, M. 2002. Workshop on Dissemination of Indigenous Knowledge and Grassroot Innovations. SEVA, Madurai. April 28.
- Geetha Rani, M. 2002. *Workshop on Patent Awareness for Women Scientists*. Department of Science and Technology, Government of India, New Delhi, Meenakshi College for Women, Chennai. September 5.
- Geetha Rani, M. 2003. *Training Programme on Post Collection Care and Handling of the Germplasm*. National Bureau of Plant Genetic Resources, Hyderabad. March 3-5.
- Geetha Rani, M. 2005. Regional Meeting on Establishment of Information Sharing Mechanism for Monitoring of the Implementation of Global Plan of Action (GPA) for Management and Sustainable Utilization of Plant Genetic Resources for Food and Agriculture (PGRFA). NBPGR, Thrissur. March 12-13.
- Girigan, G. and T. Manoj Kumar. 2006. *Conference on Marketing Networks for Tiny Enterprises*. ADHWANA, Kerala Forum of Partners in Functional Vocational Training, Trivandrum. December 4.
- Girigan, G., and T. Raveendran. 2005. *Training on Watershed Development*. Watershed Organisation Trust, Ahmedabad, Pune. June 7-10.
- Gnanappazham, L. 1995. *Application of remote sensing and geographic information system in forestry*. Workshop held by Forest Survey of India, Ministry of Environment and Forest, Dehradun. 20-21 October
- Gnanappazham, L. 1995. *IRS I-C satellite. User interaction workshop*, National Remote Sensing Agency. Hyderabad. 14
- Gnanappazham, L. 1995. *THEMAPS and DIGITIZ mapping and GIS software*. Training in System Research Institute, Pune. 17-23 July.
- Gnanappazham, L. 2004. Workshop on RS and GIS Applications for Coastal Zone Studies. Space Application Centre, Ahmedabad. July 2.
- Gnanappazham, L. 2005. *Application of Remote Sensing and GIS in Agriculture and Rural Development through Village Resource Centres*. Indo-US Science and Technology Forum, New Delhi. November 4-5.
- Gnanappazham, L. 2005. Training Programme on Coastal Engineering and Coastal Zone Problems and Solutions. Indian Institute of Technology, Chennai. January 31-February 4.
- Gnanappazham, L. 2005. Workshop on Global Land Cover Network. Indian Institute of Technology, New Delhi. February 14-18.
- Gnanappazham, L. 2006. *Impact Analysis of Watershed Development Programme and Application of GIS in WDP*. WOTR, Ahmednagar. January 16-21.
- Gnanappazham, L. 2006. *RS and GIS Applications for Coastal Zone Studies*. Space Application Centre, Ahmedabad. February 15-16.

- Gnanappazham, L. 2007. *Workshop on Bay of Bengal Biogeographic Information System*. National Institute of Oceanography, Goa, National Institute of Chemical Laboratory, Pune and Centre for Advanced Studies – Marine Biology, Annamalai University, Parangipettai. February 19-20.
- Gnanappazham, L. 2007. *ISRS South Chapter Meet*. Satyabama Deemed University, Chennai. February 16.
- Gnanappazham, L. 2007. *Workshop on GIS and Its Role in the 21<sup>st</sup> Century*. Indian Geoinformatics Centre, Chennai. February 28.
- Gobu, J. 2004. *Workshop on IT Management for Rural Development*. National Information Center for Rural Development, Hyderabad. January 19-24.
- Gopalakrishnan, A. 2000. *International Conference on the Chao Phraya Delta: Historical Development, Dynamics and Challenges of Thailand's Rice Bowl*. Kasertsart University, Bangkok, Thailand. December 12-15.
- Gopinath, L. R. 2002. *Trainers' Training Programme on Panchayat Raj System*. State Institute of Rural Development (SIRD), Chennai. May 21-23.
- Gopinath, L. R. 2002. *Workshop on Environmental Information Systems for Biodiversity of Tamilnadu for Identifying Gaps for Areas of Research*. Department of Environment, Government of Tamilnadu, Chennai. December 5.
- Gopinath, L. R. 2003. *Facilitation in Participatory Water Shed Management*. Agricultural Directorate, Kanchipuram. January 22.
- Gopinath, L. R. 2003. *Western Ghats Forum Meeting on Activities and Approaches for Biodiversity Conservation and Natural Resource Management*. ATREE, Bangalore. April 3.
- Gopinath, L. R. 2004. *National Level Seminar on Environmental Degradation and its Impact on Society: Measurement, Management and Control*. Erode College, Erode. September 23.
- Gopinath, L. R. 2004. *Training on Sustainable Development and Business: The Use of the Value Chain Approach*. Oestrich-Winkel, Frankfurt, Germany. October 12-15.
- Gopinath, L. R. 2005. *Seminar on Environ.* Mahendra Engineering College, Namakkal. February 20.
- Gopinath, R. 2007. *National Conference on Human Development in India*. North-Eastern Hill University, Shillong. May 24-25.
- Gunasekaran, S. 2001. *Workshop on Medical Informatics, Research and Communication*. JBTDR, Mahatma Gandhi Institute of Medical Sciences, Sevagram, Maharashtra. November 26-28.
- Gupta, Ravi Kumar. 2002. *National Symposium on Thermal Ecology*. Nuclear Sciences Department of Atomic Energy (Mumbai) and M. S. University (Tirunelveli), Chennai. February 1-2.
- Gupta, Ravi Kumar. 2002. *Water Summit 2002*. Confederation of Indian Industry, Chennai. March 15.
- Gupta, Ravi Kumar. 2003. *International Symposium on Transition in Agriculture for Enhancing Water Productivity*. Agriculture College and Research Institute, TNAU, Killikulam. September 23-25.
- Gupta, Ravi Kumar. 2003. *National Seminar on Conservation and Management of Marine Biodiversity*. Ministry of Environment and Forests, Wildlife Institute of India, Kanyakumari. March 21-22.

- Gupta, Ravi Kumar. 2004. International Seminar on Modern Concept of Development and its Impact on Environment. S.T. Hindu College and OISCA-International (Japan), Nagarcoil. January 27.
- Gupta, Ravi Kumar. 2006. Second International Conference on Hydrology and Watershed Management with a Focal Theme on Improving Water Productivity in Agriculture: ICHWAM-2006. Centre for Water Resources, JNTU Institute of Science and Technology, Jawaharlal Nehru Technological University, Kukatpally, Hyderabad. December 5-8.
- Gupta, Ravi Kumar. 2007. *Training Programme on Understanding the Environment Impact Assessment*. Centre for Science and Environment, New Delhi. August 27-31.
- Hariharan, G.N. 1999. Resource Person in the National Workshop on Lichens. University of Perdeniya and Royal Botanical Gardens, Perdeniya, Srilanka. May 1-31.
- Hoon, V. Participated in the International Conference on Women in Agriculture, Bangkok. September.
- Hoon, V., E. Agergard and S. Rajaram. 1991. Preparation of a Plan for the Establishment of Biovillages in Herbal Province, China. Report Prepared in Collaboration with the Chinese Academy of Sciences, Beijing. August.
- Hoon, Vineeta, 1992. Resource Person for Island and Mountain Ecosystems, National Workshops for Policy Makers on the Conservation and Sustainable Management of Biological Diversity, M.S. Swaminathan Research Foundation, Madras, 16-18 December, 1992; 18-20 January, 1993.
- Hoon, Vineeta. 1992. Participated in the Ciba Foundation Symposium on World Food Production by means of Sustainable Agriculture: the Role of Crop Protection, Madras, 30 November - 2 December, 1992.
- Hoon, Vineeta. 1993. "Agribusiness for small farmers" paper presented at the Dialogue on Ecotechnology and Rural Employment, M.S. Swaminathan Research Foundation, Madras, 12-15 April, 1993.
- Hoon, Vineeta. 1993. "Poverty and anti-poverty issues in mountain areas" Paper /presented at the International Forum on the Development of Poor Mountain Areas, ICIMOD and the Chinese Academy of Sciences, Beijing, 22-29 March, 1993.
- Hoon, Vineeta. 1994. Participated in a seminar on Himalayan conservation programme, governments - people participation. Vigyan Bhawan, New Delhi. 27 - 28 June
- Hoon, Vineeta. 1994. Resource person for adaptive strategies of the poor in arid and semi-arid lands: In search of sustainable livelihoods. Organised by IISD, Canada, at Nairobi, Kenya. 10 - 14 May
- Hoon, Vineeta. 1996. *Leading Women in Agriculture and Rural Development*, course organised by CINADCO, Shefaim, Israel
- Hopper, R. S. S. 1991. Appraisal of Biorefinary operations. Visit to Bioraf Denmark Foundation, Copenhagen, Denmark. August 11-17
- Hopper, R. S. S. 1991. Biovillages. *Dialogue on Institutional Finance and Biotechnology*. Agricultural finance Corporation and FICCI, New Delhi, India. October 23-24.
- Hopper, R. S. S. 1991. Biovillages. *Seminar on Impacts of Biotechnology in Agriculture and Food in Developing Countries*. COSTED, Madras. February 3-4.

- Hopper, R. S. S. 1991. Purification and Characterization of Phycobiliproteins from a non-heterocystous cyanobacterium *O. Sancta*. 4<sup>th</sup> Int. Phycol. Cong. Duke University, Durham, NC, USA. August 4-10.
- Hopper, R. S. S. 1992. Establishment of Biovillages in Pondicherry, India. *Working group meeting on Asian Network for Small-scale Agricultural Bio-Technologies*. Kathmandu, Nepal. 30 March – 1 April
- Hopper, R. S. S. and G. N. Raju. 1992. Experiential learning and Sustainable Development – Pondicherry Biovillage Project. 3<sup>rd</sup> Int. Conference on Experiential Learning. Pondicherry, India. March 9-15.
- Hopper, RS.8. 1998. Global Environment Issues. (International Visitor to the United States of America). The United States Information Service (USIS). 25 June - 16 July.
- Hopper, RS.S. 1997. Workshop on Capacity 2000 plus Competency based Community Skills Development, Windhoek, Namibia. 23- 25 September.
- Hopper, RS.S. 1997. Workshop on Doubly Green Revolution, CIRAD. Montpellier. France. 7-10 September.
- Hopper, RS.S. 1998. Travelling seminar on promoting regional cooperation through the environment, Delhi, Varanasi and Pakistan, United States Information Service (USIS), Delhi. 15 - 22 May.
- Isaac Manuel, R. 2007. *Environment Quiz Programme*. US Consulate, Chennai. October 10.
- Isaac Manuel, R. 2007. *NATCOM Workshop on Issues in Vulnerability Assessment and Adaptation in India*. WINROCK International India, New Delhi. November 1-2.
- Isaac Manuel, R. 2007. *National Workshop on Biodiesel*. Madurai Kamaraj University, Madurai. October 17-18.
- Isaac Manuel, R. 2007. *Seminar on Climate Change and Indian Agriculture: Impact, Vulnerability and Adaptation Assessment*. Madras School of Economics, Chennai. August 31.
- Isaac Manuel, R. 2008. 5<sup>th</sup> International Biofuels Conference. WINROCK International India, New Delhi. February 7-8.
- Isaac Manuel, R. 2008. *Monitoring and Evaluation Meeting of Inter-cooperation*. AFPRO, Udaipur. January 29-February 1.
- Isaac Manuel, R. 2008. *National Conference on the Environment and Indian History*. CPR Foundation, Chennai. January 11.
- Isaac Manuel, R. 2008. *Regional Workshop on Building Adaptation Strategies to Climate Change for Selected Flood and Drought Prone Areas of Bangladesh*. Bangladesh Centre for Advanced Studies, Dhaka, Bangladesh. February 14.
- Isaac Manuel, R. 2008. *World Meteorological Day Theme Meeting on Observing Our Planet for a Better Future*. Indian Meteorological Society, Chennai. March 25.
- Jayakumar, K. 2007. *ISRS Southern Chapter Meet*. Satyabama Deemed University, Chennai. February 16.
- Jayanthi, M., Ramaswamy, N.M. and Sree Rangasamy. 1993. "Natural resistance /of fingermillet explants to Kanamycin". Poster presented at National Symposium on Developments in Plant Molecular Biology, Coimbatore. 29 - 31 December



- Jayanthi, M., Ramaswamy, N.M. and Sree Rangaswamy. 1993. "Protein profiles / of embryogenic, nonembryogenic and seed calli on finger millet". Poster presented at National Symposium on Developments in Plant Molecular Biology, Coimbatore. 29 - 31 December
- Jeelani, M. M. 1999. *Swarnandhra Pradesh Meeting on Preparation of State Level Forestry Action Plan*. Andhra Pradesh Forest Department, Hyderabad. December 12.
- Jeelani, M. M. 1999. *Workshop on Impact of the Degradation of Bio-Resources on the Livelihoods of the Poor Coastal Fisher Folk*. Integrated Coastal Management, Kakinada, Andhra Pradesh. December 11.
- Jeelani, M. M. 2000. *Workshop on Medicinal Plants Survey in East Godavari*. Andhra Pradesh Forest Department, Rajahmundry. February 7.
- John Joseph, S. 1993. Participated in ISPGR Dialogue on developing national policy for plant genetic resources. NBPGR. New Delhi
- John Joseph, S. 1998. Biodiversity Conservation Prioritisation Project (BCPP) National workshop and steering committee meeting. World Wide Fund for Nature-India, New Delhi, 4 - 6 February.
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- Rao, C. S. 2003. *Workshop on Practical HPLC Trouble Shooting*. LC Resources Inc. (Japan), Chennai. October 14.

- Rasheed, P. A. 2006. *Karshika Rangam Workshop*. Farm Information Bureau, Regional Office, Vellimadukunnu, Kozhikode. December 7-9.
- Ravishankar, T. 2000. *International Symposium on Participatory Plant Breeding and Participatory Plant Genetic Resources Enhancement: An Exchange of Experiences from South and South East Asia*. CGIAR, Pokhra, Nepal. May 1-5.
- Ravishankar, T. 2000. *Workshop on Biodiversity Conservation in Andhra Pradesh*. Andhra Pradesh Forest Department, Hyderabad. February 4-5.
- Ravishankar, T. 2004. *International Course on Wetland Management*. International Agriculture Centre, Wageningen, Netherlands. September 27-October 8.
- Ravishankar, T. 2004. *National Committee Meeting on Preparation of Long Term Policy and Action Plan for Conservation of Wetlands*. Ministry of Environment and Forests, Government of India, New Delhi. January 28.
- Ravishankar, T. 2004. *Seminar on Sir Arthur Cottons' Vision on River Water Management for Food Security*. P. R. Government College, Kakinada, Andhra Pradesh. May 15.
- Ravishankar, T. and M. M. Jeelani. 2000. *Workshop on National Environment Awareness Programme for Youth*. Nehru Youth Centre, Kakinada, Andhra Pradesh. February 29.
- Ravishankar, T. and N. Srinivasa Rao. 1997. *Workshop on strategy planning for post harvest fisheries*. Organised by The Bay of Bengal Programme. Kakinada. 29 -30 December.
- Ravishankar, T. *Workshop on Strategy Planning for Post-harvest Fisheries in Andhra Pradesh*. Organised by Govt. of Andhra Pradesh and DFID Post Harvest Fisheries Project, ODA/ BOBP, Kakinada. 29 - 30 December.
- Remesh, M. 2007. *National Conference on Intangible National Heritage and Museums*. Regional Museum of Natural History and Directorate of Tourism, Calicut. April 18-20.
- Remesh, M. 2007. *National Workshop on Prioritisation and Characterisation of Fast Growing Native Tree Resources*. Ministry of Environment & Forests, Government of India and Institute of Forest Genetics and Tree Breeding, Coimbatore. August 8-9.
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- Rengalakshmi, R. 2002. *National Seminar on Organic Farming*. EXIM Bank, Central Leather Research Institute, Chennai. May 23-24.
- Rengalakshmi, R. 2002. *Online Course on Integrated Pest Management in Cotton*. Asia Pacific Regional Technology Centre Professional Development for Agriculture. Chennai. June 24-August 2.
- Rengalakshmi, R. 2002. *Workshop on Climate Variability and Food Security*. International Research Institute for Climate Prediction, University of Columbia, New York. July 8-26.
- Rengalakshmi, R. 2004. *First Consortia Meeting on Commonwealth of Learning L3 Project*. TN Agricultural University, Coimbatore. September 26.
- Rengalakshmi, R. 2004. *Regional Workshop on ICT for Community Empowerment through Non-Formal Education*. Vientiane, Lao PDR. June 22-25.

- Rengalakshmi, R. 2006. *International Meeting on Re-Engineering Development: Engendering ICTs - Global Efforts for Local Impact: Moving from Knowledge to Action*. UNESCO, Paris. November 12-14.
- Rengalakshmi, R. 2006. *Regional Workshop on ICT for Community Empowerment through Non Formal Education*. United Nations Educational Scientific and Cultural Organization, Solo, Indonesia. November 20-24.
- Rengalakshmi, R. 2006. *Workshop on Community Knowledge Service*. Ecoagriculture Partners, United Nations Development Programme and GTZ. Berlin, Germany. September 7-8.
- Rengalakshmi, R. 2007. *Community Knowledge Service – International Steering Committee and CKS Asia Launch Meeting*. Foundation for Revitalisation of Local Health Traditions (FRLHT), Bangalore. October 21-22.
- Rengalakshmi, R. 2007. *Global Knowledge Partnership Meet Workshop*. GKP, Kuala Lumpur. December 11-13.
- Rengalakshmi, R. 2007. *International Task Force Meeting on Gender and ICT*. Convention Center, Kuala Lumpur. December 9-10.
- Rengalakshmi, R. 2007. *Organic Agriculture, Marketing and Organisation Building*. International Competence Centre for Organic Agriculture, Bangalore. September 24-25.
- Robert. P. Finch, Balakrishna, P. and Neil McRoberts. 1994. "Field collection and molecular characterization of *Porteresia coarctata Tateoka*". Sixth Annual Rockefeller Foundation Rice Biotechnology Meeting, Bali, Indonesia. 15 - 21 May
- Rocks. National Geophysical Research Institute (Hyderabad), Dindigul. February 20-22.
- Rosario, D. 2006. *Training on Watershed Based Land Use Planning for Sustainable Development*. National Bureau of Soil Survey & Land Use Planning, Nagpur. September 18-30.
- Rosario, D. 2008. *Tata-ICRISAT-ICAR Project Review and Planning Meeting on Productivity Enhancement Initiatives in India*. ICRISAT, Patancharu. April 24-26.
- Rukmani, R. 2004. *Workshop on Results of the Census of India 2001*. Office of the Director of Census Operations, Chennai. July 11
- Rukmani, R. 2005. *National Workshop on Refining Indicators of Bhopal-India Process and Implementation Strategy of C&I for SFMin India*. Indian Institute of Forest Management, Bhopal. March 10-11.
- Rukmani, R. 2007. *National Seminar on Agrarian Crisis: Causes and Remedies*. National Centre for Agricultural Economics and Policy Research, New Delhi. August 1-2.
- Sajeev, V. P. and V. Balakrishnan. 2003. *National Training on Local Level Innovation Documentation*. National Innovation Foundation, Ahmedabad. January 19-21.
- Saleth, R. Maria. 1991. *Factors affecting farmers' decision to buy groundwater: empirical evidence from the Indo-Gangetic Region*. Paper presented at the 51<sup>st</sup> Annual Meeting of the Indian Society of Agricultural Economics, Hyderabad, India. December 18 -20
- Saleth, R. Maria. 1992. *Information: A key input for Sustainable Development. Interdisciplinary Dialogue on New Technologies: Reaching the Unreached- II*. Information Sciences and Technology. CRSARD, Madras. India. January 20-23.

- Saleth, R. Maria. 1992. Resource Person. International Trainers. Training Programme for the Conservation of Mangrove Forest Genetic Resources, CRSARD, Madras, India. 16- March – 22 May.
- Saleth, R. Maria. 1992. Resource Person. Senior Level Training Programme on the Application of Bioindicators for the Conservation of Biodiversity, CRSARD, Madras, India. May 4 – 22
- Saleth, R. Maria. And J. B. Braden. 1992. Minimizing the Potential Distortions in a Spot water market: a Multilateral Bargaining Approach. *Conference on Water Quality/Quality Disputes and their Resolutions*. Washington D. C. May 2-3.
- Saleth, R. Maria. And M. S. Swaminathan. 1992. Sustainable Livelihood Security Index: a Litmus test for Sustainable development. *International Conference on the Concept and Measurement of Sustainability*. The Bio-Physical Foundation, Washington D. C. June 22-25.
- Sanjay V. Deshmukh. 1993. (a) “Mangrove biodiversity: genetic resources for conservation”; (b) “Development of mangrove ecosystem management plan”. Lectures delivered as resource person during UNESCO curriculum workshop on Management of Mangrove Ecosystems and Coastal Protection, Andhra University, Visakapatnam. 27 September - 3 October
- Sanjay V. Deshmukh. 1993. Plant genetic resources of coastal ecosystems: conservation issues. ISPGR Dialogue on “Plant genetic resources: developing national policy”, NBPGR campus, PUSA Institute, New Delhi. 1 - 2 December
- Sankaramurthy, S. 2000. *National Committee Meeting on Mangroves and Coral Reefs*. Ministry of Environment and Forests, New Delhi. August 30.
- Sankararamasubramanian, H. M. 2001. Consultancy Meeting on Low Cost Tissue Culture. IAEA Laboratories, Vienna, Austria. October 8-12.
- Santhamurthy, P. 2006. *Entrepreneurial Training on Biofertilizer Production and Quality Control*. TNAU, Coimbatore. October 30-November 3.
- Santhamurthy, P. 2007. *Leaders Retreat for Community Based Organisation*. DHAN Foundation, Madurai. September 28-29.
- Santhamurthy, P. 2007. *Workshop on Small and Micro Enterprise Competitiveness through Cluster Development Options and Interventions*. TANSTIA, Chennai. February 7-8.
- Seenivasan, R. 2002. *Seminar on Weather and Climate: Perspectives from Space*. Indian Meteorological Society, Ahmedabad. September 25.
- Seenivasan, R. 2002. *Training Programme on Remote Sensing Application Tools in Precision Farming*. Space Application Centre (SAC), Indian Space Research Organisation (ISRO), Ahmedabad. September 23-October 4.
- Seenivasan, R. 2003. Training Programme on Onion Cultivation Methods. National Horticulture Development Foundation, Oddanchatram. October 17.
- Seenivasan, R. 2003. Training Programme on Remote Sensing Application Tools in Precision Farming. SAC, ISRO, Ahmedabad. September 15-20.
- Seenivasan, R. 2003. Workshop on Farmers’ Day Programme. Tamil Nadu Agriculture University, Coimbatore. May 31.

- Seenivasan, R. 2004. Conference on Post Harvest Technologies for Rural Development. Gandhigram Rural University, Gandhigram. February 12-14.
- Sekar, K. 1993. Participated in the training programme on Integrated Pest Management of Horticultural Crops. Indian Institute of Horticultural Research, Bangalore. 1 - 7 December
- Sekar, K. 1994. "Enhancing local capacities for sustainable irrigation water use"./Paper presented at national seminar on Irrigation Water Management in Future, Irrigation Management Training Institute, Tiruchirappalli. 27 - 28 January
- Sekar, K. 1994. Participated in the training course on Commercial Vegetable Production. Malaysian Agricultural Research and Development Institute, Kuala Lumpur. 13-21 June
- Selvakku, M. 2002. *Symposium on Seaweed Research and Utilization*. Seaweed Research and Utilization Association (Mandapam), Bharathidasan University, Trichirappalli. August 16-18.
- Selvam, V. 1993. Participated in the UNESCO regional planning council meeting for ecosystem rehabilitation. Bangalore. 9 - 13 November
- Selvam, V. 1993. Participated in the UNESCO workshop on Management of Mangrove Ecosystem and Coastal Protection. Visakapatnam. 27 September - 3 October
- Selvam, V. 1994. Resource person IDRC preimplementation workshop on Coastal Ecosystems (South Asia) Project. New Delhi. 7 - 8 June
- Selvam, V. 2001. International Workshop Mangroves and Fisheries. ICLARM, Penang, Malaysia. October 22-24.
- Selvam, V. 2002. Preparatory meeting for World Summit on Sustainable Development. Bali, Indonesia. June 2-3.
- Selvam, V. 2003. *Regional Workshop on Global Programme of Action for the Protection of the Marine Environment from Land-based Activities*. United Nations Environment Programme, Colombo. April 28-30.
- Selvam, V. 2007. *National Workshop on Tsunami Risk Management*. National Disaster Management Authority, Government of India, New Delhi. October 31.
- Selvam, V. 1996. *Assessment of Technological Needs for Sustainability*. Expert meeting, Scheveningen, The Netherlands. 5-7 February
- Selvamukilan, B. 2002. *Training Programme on Mass Production of Trichoderma viride towards an Entrepreneurship to Ilayathendral Women Self Help Groups, S. Puthur and Initiation of the Trichoderma Unit in S. Puthur*. Tamil Nadu Agricultural University, Coimbatore. December 18-23.
- Selvamukilan, B. 2003. Training Programme on Coffee Culture. Coffee Board, Thandikudi, Dindigul. September 1-9.
- Selvamukilan, B. 2003. Training Programme on Hill Banana and Acid Lime Cultivation. Horticultural Research Station, Thadiyankudisai. July 31.
- Selvamukilan, B. 2003. Training Programme on Mass Production of Pseudomonas Fluorescens. Tamil Nadu Agriculture University, Coimbatore. November 3-7.
- Selvamukilan, B. 2004. Conference on Sustainable Agriculture (Tamil Nadu Agricon 2004). Periyar Maniyammai Engineering College, Thanjavur. February 7.

- Selvamukilan, B. 2008. *Training Programme on Low Cost Cattle Feed Production*. Tamil Nadu Veterinary College and University, Namakkal. February 26-28.
- Selvamukilan, B. 2008. *Training Programme on Nesolynx thymus (Parasitoid of Silkworm) Production*. Regional Sericulture Research Station, Salem. February 4-7.
- Sengottuvel, D. 2005. *Organic Farming Training Programme*. KVK, Gandhigram. August 7-13.
- Senthil Kumar, V. 2004. National Symposium on Recent Trends in Fisheries Education and Research. Fisheries College and Research Institute, Thoothukkudi. December 4.
- Senthil Kumar, V. 2005. Aqua India 2005: Crop Review on Tiger Shrimp and Scampi. Society of Aquaculture Professionals, Nellore. February 25-26.
- Senthilkumar, V. 2007. AQUAINDIA-2007. Society of Aquaculture Professionals, Chennai. September 27-28.
- Senthilkumaran, S. 1999. *International Institute of Communications Annual Conference* Kuala Lumpur. September 4-9.
- Senthilkumaran, S. 2006. *Outcome Mapping Training*. International Development Research Center (IDRC), Colombo, Sri Lanka. March 27-31.
- Senthilkumaran, S. 2006. *Stakeholder Meeting CSO/CGIAR Forum*. Washington D.C. December 5-7.
- Senthilkumaran, S. 2007. *3rd Global Knowledge Conference*. Global Knowledge Partnership, Kuala Lumpur, Malaysia. December 9-13.
- Shaleesha, A. 1999. *First National Conference on Aquatic Biotoxins*. Industrial Toxicology & Research Centre, Lucknow. November 25-26.
- Shanthakumar Hopper, R.S. 1992. Participated in the Workshop on Management of NGOs and Rural Development Projects, BAIF Research Foundation, Pune, 7-12 December 1992.
- Shanthakumar Hopper, R.S. and K.N.N.S. Nair, 1993. "Biovillages - a new approach to sustainable agriculture" Dialogue on Ecotechnology and Rural Employment, M.S. Swaminathan Research Foundation, Madras, 12-15 April 1993.
- Shanti, Duraisamy. 2007. *Sustaining SHG Federations*. DHAN Foundation, Madurai. September 27
- Sharada, S. 1994. "Individuals and Gender Issues". Paper presented at the special /- focus workshop on Prioritizing Action for Gender Justice, Madras Waterloo University Linkage Programme, Department of Geography, University of Madras. 16 - 18 March
- Sharada, S. 1994. Participated in the design workshop on Panchayat Training Module, Kerala Institute of Local Administration, Trichur. 7 - 8 April
- Sivakumar, A, 2008. Training programme on Decentralised Disaster Risk Management, Colombo, Sri Lanka, February 21-23.
- Sivakumar, A. and Vedamoorthy. 2007. *TNAU-CIDA-McGill University – Industry Meet on Food Processing and Post Harvest Technology*. Tamilnadu Agricultural University, Coimbatore. June 25.
- Sivakumar, M. N. 2006. *District Level Discussion on Non Renewable Energy Sources*. Namakkal Collectorate, Namakkal. November 28.



- Sivakumar, M. N. 2006. *State Level Seminar on Tribals, Forest and Futures*. Department of Future Studies, Gandhigram Rural University, Gandhigram. December 11.
- Sivakumar, M. N. 2007. *Conservation and Co-Creation*. The Covenant Centre for Development and CESC Campus, Madurai. August 1-2
- Sivakumar, N. 1995. *Advance irrigation and soil conservation*. Course conducted by Consulate General of Israel. Organised by Water Technology Centre, Coimbatore. 4-15 December.
- Sivakumar, N. 1995. Wasteland development. Trainers training programme for conservation of biodiversity held at Ruhsa, Vellore, India. 18 October.
- Sivakumar, N. 1996. Agroforestry and Wasteland development. Workshop on biodiversity and environmental health held at Ruhsa, Vellore, India. 28 May.
- Sivakumar, N. 2007. *Industry Conference on Driving the Next Agri Revolution*. Confederation of Indian Industry and Chennai Trade Centre, Chennai. November 26-27.
- Sivakumar, N. and Durai Swaminathan. 1994. Problems and Prospects of ground /' water utilisation. Paper presented at State level seminar, IMTI, Trichy. 27 - 28 January
- Sivakumar, P. 2007. *3rd Global Knowledge Conference*. Global Knowledge Partnership, Kuala Lumpur, Malaysia. December 11-13.
- Sivan, V. V. 2008. *Discussion on the PBR Format designed by the National Biodiversity Authority*. Kerala State Biodiversity Board, Thiruvananthapuram. February 18.
- Sivan, V. V. 2008. *Field Course on Interdisciplinary Approaches and Tools for Ecological Monitoring of Natural Resources and Livelihoods*. Keystone, Kothagiri. May 5-14.
- Sivan, V. V. 2008. *Training Course on Project Planning and Writing*. ADWANA, Thiruvananthapuram. May 8-10
- Sivan, V. V. and P. A. Mohammed Rafeek. 2006. *Establishing an Agro Processing Unit in Wayanad*. Taj Residency, Calicut. September 2.
- Sivan, V. V., M. K. Ratheesh Narayanan and Gipson Makil. 2006. *Project Monitoring Training*. Karl Kubel Institute, Coimbatore. November 27-29.
- Sophia, J.D, 2008. Training programme on Decentralised Disaster Risk Management. Practical Action, Colombo, Sri Lanka, February 21-23.
- Srinath, J. 2007. *Community Radio for Health Care, Education and Livelihood Generation*. India International Centre, New Delhi. April 16-17.
- Srinath, J. 2007. *Global Knowledge Partnership (GKP) South Asia Partners' Meeting and Discussion on Preparation for GK3 Global Conferencing*. BRAC Centre, Dhaka, Bangladesh. July 15-16.
- Srinivasa Rao, N., B. Manikya Rao and M.M. Jeelani. 1998. Workshop on post harvest Fisheries in Artisanal Sector: the experiences of DFID post harvest fisheries project and future prospects. Organised by Bay of Bengal Programme, Hyderabad. Andhra Pradesh. 16 April.
- Stanley, V.A. 1997. The II International Workshop of Hazardous Waste Management, Organised by Basel Institute of Technology, Switzerland. 1- 18 September.
- Subashini, H.D. 1996. Participated in the Trainers Training course for the part time trainers of the Environmental Training Institute at Tamil Nadu Pollution Control Board, Madras. 13-24 May.

Subashini, H.D. 1996. Participated in the Training Programme on Integrated Environmental Management conducted by Tamil Nadu Pollution Control Board. 13-16 March.

Subashini, H.D. 1998. Training Programme on Operation and Management of Environmental Testing Laboratories. Environmental Training Institute, Tamilnadu Pollution Control Board, Chennai. July 21.

Subbiah, Vijay R. 2001. Drip Irrigation System for Horticultural Crops. Indo-Israel Project on R&D and Demonstration Farm, Indian Agricultural Research Institute, New Delhi. October 29-November 9.

Subbiah, Vijay R. 2001. *Workshop on Designing and Developing Instructional New Media Materials*. Common Wealth of Learning, Pune. April 16-May 2.

Subbiah, Vijay R. 2002. International Groundwater Conference on Sustainable Development and Management of Groundwater Resources in Semi-Arid Regions with Special Reference to Hard

Subbiah, Vijay R. 2003. Interactive Workshop on Adaptable Models for Food and Agri-Business Growth. Confederation of Indian Industry, Chennai. September 26.

Subbiah, Vijay R. 2003. Workshop on Market Access and Fair Trade is possible for Producer Groups from Marginalised Communities. Indo-American Centre for International Studies, Osmania University Campus, Hyderabad. August 21-23.

Subbiah, Vijay R. 2004. Interim Board Meeting of the Ecoagriculture Partners. Nairobi, Kenya. September 30.

Subbiah, Vijay R. 2004. National Consultative Meet on Critical Issues Confronting Farmers. NABARD, Hyderabad. August 8-9.

Subbiah, Vijay R. 2004. Preparation of Agriculture Curriculum by the State Resource Centre for Non-Formal, Adult and Continuing Education, TN. State Resource Centre, Chennai. October 14.

Subbiah, Vijay R. 2004. Technical Committee on Continuous Social Assessment Study of the TN World Bank Assisted ICDS Project. ICDS, Chennai. November 19-December 7.

Subbiah, Vijay R. 2004. Working Group on Infrastructure, Input Management, Extension and Pricing Related Issues. NABARD, Hyderabad. October 29-December 23.

Subbiah, Vijay R. 2005. Workshop on Livelihood and Micro-Finance Support for Women in Coastal Fisheries Community in Orissa State. FAO and NABARD Consultancy Service, Bhubaneswar. April 23.

Subbiah, Vijay R. 2006. *National Seminar on Contract Farming and Crop Insurance*. Tamil Nadu Agricultural University, Michigan State University, Anna Institute of Management, Chennai. April 12-13.

Subbiah, Vijay R. 2007. Emerging Agri-Business Opportunities and Risk Management. Indian Bank Management Academy, Chennai. November 1.

Subbiah, Vijay R. 2007. *Infra 2007 – MAP Tomorrow's Chennai – Conference on Fuelling Inclusive Growth through Holistic Regional Development*. Confederation of Indian Industries, Chennai. December 18.

Subbiah, Vijay R. 2007. *Seventh Annual Workshop of Sesame and Niger Research Workers – 2007*. All India Coordinated Research Project Sesame and Niger (ICAR), University of Agricultural Sciences (UAS), Dharwad, Karnataka. April 13-14.

- Subhashini, H. D. 2000. I Jlh *International Conference on International Federation of Organic Agriculture Movement*. FIBL, Basel, Switzerland. August 29-September 3.
- Subhashini, H.D. 1994. "Enhanced salt tolerance of the enzyme peroxidase from Mangrove species". Paper presented at the International Symposia on Stabilised Enzymes and Biosensors. Madras. 1 - 5 March
- Subhashini, H.D. and Natrajan, K. 1994. "Carbon nutrition and production of Carbohydrases as a measure of assessing symbiotic potential of fungi". Paper presented at the Second Symposium on Biology and Biotechnology of Mycorrhizae and Third Asian Conference on Mycorrhizae. Yogyakarta, Indonesia. 18 - 21 April
- Sujana, K. A. 2008. *Training in Botanical Illustration*. Department of Botany, University of Calicut, Calicut, Kerala. March 13-15.
- Swain, S. 2007. *National Level CAMP Workshop on Medicinal Plants of Orissa*. Rural Poverty Research Center Foundation for Revitalisation of Local Health Traditions and (FRLHT), Bhubaneswar. October 7-11.
- Swain, S. 2007. *National Level Multi-Stakeholder Consultative Workshop on Management of the Herbal Wealth of India*. PRAGYA, New Delhi. October 4-5.
- Swain, S. 2007. *Training Programme on Participatory Approaches in Agro-Biodiversity Conservation in Assam*. Assam Agricultural University, Jorhat, Assam. November 19-29
- Swaminathan, M. S., S. Jana and Sanjay V. Deshmukh. 1991. Establishing mangrove Genetic Resources Conservation Centres: A need Tomorrow National Seminar on Conservation and Management of Mangrove Ecosystems with Special reference to Sundarbans, December 6-8 (Communicated)
- Swaminathan, M. S., S. Jana and Sanjay V. Deshmukh. 1992. Developing an International framework policy for the Conservation and Management of Coastal Biodiversity. *6<sup>th</sup> Annual Meeting of the Society for Conservation Biology*. Virginia Tech., Blacksburg, USA. 27 June – 1 July
- Swaminathan, Mina. 1992. Resource Person. Creative Drama in Schools. Madras Crafts Foundation & INTACH, Madras.
- Swaminathan, Mina. 1992. Visiting faculty at the Department of Human Development and Family Studies, M. S. University of Baroda, December.
- Swaminathan, Mina. 1999. *State Level Workshop for Ensuring the Survival and Protection of Girl Child in Tamil Nadu*. Alternative for India Development, Chennai. November 29-30.
- Thamizoli, P. 2002. *National Seminar on Organic Farming*. EXIM Bank, Central Leather Research Institute, Chennai. May 23-24.
- Thangavel, P. 2006. *Agaram Programme*. Covenant Centre for Development (CCD), Madurai. October 14.
- Thangavel, P. 2007. *Soil Health Management Training*. Tamilnadu Agricultural University, Coimbatore. October 16-18.
- Thatoi, H. N. 2001. National Workshop on Managing Natural Resources through Village Level Institutions. Khajuraho, Madhya Pradesh. September 10-12.
- Uma, G. et al. 1993. "Development of sustainable livelihood security index (SLSI) based on socio-economic impact assessment of 15 hamlets in and around Pichavaram mangrove forest, Tamil Nadu,

India". Asia Pacific symposium on Mangrove Ecosystem: Programme & Abstracts. pp 184

Umopathy, Sudha. 1996. Development and environment issues. Training programme at Anna Institute of Management, Madras. 6-10 May.

Usha, B. 2006. *Hands-On Training Programme on Micro-Array and RT-PCR*. Cancer Institute, Chennai. April 5-15.

Velayutham, M. 2002. *FAs Consultant for Establishing Soil Testing Service in North Korea*. Democratic People's Republic of Korea. November 28-December 12.

Vepa, Swarna S. 2002. International Experts Meeting on a Forest Capital Index. Faculty of Environmental Design and Rural Development, University of Guelph and Ecosystem Health, Research and Information on Indicators (EHRII), Toronto. January 23-24.

Vishwanath Patil and Kuruvishetti, M.S. 1993. "High frequency plantlet regeneration from four rabi cultivars of rabi sorghum". Paper presented at the National Symposium on Developments in Plant Molecular Biology, Coimbatore. 29 - 31 December

#### Presentations in Conferences / Symposia

Anand, Ajith. 1996. Marker aided studies for screening genetic stability in micropropagated plants of Piper species. Abstract presented at the National Seminar on Spices Biotechnology, BIOSAAP, Calicut. 24-25 April.

Anil Kumar, N. 2002. Developing a Conservation Garden as a Centre for 'Every Child a Scientist' Programme. *Fifth International Congress on Education in Botanic Garden*. Royal Botanic Garden, Sydney. September 29-October 4.

Anil Kumar, N. and L. Vedavalli. 1996. The Ecosystem people and conservation of medicinal plants: A case study from Siruvani Hills, Tamil Nadu. South Asia conferences on Tribal and Folk Medicinal Plant Resources (Organised by IDRC). Tirupathi. September 4-6.

Appunu, C., N. Rameshkumar, V. R. Prabavathy and Sudha Nair. 2007. Genetic Diversity of Soybean Bradyrhizobia Isolated from India. *48<sup>th</sup> Annual Conference of Association of Microbiologists of India*. Indian Institute of Technology (IIT), Chennai. December 18-21.

Arivudai Nambi, A. 2007. Climate Change: An Emerging Environmental Issue. *Mock UN General Assembly*. American International School, Chennai. October 20.

Arivudai Nambi, A. 2007. Perspectives on Mainstreaming Adaptation Concerns in Indian Agriculture. *Scoping Consultation on Mainstreaming Adaptation Concerns in Agriculture and Water Sectors: Progress and Challenges*. Institute for Global Environmental Strategies (IGES), Hayama, Japan. February 14-16.

Arivudai Nambi, A. 2007. *United Nations Forum on Climate Change Conference (UNFCCC) – CoP-13 Meeting*. Bali, Indonesia. December 3-14.

Arivudai Nambi, A. 2007. Vulnerability Assessment and Enhancing Adaptive Capacity to Climate Change. *National Conference on Impacts of Climate Change with Particular Reference to Agriculture*. Tamilnadu Agricultural University, Coimbatore. August 22-24.

Arivudai Nambi, A. 2008. Adaptation to Climate Change in Semi-Arid Regions. *International Workshop on Climate Change and its Impacts on Flora in the South Asian Region*. National Botanical Research Institute, Lucknow. March 10.

- Arivudai Nambi, A. 2008. *Asia NGO Consultative Meeting on Disaster Risk Reduction*. Asian Disaster Reduction and Response Network, UNDP, UN/ISDR and OXFAM, Bangkok. May 26-29.
- Arivudai Nambi, A. 2008. *Climate Adaptation in the Asian Commonwealth. Conference on Strengthening Role of Civil Society and Media in Climate Change Adaptation and Disaster Mitigation*. All India Disaster Mitigation Institute and Commonwealth Foundation, Chennai. April 23-25.
- Arivudai Nambi, A. 2008. *Consultative Meeting of the Sub-committee on Coastal Zone Management to the Expert Committee Meeting on the Impacts of Climate Change*. National Institute of Oceanography, Goa. March 27.
- Arivudai Nambi, A. 2008. *Enhancing Adaptive Capacity to Climate Change. 95<sup>th</sup> Indian Science Congress*. Visakhapatnam, Andhra Pradesh. January 3-7.
- Arivudai Nambi, A. 2008. *Expert Committee on Impacts of Climate Change*. Ministry of Environment & Forests, New Delhi. May 15.
- Arivudai Nambi, A. 2008. *Global Warming or Global Warning? National Science Day Workshop*. Tamil Nadu Science Foundation, Chennai. February 28.
- Arivudai Nambi, A. 2008. *Joint UN-AIDS-UNEP Consultative Meeting on Aids and Climate Change*. Geneva, Switzerland. May 20.
- Arivudai Nambi, V. 2001. *Agroecosystem Management Strategies in Rainfed Subsistence System: Case Study of Javadi Hills, Tamilnadu. Workshop on Tropical Soil Biology and Fertility (TSBF) Group*. Jawaharlal Nehru University, New Delhi. February 21-23.
- Arivudai Nambi, V. 2001. *Eastern Ghats in Tamil Nadu: Some Biodiversity Issues. National Biodiversity Strategy and Action Plan (NBSAP) for Eastern Ghats in Tamil Nadu*. Department of Plant Science, Bharathidasan University, Tiruchirappalli. March 5.
- Arivudai Nambi, V. 2002. *Agricultural Diversity -Value, Current State, the Major Threats. International Congress on Agriculture and Biodiversity*. Pro- Natura and Friends of the Earth (FOE), Interlaken, Switzerland. June 10-11.
- Arivudai Nambi, V. 2003. *Agro-biodiversity and Protection of Plant Varieties and Farmers' Rights Act 2001. Workshop on Biodiversity Information Management System*. Centre for Ecological Sciences (CES), Indian Institute of Science, Bangalore. January 10.
- Arivudai Nambi, V. 2007. *Agrobiodiversity Hotspots – Some Issues and Concerns. Interactive Workshop on Agrobiodiversity Hotspots and Access and Benefit Sharing*. Annamalai University, Chidambaram. July 19-20.
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- Nair, Sudha. 1997 Workshop on Integrating Paid and Unpaid Work into National Policies. UNDP. Seoul. 28-30 May.
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January 27-7 February.

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- Narayan, L.R.A. 1997. Geo-informatics in relation to remote sensing. National seminar on GIS for planning, Ranganathan Center for Information Studies. Chennai. 12-14 February.
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- Narayanan, Rama. 2007. Women's Multiple Work Roles, Maternity Support and Management of Breastfeeding in Urban Slums in Chennai. *39<sup>th</sup> Annual Conference of the Nutrition Society of India*. National Institute of Nutrition, Hyderabad. November 16.
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- Narayanan, Rama. 2008. Measurement of Undernutrition and Immune Status Assessment. *National Conference on Nutrition and HIV AIDS: From Knowledge to Action*. International Life Sciences Institute India (New Delhi), Nagpur. February 14.
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- Pakkialatchumy, P. and Meera Devi. 2003. ICT and Rural Women. International Conference on Women in the Digital Era: Opportunities and Challenges, Digital Technology and Women's Empowerment. Annamalai University, Chidambaram. December 10-12.
- Palled, Vishwanath. 2002. Micro-credit and Women's Empowerment: MSSRF's Experience. *All India Consultation on Community Enterprises*. Madurai. August 1-2.
- Palled, Vishwanath. 2003. Marketing and Promotion of Microenterprises through SHGs. Commonwealth of Youth. Chennai. July 19.
- Palled, Vishwanath. 2004. Biovillage Concept and Banking Interventions. Programme for Senior Bankers on Partnership between Private Sector and Banks. State Bank Institute of Rural Development (SBIRD), Hyderabad. September 25.
- Palled, Vishwanath. 2004. Biovillage Concept and MSSRF Experience and Exploring Possible Areas of Networking. Meeting on Promoting a Community Food Security Movement. World Vision, Coimbatore. June 30.
- Palled, Vishwanath. 2004. Micro-Finance: A Mechanism for Promotion of Eco-Enterprises for Sustainable Rural Development. Workshop on Micro-Finance. Indian Institute of Forest Management (IIFM), Bhopal. June 23.
- Palled, Vishwanath. 2004. MSSRF Experience in Promoting Eco-Enterprises. World Environmental Day Programme. Chennai Petroleum Corporation Limited, Chennai. June 3.
- Palled, Vishwanath. 2004. Role of Micro-Credit in Sustainable Rural Development and Capacity Building: MSSRF Experience. Interactive Meeting. State Bank of India, Bhopal. June 23.
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Palled, Vishwanath. 2004. Village Industrial Complexes. National Seminar on Agri-Export Processing Zones. Gitam Institute of Foreign Trade, Visakhapatnam. October 29.

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Parasuraman, N. 2003. New Deal for Self-Help Employed for Youth Development. Conference on Youth Development and Self-Help Promotion: Experiences of SAARC Countries. Dhaka, Bangladesh. October 20-23.

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Parasuraman, N. 2003. The 21<sup>st</sup> Century Star of Hope: Agricultural Scientist – M. S. Swaminathan. Annual Conference of Academy of Public Affairs on Tamil Nadu in the New Millennium: Challenges and Responses. University of Madras, Chennai. November 28-29.

Parasuraman, N. 2004. Empowering the Rural Poor through Information Access: Towards Sustainable Development. 2nd International ISYP Conference on Towards a New Paradigm of International Governance. Seoul, South Korea. October 3-4.

Parasuraman, N. 2004. Empowering the Rural Poor through Information Access: Towards Sustainable Development. 54th Pugwash Conference of Science and World Affairs on Bridging a Divided World through International Cooperation and Disarmament. Seoul, South Korea. October 4-9.

Parasuraman, N. 2006. A Food Security and Human Security Perspective in Developing Countries – Involvement of Youth. *Fourth ISYP International Conference on A Region in Transition: Peace and Reform in the Middle East*. Cairo, Egypt. November 9-10.

Parasuraman, N. 2006. A Food Security and Human Security Perspective in Developing Countries – Involvement of Youth. *Fifty-Sixth Pugwash Conference on A Region in Transition: Peace and Reform in the Middle East*. Cairo, Egypt. November 11-15.

Parasuraman, N. 2007. Education, Communication, Training and Capacity Building for the Visually Impaired through Touch and Smell Garden – Unique in MSSRF. *International Conference on e-Health Asia 2007*. Malaysia. February 6-8.

Parasuraman, N. 2007. Every Child a Scientist Programme. *Ninety-Fourth Indian Science Congress: Planet Earth*. Annamalai University, Chidambaram. January 3-7.

- Parasuraman, N. 2007. Successful Establishment of Alternate Livelihoods for the Rural Poor Youth in Coastal Areas. *YES Alexandria 2007*, Alexandria. August 26-30.
- Parasuraman, N. 2008. Every Child A Scientist Programme. *95<sup>th</sup> Indian Science Congress*. Visakhapatnam, Andhra Pradesh. January 3-7.
- Parida Ajay. 2006. Acceptability of Genetically Modified Food: Need for Accelerated Debate and Dissemination of Information. *International Conference on the Implications of the Cartagena Protocol on Biosafety*. BCIL, New Delhi. November 20-22.
- Parida Ajay. 2007. New Technology Access and Options for Poverty Alleviation in Less Favoured Countries of the Asia Pacific Region. *IFAD-NCAF Regional Consultation*. Seoul, South Korea. March 12-16.
- Parida, A. 1998. Biosafety issues in the promotion of biotechnology products in the Asia-Pacific region. National Seminar on Biotechnology for Dryland Agriculture. Hyderabad. 15-18 July.
- Parida, A. 1998. Biotechnology as a means of economic empowerment. Forum on Poverty related Core Data Need for Asia-Pacific region. Kuala Lumpur. 6-9 May.
- Parida, A. 1998. New Technologies for Agricultural Development. International Workshop on Managing Biotechnology in the Time of Transition. Hainan, China. November 1-15.
- Parida, A. 1999. Emerging Priorities in Plant Genome Research in Improving Agricultural Productivity. Plenary Lecture, Genome Summit, 86th Science Congress. Chennai. January 3-7.
- Parida, A. 1999. Genetic Engineering: A Holistic Vision on Socio-Economic Impact. *GMO Asia*. Singapore. September 17-20.
- Parida, A. 1999. Isolation and Characterisation of Salt Tolerant Genes from Mangrove Species. Invited lecture. CIMMYT, Mexico. May 25.
- Parida, A. 1999. Issues and Perspectives of Genetic Engineering in Asia-Pacific Region. *International Conference on Genetic Engineering and its Relevance to Developing Countries*. Basel, Switzerland. November 29 - December 2.
- Parida, A. 1999. Molecular Methods for Monitoring and Evaluation of Biodiversity. *Expert Group of the CBD on Biodiversity Monitoring*. Montreal, Canada. September 26-27.
- Parida, A. 1999. Safety Assessments and Regulation of Genetically Modified Food. *ILSI India Conference on Biotechnology for Sustained Productivity in Agriculture*. Hyderabad. November 1-2.
- Parida, A. 2000. Anticipatory Research for Addressing Problems of Climate Change in the Coastal Regions. *Expert Group Meeting on Climate Change*. British Council, New Delhi. April 26-27.
- Parida, A. 2000. Empowerment: Key to Sustainable Development. *Workshop on Uniting Science and Participation in Research*. CGIAR-PRGA, Nairobi, Kenya. November 5-10.
- Parida, A. 2000. Integrated Gene Management in Mangroves. *Indian Science Congress*. Pune. January 3-7.
- Parida, A. 2000. Issues and Perspectives of GMOs in Developing Countries. *Invited Lecture*. Nutrition Society of India, Hyderabad. December 1-2.
- Parida, A. 2000. Prospects of Vitamin-A Rice in Developing Countries. *Consultation on Development*

- and Popularization of Vitamin-A Rice*. Swiss Agency for Development and Cooperation, New Delhi. October 30-31.
- Parida, A. 2001. Steering Committee Meeting. ICSU panel on GMOs. Manchester. February 21-24.
- Parida, A. 2002. Transgenics for Abiotic Stress Tolerance. *International Symposium on Biotechnology and Social Challenges*. Institute of Engineers, Bangalore. November 21-23.
- Parida, A. 2003. Biodiversity Characterization: User Response. National Seminar on Biodiversity Characterization at Landscape Level. Department of Biotechnology and Department of Space, New Delhi. December 31.
- Parida, A. 2003. Biosciences: A Satisfactory Answer to World Hunger: *Debate Dinner Discussion*. Biovision and World Life Forum, Lyon. April 7-11.
- Parida, A. 2003. Coastal Ecosystem: Challenges and Opportunities. *World Science Festival and International Dialogue to Celebrate Golden Jubilee of DNA Double Helix Discovery*. Department of Biotechnology, Government of India, New Delhi. February 12-14.
- Parida, A. 2003. GMOs and Food in Developed and Developing Countries. Study Seminar:GMO-Threat or Hope? Pontifical Council for Justice and Peace, Vatican, Rome. November 10-12.
- Parida, A. 2003. Sugarcane Biotechnology: Strategies for Developing Salinity Tolerant Cultivars. International Seminar on Sugarcane Genomics and Genetic Transformation. Vasantdada Sugar Institute, Manjari, Pune. August 29.
- Parida, A. 2004. Agricultural Biotechnology: Impact on Crop Diversity. DIVERSITAS Workshop on Greening Agriculture: Biodiversity Conservation during Agricultural Transitions towards Sustainability. Alexandria, Egypt. May 10-12.
- Parida, A. 2004. Biotechnology and Bioprospecting: Why and How? National Seminar - Herbal Focus. Srimad Andavan Arts and Science College, Trichy. January 10-11.
- Parida, A. 2004. Biotechnology and Food Security in Asia: Priorities and Challenges. Second Asian Conference on Biotechnology for Asian Development. RIS, New Delhi. April 7-8.
- Parida, A. 2004. Biotechnology for Public Good. BCIL Workshop on Biotechnology and Biosafety. Biotech Consortium of India Limited, Coimbatore. January 12.
- Parida, A. 2004. Genetic Enhancement of Coastal Ecosystem. Indo-German Workshop on Biotechnology. New Delhi. April 4-7.
- Parida, A. 2005. Biotechnological Approaches for Natural Resource Management in Orissa. Conference on Biotechnology Priorities for Orissa. Government of Orissa, Bhubaneswar. February 12-14.
- Parida, A. 2005. Biotechnology and Crop Improvement. National Symposium on Microbial and Plant Biotechnology. Loyola College, Chennai. February 17-19.
- Parida, A. 2005. Genetic Enhancement of Coastal Ecosystems. International Conference on Biotechnology for Salinity and Drought Tolerance in Plants. Islamabad, Pakistan. March 28-31.
- Parida, A., M. Lakshmi, M. Parani and C.S. Anuratha. 1996. Biotechnology and Biodiversity: Use of molecular markers in the conservation and sustainable utilization of mangrove species. in: proceedings of the X *International symposium on Biotechnology*, Sydney, Australia. 25-30 August.
- Parida, Ajay and Suja George. 2006. Mining Genes for Drought Tolerance. *India-Afghanistan Scientific*

*Symposium on Converting Deserts into Oasis*. National Academy of Agricultural Sciences (NAAS), New Delhi. November 23.

Parida, Ajay. 2007. Biotechnology for Ensuring Food and Nutrition Security. *National Conference on Recent Advances in Biotechnology*. Osmania University, Hyderabad. October 16-17.

Parida, Ajay. 2007. Biotechnology Options for Enhancing Food and Nutrition Security. *Annual Symposium of the National Academy of Sciences*. Central Food Technological Research Institute, Mysore. November 6-8.

Parida, Ajay. 2007. Enhancing Crop Productivity in Saline Soils. *76<sup>th</sup> Annual Meeting of Society of Biological Chemists (India)*. Tirupati. November 25-27.

Parida, Ajay. 2007. Opportunities and Options for Crop Biofortification for Alleviating Micronutrient Malnutrition. *International Symposium on Food Technology for Better Nutrition*. National Foundation for India, New Delhi. November 30-December 01.

Parida, Ajay. 2007. Tissue-Specific Histochemical Localisation of Iron and Ferritin Gene Expression in Transgenic Indica Rice Pusa Basmati (*Oryza Sativa* L.). *Harvest Plus Rice Crop Meeting*. Bangkok. November 3-5.

Parida, Ajay. 2008. Abiotic Stress Tolerance in Plants – Emerging Opportunities. *National Workshop on Abiotic Stress Tolerance in Plants*. Institute of Life Sciences, Bhubaneshwar. March 11-15.

Parida, Ajay. 2008. Biotechnology for Global Public Good. *95<sup>th</sup> Indian Science Congress*. Visakhapatnam, Andhra Pradesh. January 3-7.

Parida, Ajay. 2008. Developing Crop Varieties for Adoption to Climate Change. *95<sup>th</sup> Indian Science Congress*. Visakhapatnam, Andhra Pradesh. January 3-7.

Parida, Ajay. 2008. Ensuring and Enhancing Crop Productivity in Response to Emerging Abiotic Stress Conditions. *Indo-Australian Workshop on Transgenic Crops*. National Institute for Plant Genome Research, New Delhi. April 21-22.

#### Participation in Training Programmes/Workshops

Paul, Diby, S. Bharathkumar and Sudha Nair. 2004. Studies on the Osmo-Tolerance in terms of Repressed/Over Expressed-Protein and Differential Display Gene Expression Profiling in Biocontrol Strains of *Pseudomonas* Spp. 13<sup>th</sup>

Pichavaram mangroves, Tamil Nadu, India. Paper presented at the ECOTONE V Seminar on *Community participation in Conservation, Sustainable Use and Rehabilitation of Mangroves in South Asia*, Ho Chi Minh City, Vietnam. 8-12 January

Poorani, M., L. R. Gopinath and S. Sivakumar. 2005. Folklore Millet Varieties of Kolli Hills and Socio-Economic Development. 2nd National Level Biological Congress on Perspectives and Future Trends in Biological Sciences: BIOFOCI- 2K5. Selvam Arts and Science College, Namakkal. January 7-8.

Poverty Reduction and Food Security. National Seminar on Conservation of Agro-Biodiversity in India: The Role of Stakeholders. Dr. G. R. Damodaran College of Sciences, Coimbatore December 27.

Prasad, G. S. G. and Deepa Varma. 2007. Reaffirming State Support – Turning Crisis Into Confidence? *Development Convention*. Madras Institute of Development Studies, Chennai. February 21-23.

- Prashanth, S. R. and A. Parida. 2005. The Role of Biotechnology in the Conservation, Sustainable Use and Genetic Enhancement of Bioresources in Fragile Ecosystem. International Conference on the Role of Biotechnology in the Conservation of Genetic Resources. Turin, Italy. March 5-7.
- Prashanth, S. R., P. A. Mehta and A. Parida. 2005. Gene Prospecting from Mangroves and Genetic Engineering of Mangrove Genes to Crop Plants to Enhance Salinity Tolerance. National Conference on Biotechnological Approaches for Improvement of Horticultural Crops. Kerala Agricultural University, Thrissur. January 11-13.
- Punitha, S. 2008. Distribution of Mangroves in Tamil Nadu – Analysis through Remote Sensing. *National Seminar on Hyperspectral Remote Sensing Data on Natural Resource Management*. Annamalai University, Chidambaram. February 13-15.
- Radha, R. and M. S. S. Mohan. 2000. Major Essential Oil Components of Two Species of *Syzygium*- *S. travancoricum* and *S. tamilnadensis*. *Centennial Conference on Spices and Aromatic Plants*. Calicut, Kerala. September 20 -23.
- Radha, R., M. S. S. Mohan, and Ajith Anand. 1999. Antifungal Properties of Crude Leaf Extracts of *Syzygium travancoricum*. *National Seminar on the Research and Development in Aromatic Plants: Current Trends in Biology, Uses, Production and Marketing of Essential Oils*. CIMAP, Lucknow. July 30-31.
- Rajagopalan, S. 1998. Policy and Research Issues Relating to Micronutrients. UNICEF Seminar. Chennai. September 2.
- Rajagopalan, S. 1999. Food and Nutrition Security Challenges in the Next Millennium. *Vasanthidevi Endowment Lecture*. Ethiraj College, Chennai. July 23.
- Rajagopalan, S. 2000. Health and Nutrition Challenges in the Next Decades. *Millennium Conference on Population, Development and Environment Nexus*. New Delhi. February 14-16.
- Rajakani, S. 2000. Salinity Tolerance Levels of the Post-Larvae of Freshwater Prawn *Macrobrachium rosenbergii*. *National Workshop on Aquaculture of Freshwater Prawn*. Central Institute of Fisheries Education and College of Fisheries Science, Nellore. February 8-9.
- Rajakani, S., H. M. SR. Subramanian, C. Srinivasa Rao, Ajay Parida and P. Eganathan. 2006. An Integrated Approach for Plantation, Management and Sustainable Utilization of Coastal Mangrove Forest: A Community Based Analysis. *EU-INDIA ECCP-NETFOP Project Conference on Planted Forests: Ecosystem Goods and Services*. Forest Research Institute (ICFRE), Dehradun. December 13-15.
- Rajalakshmi, S. 2003. Every Child as a Scientist. Session on Science for School Children. Indian Science Congress, Bangalore. January 3-7.
- Rajamohan, K. G. 2002. A Continuing Education Programme for Practising Professionals. *National Workshop on Communication for Social Change*. Shristi School of Arts, Design and Technology, Bangalore. May 6-10.
- Rajamohan, K. G. 2003. ICT for Employment Opportunities: Special Reference to Information Villages in Pondicherry. Workshop of the International Labor Organization. ILO, New Delhi. August 23.
- Rajamohan, K. G. 2003. MSSRF Experience in OKN Experiment in Pondicherry. *International Conference on OKN Experiment*. One World International (London), Senegal, West Africa. March 3-8.
- Rajamohan, K. G. 2003. Women Cyber Center. Seminar on Small Business Big Opportunities: Profitable Ideas for Entrepreneurs. Industrial and Technical Consultancy Organization of Tamil Nadu Limited,



Chennai. June 6-7

Rajkumar, R. 2007. Role of Self-Help Groups (SHGs) in Increasing the Female Literacy Rate. *State Level Seminar on Developing Strategies for Improving Female Literacy Rate in Tamilnadu*. State Resource Centre (SRC), Alagappa Chettiar Technical College, Alagappa University, Chennai. February 26-27.

Rajmohan, K.G. 1996. Scio-Demographic Charter- Entitlements Database. Paper presented at the National Consultation on Control over Resources as a Form of Livelihood Security of Marginalized Groups – Especially Women, Mumbai India. 14-15 December.

Raman, K. V. 2000. Sustainable Food and Agricultural Production Including Land Use and Sustainable Development. *Millennium Conference on Population, Development and Environment Nexus*. New Delhi. February 14-16.

Raman, K.V. 1998. Role of Agricultural Universities in Rural Development: Indian Scenario. Regional Meeting on the Role of Universities for Rural Development. Beijing, China. September 14-17.

Raman, K.Y. 1998. Sustainable Agriculture for Food Security. IV International Food Convention. Mysore. November 24-27.

Raman, K.Y. 1999. Food Security and Augmentation of Food Resources. International Course on Nutrition. National Institute of Nutrition, Hyderabad. January 21.

Raman, Saroja and Raman, K.V. 1998. Soil Quality Audit for Resource Conservation in Indian Agriculture. Workshop on Ecological Responsibility. Council for Social Development. New Delhi. November 16-19.

Ramasubramanian, R. 2006. Participatory Mangrove Conservation and Management in Andhra Pradesh, India. *International Conference and Exhibition on Mangroves of Indian and Pacific Oceans (ICEMAN 2006)*. Maritime Institute of Malaysia (MIMA), Kuala Lumpur, Malaysia. August 21-24.

Ramasubramanian, R. 2006. Potential Role of Mangrove Forest Resources in Improving the Livelihoods of the Fishermen Community: Policy Issues. *Consultation Workshop on Wastelands: Review and Options for Development and Enhancing of Livelihood Opportunities in Southern India*. Society for Promotion of Wastelands Development (SPWD), New Delhi and National Institute of Rural Development (NIRD), Hyderabad. October 31-November 1.

Ramesh Kumar, N. and Sudha Nair. 2006. Isolation and Characterisation of Plant Growth Promoting Bacteria from Mangrove Ecosystem. *Second Asia Pacific Marine Biotechnology Conference*. NIOT, Cochin. November 2-5.

Rameshkumar, N. and Sudha Nair. 2007. *Vibrio porteresiae* sp. nov., A Novel

Rangarajan, Sun ita and Sudha Nair. 2000, Multiple Stress Tolerant *Pseudomonas* sp. from Agricultural Soils. *National Symposium on "Microbes in Bioremediation for Eco-friendly Environment in the New Millenium"*. Centre for Advanced Studies in Botany, University of Madras, Chennai. Jan 6-7

Rao, C. S. 2003. Challenges in Food Production. *Conference on Biotechnology, Food and Nutrition*. Indo-American Chamber of Commerce, Chennai. May 2-3.

Rao, C. S., Radha Rajagopalan, P. Eganathan, H. M. Sankararamasubramanian, Latha Rangan and P. C. Kesavan. 2001. Strategies and Modern Tools for the Conservation of Medicinal Plants. *National Symposium on Medicinal Plants-2001*. Department of Botany, St. Joseph's College, Tiruchirapalli. February 5-6.

- Rao, C.S., P. Eganathan, Ajith Anand, R Latha and P. Balakrishna. 1998. Application of biotechnology and classical breeding methods in the genetic enhancement of mangroves. International Symposium on Mangrove Ecology and Biology. Safat, Kuwait. 25 -27 April.
- Ravishankar, T. 1996 Traditional innovations and mechanisms of tribal communities plant genetic resources. National Seminar on Tribal Ecology and Development, Department of Anthropology, University of Madras. Madras. India. 13-14 September.
- Ravishankar, T. 1996. Ethnobotanical studies in the utilization and conservation of Plant Genetic Resources by tribal people in South India. The UNESCO Training Course on Quantitative methods in Ethnobiology, Nairobi, Kenya. 21 August –1 September.
- Ravishankar, T. 1996. Ethnobotany of Kadars and Muthuvans in South India. V International Congress of Ethnobiology, Nairobi, Kenya. 2-6 September.
- Ravishankar, T. 1996. Farmers and NGO's meeting on on-farm biodiversity. Academy of Development Sciences, Karjat, Maharashtra. 17-19 September.
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- Ravishankar, T. 1997. Mangrove forest survival and its relation to water regime. Workshop on Coastal Hydrology Development Capabilities for Hydrological Studies. National Institute of Hydrology, Kakinada. 22 - 24 September
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- Selvam, V. 1998. Coastal environment and pollution. National Seminar on Marine Pollution Organised by the Coast Guard Chennai. 5 June.
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Development: Challenges for the 21st Century. Barcelona, Spain. June 9-10.

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Senthilkumaran, S. 2007. Telecentre Networks, Network Strategic Plan, Network Structure and Governance. Consultative Meeting. The Establishment of Regional Knowledge Network of Telecentres in Asia-Pacific, Bangkok. September 27-28.

Shaleesha, A 2000. Gender and Labour Issues in Aquaculture - A Case Study. National Conference on Fisheries Economics, Extension and Management. Central institute of Fisheries Education, Mumbai. January 5-6.

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of conservation and use of plant genetic resources. National Level Consultation on Development of Protocols for Access to Biodiversity and Consequent Benefit sharing. Indian Institute of Management, Ahmedabad. 10 - 12 April.

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Swaminathan, Mina. and Rama Narayan. 1995. Impediments to breast feeding: an analytical review. Paper presented at the *Workshop on empowerment of women for breastfeeding*, NIPCCD. 4 August

Swaminathan, Mina. 1995. Theatre-Communication-Development. Paper presented at the / S. *Asian Workshop on Popular Culture and Development*, UN Volunteers, Delhi. 2-4 May

System Tool for Assessing Rural Development. 2nd National Level Biological Congress on Perspectives and Future Trends in Biological Sciences: BIOFOCI – 2K5. Selvam Arts and Science College, Namakkal. January 7-8

Thamizoli, P. 2002. Cultural Affirmity and Inclusivity of the Irula Foragers of Pichavaram Mangroves, Coromandal Coast, South India. *International Conference on Hunter-Gatherer Studies and the Reshaping of Anthropology*. Edinburgh, U. K. September 9-13.

Thamizoli, P. 2003. Agriculture, Land and Settlement in Tribal Areas. Seminar on Five Year Plans and Welfare Schemes: Socio-Economic Conditions of Tribals of Tamil Nadu. Department of Anthropology, University of Madras, Hogganekal. November 30-December 2.

Thamizoli, P. 2003. Folk Narratives from the Palni Hills: The Pulayans Left Behind the Dead Cattle, Driven to the Mountain's Edge, Shown the Dry Waterhole. Seminar on Livelihood Strategies among Forest-Related Tribal Groups of South India: Contextual Analysis of Local Livelihood Strategies. Department of Social Anthropology, Stockholm University and Centre for Research on Environment, Development, Innovations, Technology and Trade, Mysore. October 17-19.

Thamizoli, P. 2004. Biodiversity and Social Implications. Hill Science Congress and State Level Workshop on Biodiversity. TN Science Forum, Coimbatore. October 30-31.

Thamizoli, P. 2004. Community Managed ICT Facilitated Literacy Programme and Community Empowerment. Workshop on ICT for Community Empowerment through Non- Formal Education. Vientiane, Lao PDR. June 22-25.

Thamizoli, P. 2004. Globalization and Local Farmers: The Role of ICT in Building Human Capital for Sustainable Livelihood. Third Pan-Commonwealth Forum on Open Learning. Dunedin, New Zealand. July 4-8.

Thamizoli, P. 2004. Sustainable Livelihoods. Seminar on Cities – Engines of Rural Development. Centre for Human Settlements, Anna University, Chennai. October 1.

Thamizoli, P. 2005. Humanitarian, Economic and Environmental Aspects of Disaster Management. State Level Workshop on Disaster Management. TN Science Forum, Chennai. February 12-13.

Thamizoli, P. 2005. Self Help Groups and Social Capital: Impact of Social Capital on Gender Issues. National Seminar on The Concept of Social Capital and its Relevance for Theory, Research and Policy. Pondicherry University, Pondicherry. March 10-11.

Thamizoli, P. and R. Rengalakshmi. 2005. Small Business Developments and Pro-Poor Growth: The Challenges and Realities. Second Commonwealth India SME Competitiveness Development Programme. The National Small Industries Corporation Limited, Chennai. April 17-22.

Thamizoli, P. and R. Rengalakshmi. 2005. Participation Enables or Burdens the Community. National Seminar on Experiencing Participation: A Critical Review. University of Madras, Chennai. February 28-March 1.

Thamizoli, P. and Sylvia Jasper. 1998. Ecology and Equity: The Malaimalar and the Environment of Anamalai Hills, South India. 8th International Conference on Hunting and Gathering Societies.

- National Museum of Ethnology. Osaka, Japan. October 26-30.
- Thamizoli, P., R. Rengalakshmi, K. Senthil Kumar and T. Selvaraju. 2006. Surviving Disasters and Supporting Recovery: Disaster Preparedness in Agriculture. *Workshop on Disaster Preparedness in Coastal Agriculture*. NGOs Coordination and Resource Centre, Nagappatinam. August 3-4.
- Thiagarajan, A.R. 1996. World Poultry Congress and International Poultry Exhibition New Delhi. 2-8 September.
- Urn apathy, Sudha. 1995. Women and integrated intensive farming systems. Paper presented at the *International conference on the impact of climate change on food and livelihood security, Agenda for Action*, MSSRF, Madras. 4-6 December. June
- Usha, B., Gayatri Venkataraman and Ajay Parida. 2008. A-Nucleo-Cytoplasm Colocalised Type 2 Metallothionein from *Prosopis juliflora* Confers Heavy Metal Tolerance to Transgenic Tobacco. *Plant Biology 2008*. Mexico. June 26-July 01.
- Varma, Deepa. 2006. Good Ecology Is Good Economics. *Seventh Biennial Conference on Ecosystems and Wellbeing*. The International Society of Ecological Economics, New Delhi. December 16-18.
- Vedamoorthy, A., L. R. Gopinath and R. V.Bhavani. 2005. Maize Area Expansion through Community Feed Grain Bank. 2nd National Level Biological Congress on Perspectives and Future Trends in Biological Sciences: BIOFOCI- 2K5. Selvam Arts and Science College, Namakkal. January 7-8.
- Velayutham, M. 2003. Dr. Glen Anderson Lecture on Needs and Problems of Resource Poor Farmers in Marginal Lands as a Key Contribution to Food Security. *International Congress of Plant Pathology*. Christchurch, New Zealand. February 3-5.
- Velvizhi, S. and V. Selvam. 2003. Community Owned Pearl Culture: An Alternative Income Generating Opportunity for the Poor Fishers in the Gulf of Mannar Region. *First National Pearl Congress and Exposition*. Central Marine Fisheries Research Institute, Cochin. February 5-8.
- Vencatesan, J. and R.J.R. Daniels. 1998. Gender and Biodiversity in a Cultural Landscape: A Case Study in South India. Regional Conference on Gender and Development. Asian Institute of Technology, Bangkok. August 3-6.
- Vencatesan, Jayshree. 1995. Multiple roles of women and coping strategies for child care. Paper presented at the *VII Biennial conference of the Indian Association of Women's Studies*, Jaipur. 27-31 December
- Vencatesan, Jayshree. 1996. Sub-committee Agri and Food Processing of the Confederation of Indian Industry (CII), Madras. 8 August – 12 October.
- Vencatesan, Jayashree. 1996. Consultation on the India Water Sector Programme of the UNDP, Dahod, Gujarat. 12-13 September.
- Vepa, Swarna S. 2006. Rural Development Scenario and Gender Concerns at the Turn of the Century. *Refresher Course on Current Issues in Development for the Universities of the Southern Region and North East Region*. Academic Staff College, University of Madras. November 23.
- Vepa, Swarna S. 2006. Women, Nutrition and Food Security: A Situational Analysis. *Training Program for Achieving Institutional Linkages for Sustainable Nutritional Security and Role of Women*. National Institute of Public Co-operation and Child Development, Natesan Institute of Co-operative Management, Chennai. December 20.

Vepa, Swarna S. 2007. Agricultural Price Policy – Implications to Food Security. *Invited Lecture*. Stella Maris College, Chennai. March 20.

Vepa, Swarna S. 2007. Agriculture and Food Security. *Symposium on Growing Sectoral Imbalances in the Indian Economy*. Madras Christian College, Chennai. September 17.

Vepa, Swarna S. 2007. Education and Health Infrastructure with Special Reference to Women and Children. *Invited Lecture*. Stella Maris College, Chennai. March 20.

Vepa, Swarna S. 2007. Extent of Malnutrition in India with Special Reference to Women and Girl Child. *Two-Day Seminar on Combating Malnutrition Progress, Lacunae and Future Strategies*. Delhi University, Delhi. January 19.

Vepa, Swarna S. 2007. Gender Concerns in Development. *Invited Lecture*. S D N B Vaishav College for Women, Chennai. February 6.

Vepa, Swarna S. 2007. Gender Inequity in Agriculture. *National Symposium on Women in Agriculture*. University of Agricultural Sciences, Bangalore. April 10-12.

Vepa, Swarna S. 2007. Government Policies of Poverty Reduction and Human Resource Development. *Symposium on Pro-Poor Policies for Poverty Reduction*. DHAN Foundation, Madurai. September 28.

Vepa, Swarna S. 2007. Inaugural Address. *Multi-Disciplinary Workshop on Gender Issues*. Madras Christian College, Chennai. March 17.

Vepa, Swarna S. 2007. Policies to Alleviate Agricultural and Rural Distress and Agricultural Price Policy and its Relevance in the Era of Globalisation. *Refresher Course on Contemporary Issues in Development*. Madras School of Economics, Chennai. December 7.

Vepa, Swarna S. 2007. The Impact of Economic Reforms on Agriculture. *Seminar on the Impact of Reforms*. Vivekananda College, Chennai. September 5.

Vijayakumar, Ranjani and L. R. Gopinath. Value Addition to Millets. 2nd National Level Biological Congress on Perspectives and Future Trends in Biological Sciences: BIOFOCI – 2K5. Selvam Arts and Science College, Namakkal. January 7-8.

Vijayalakshmi, B. 2000. Hybrid Rice: Biovillage Experiences. *International Rice Research Conference on Rice Research for Food Security and Poverty Alleviation*. International Rice Research Institute, Manila, Philippines. March 31 - April 3.

### **Videos**

Development of 0-3 yrs child. 4 mins, Discussion starters / Video spot. 1997. Low-Cost No-Cost materials in child education - part IV. Video film on the use of indigenous play materials for learning of young children. 15 mins. 1997.

Enga Patta Kelunga. Cassette of songs on the theme, Burden on the preschool Child. 1996.

Gender Justice and Rights of Women and Children. 7-mins. Discussion Starters/ Video Spots. 1996.

Jnani. Enna Pannikittirunde?-Multiple Roles of Rural Women. 1998. 3.8 mins. (Tamil).

Jnani. Enna Pidikkum?-Understanding the Child's Developmental Needs. 1998. 1.7 mins. (Tamil).

Jnani. Yaar Kaaranam?-Scientific Causes De-termining the Sex of the Child. 1998. 1 min.

Kulavai '97. A profile of women stage artists of Tamilnadu. Video-film. 135 mins. 1997.

Low-cost, No-cost Materials in Child Education. Parts I, II, III – Film on the use of indigenous play materials for learning of young children. 3 X 15 mins. 1997

Thayum Seyum. Audio cassette of songs on the theme 'Development'. of 0-3 yrs children. 1997.

Who will save the Gulf of Mannar? 20 mins. 1999

#### CD-ROMs and Web Sites

Asian Ecotechnology Information Service designed by the Informatics Centre, MSSRF. November 1997; April 1998. ([www.mssrf.org/aeis](http://www.mssrf.org/aeis))

Diseases of Groundnut : a CBT module on CD - ROM. designed by the Informatics Centre, MSSRF in collaboration with ICRISAT. November 1997.

Farmers' Rights Information Service (FRIS) designed by the Informatics Centre, MSSRF. February 1998. ([www.mssrf.org.sg/webfris](http://www.mssrf.org.sg/webfris))

M. S. Swaminathan Research Foundation. *Avvai* - Video Documentation of a Play. 1999. 40 mins. (Tamil).

M. S. Swaminathan Research Foundation. *KULA VAI '99* - Video Documentation of the Workshop. 1999. 59 mins. (Multiple Languages with English Subtitles).

M. S. Swaminathan Research Foundation. *Pavazhakkodi* - Family Conflict. 1999. 40 mins. (Tamil).

M. S. Swaminathan Research Foundation. *Pen Kuzhandaiyin Vazhum Urimai* - Survival of the Girl Child. 1999. 90 mins. (Tamil).

M. S. Swaminathan Research Foundation. *Penungal Oor Pillaigalai* - Role of Panchayats in Child Care Services. 2000. 19 mins. (Tamil).

M. S. Swaminathan Research Foundation. *Reaching the Un reached: Village Knowledge Centres in Pondicherry for Sustainable Food Security*. 2000. 7.21 mins. (English)

This is ICRISAT : a multimedia CD – ROM designed by the Informatics Centre, MSSRF in collaboration with ICRISAT. November 1997.

#### **Web Site**

Farmers' Rights Information Service (FRIS), MSSRF. September 1998. (<http://www.mssrf.org.sg/webfris>).

## Annexure 9

### (a) Balance Sheet for the financial year 2007-2008

M.S.SWAMINATHAN RESEARCH FOUNDATION  
NO.6, THIRD CROSS ROAD,  
TARAMANI INSTITUTIONAL AREA, TARAMANI  
CHENNAI 600 113

#### BALANCE SHEET AS AT 31ST MARCH 2008

LIABILITIES	SCH	2007-2008		2006-2007		ASSETS	SCH	2007-2008		2006-2007	
		RS. P		RS.	P			RS.	P	RS. P	
<b>OWN FUNDS</b>						<b>OWN ASSETS</b>					
CORPUS FUND	12	3,914,124.00		3,206,050.00		FIXED ASSETS	8	61,187,221.10		54,226,535.30	
GENERAL FUND & OTHER FUNDS	13	255,142,500.20		252,995,017.70		INVESTMENTS	9	140,264,000.00		140,264,000.00	
ENDOWMENT FUND	14	335,934,000.00		332,225,000.00		ENDOWMENT INVESTMENTS	9	345,550,000.00		325,000,000.00	
CURRENT LIABILITIES	15	1,691,738.00		291,336.00		CURRENT ASSETS					
						ADVANCES & DEPOSITS	10	18,574,981.54		11,968,680.99	
						CASH & BANK	11	31,106,159.56		57,258,187.41	
						BALANCES					
<b>TOTAL(A)</b>		<b>596,682,362.20</b>		<b>588,717,403.70</b>		<b>TOTAL (A)</b>		<b>596,682,362.20</b>		<b>588717403.70</b>	

ON GOING PROJECTS/CONFERENCES				ON GOING PROJECTS/CONFERENCES.				
PROJECTS BALANCES	16	151,321,949.19		202,450,768.13		9,211,590.68		2,902,470.36
CURRENT LIABILITIES				1,360,331.81				36,344,074.00
						PROJECT ASSETS	10	746,165.71
						CURRENT ASSETS	11	163,818,389.87
						CASH & BANK BALANCE		
<b>TOTAL (B)</b>		<b>151,321,949.19</b>		<b>203,811,099.94</b>		<b>TOTAL (B)</b>		<b>203,811,099.94</b>
<b>GRAND TOTAL (A+B)</b>		<b>748,004,311.39</b>		<b>792,528,503.64</b>		<b>GRAND TOTAL (A+B)</b>		<b>792,528,503.64</b>

ACCOUNTING POLICIES & NOTES FORMING PART OF ACCOUNTS AS PER SCHEDULE 3 APPENDED

N.C. RAJAGOPAL & CO  
Chartered Accountants

Place : Chennai  
Dated:

M.S.SWAMINATHAN  
Chairman

Trustee

SUMITHRA RAVICHANDRAN  
Partner



**(b) Income & Expenditure for the financial year 2007-2008**

M.S. SWAMINATHAN RESEARCH FOUNDATION  
NO.6 THIRD CROSS ROAD,  
TARAMANI INSTITUTIONAL AREA, TARAMANI  
CHENNAI 600 113

**INCOME AND EXPENDITURE ACCOUNT FOR  
THE YEAR ENDED 31ST MARCH 2008**

EXPENDITURE	SCH	2007-2008 RS. P	2006-2007 RS. P	INCOME	SCH	2007-2008 RS. P	2006-2007 RS. P
ADMINISTRATIVE EXPENSES	6	15,084,726.01	11,097,879.36	DONATION- DOMESTIC	1	1,30,000.00	100,100.00
EXPENSES ON ENDOWMENT ACTIVITIES	7	27,379,834.64	22,504,924.82	DONATION- FOREIGN	2	75,912.00	601,170.00
DEPRECIATION	8	6,139,196.00	4,857,254.00	INTEREST INCOME	4	42,943,668.00	36,307,217.99
EXCESS OF INCOME OVER EXPENDITURE FOR THE YEAR TRANSFERRED TO THE GENERAL FUND		2,105,781.40	6,771,322.89	OTHER INCOME	5	7,559,958.05	8,222,893.08
<b>TOTAL</b>		<b>50,709,538.05</b>	<b>45,231,381.07</b>	<b>TOTAL</b>		<b>50,709,538.05</b>	<b>45,231,381.07</b>

ACCOUNTING POLICIES &amp; NOTES FORMING PART OF ACCOUNTS AS PER SCHEDULE 3 APPENDED

N.C.RAJAGOPAL & CO  
Chartered Accountants

Place: Chennai  
Dated:

M.S.SWAMINATHAN  
Chairman

Trustee

SUMITHRA RAVICHANDRAN  
Partner

**(c) Break up details for Corpus investments as on 31st January 2009**

## CORPUS AND ENDOWMENTS

M.S.SWAMINATHAN RESEARCH FOUNDATION  
 Third Cross Road  
 Taramani Institutional Area  
 Chennai 600 113

**CORPUS AND ENDOWMNET FUND AND INVESTMENT  
 AS ON 31st January 2009**

S.No	Particulars of Investments	Rs. In lakhs	Rs. In lakhs
		Fund invested	Amount as yield
<b>A</b>	<b>FOUNDATION - CORPUS</b>	<b>1412.64</b>	<b>220.16</b>
<b>B</b>	<b>ENDOWMENT - FUND</b>		
1	ASSAM GOVT	2.00	0.16
2	BOOTHALINGAM TRUST	4.16	0.26
3	EVERY CHILD A SCIENTIST-TRUST	25.00	2.00
4	CM GRANT	15.00	1.13
5	BARWALE CHAIR ENDOWMENT	75.00	6.34
6	JRD TATA ENDOWMENT	1500.00	135.60
7	UTTARA DEVI CHAIR ENDOWMENT	45.50	3.56
8	HINDU MEDIA ENDOWMENT	100.00	8.00
9	AEN-UNESCO ENDOWMENT	25.00	2.06
10	B.V.RAO CHAIR ENDOWMENT	120.00	9.60
11	FORD CHAIR ENDOWMENT	60.00	4.80
12	FORD ENDOWMENT	1000.00	80.00
13	EQUATOR INITIATIVE AWARD	15.00	1.20
14	ECOLOGY OF HOPE	20.00	1.60
15	NVA TATA MISSION 2007 ENDOWMENT	1031.68	94.24
	<b>TOTAL [B] - ENDOWMENTS</b>	<b>4038.34</b>	<b>350.55</b>
	<b>TOTAL FOUNDATION+ENDOWMENTS</b>	<b>5450.98</b>	<b>570.71</b>

## Annexure 10

### List of Donors (non project support) for the period 1990-2008

#### Founding Donor

Year	Individuals
1990 – 1991	Dr. Manmohan Attavar, Bangalore Dr. Girija Balaji, Madras Dr. Barbara J. Isely, Thanjavur Ms. Sarada Krishnan, Alleppey Ms. Saroja Krishnamurthy, Madras Dr. Rajeswari Mahalingam, Madras Mr. Harshkant S. Mehta, Madras Mr. S. Mohan Das, Madras Mr. T.S. Narayanan, Madras Mr. T. Parthasarathy, Madras Mr. K. Rajiv, Madras Ms. Vasanthi Rajiv, Madras Mr. M.S. Ramdas, Alleppey Ms. Subhalakshmi Ramdas, Alleppey Mr. M.M. Rao, New Delhi Mr. A. Sankar Krishnan, Madras Mr. G.M. Sapra, New Delhi Dr. K. Shyam, Madras Ms. Winnie Shyam, Madras Ms. Malathi Sridhar, Alleppey Ms. Rama Subramanian, Madras Ms. S. Vijaya, Madras
1991 - 1992	Mr. Mohandas, Madras Mr. T. Parthasarathy, Madras Ms. V. Vijaya, Madras Dr. Rajeswari Mahalingam, Madras Dr. Barbara J. Isely, Gandhigram Mr. M.G. Subramaniam, Madras Dr. Ranjit Bhargava, Lucknow Mr. R.S. Hoon, Madras Dr. M.S. Swaminathan, Madras Mr. M.S. Ramdas, Alappuzha Ms. Subhalakshmi Ramdas, Alappuzha

1992 - 1993

Ms. Sarada Ramdas, Alappuzha  
Ms. Malathi Ramdas, Alappuzha  
Dr. S. Bala Ravi, Hyderabad  
Ms. Mina Swaminathan, Madras  
Dr. Rajeswari Mahalingam, Phoenix, Arizona, USA  
Mr. T. Parthasarathy, Madras  
Mr. S. Rajaram, Madras  
Dr. A. Sankaran, Madras  
Ms. Mathuram Bhoothalingam, Madras  
Mr. M.M. Rao, New Delhi  
Mr. Shivaji Velji Kothari, Tokyo, Japan  
Mr. K. Rajiv, Madras  
Ms. Winnie Shyam, Madras  
Ms. Malathi Ramdas, Alappuzha  
Ms. Sarada Ramdas, Alappuzha  
Mr. M.S. Ramdas, Alappuzha  
Ms. Subbalakshmi Ramdas, Alappuzha  
Ms. Nitya Rao, New Delhi  
Dr. P.V. Shenoi, Hyderabad  
Mr. & Ms. Harry Dhaul, Bombay  
Mr. K.N. Shyamasundaran Nair, Thiruvananthapuram  
Mr. Vinoo Hoon, Madras  
Mr. Raman Mahajan, Madras  
Dr. V.L. Chopra, New Delhi  
Dr. M.D. Upadhya, New Delhi  
Dr. S.S. Rajan, Bangalore  
Dr. B.C. Joshi, New Delhi  
Dr. R.N. Sawhney, New Delhi  
Dr. R.P. Singh, Hyderabad  
Dr. V.P. Singh, New Delhi  
Dr. P.S. Bhatnagar, Indore  
Dr. Virendra Kumar, New Delhi  
Dr. Harikrishan Singh, New Delhi  
Dr. J.V. Goud, Dharwad  
Dr. N.P. Mehta, Ahmedabad  
Dr. E.A. Siddiq, Hyderabad  
Dr. N.P. Sarma, Hyderabad  
Dr. H.C. Bansal, New Delhi  
Dr. R.D. Iyer, Kasargod  
Prof. P.C. Kesavan, New Delhi

	Dr. C.R. Bhatia, New Delhi
	Dr. R.P. Sharma, New Delhi
	Dr. R.A. Pai, New Delhi
	Dr. K.U.K. Nampoothiri, Thiruvananthapuram
	Prof. Akshey K. Gupta, Palampur
	Dr. S. Bhaskaran, Pune
	Dr. M.P. Singh, New Delhi
	Dr. S. Nagarajan, New Delhi
1993 - 1994	Dr. M.P. Singh, New Delhi
	Dr. S. Nagarajan, New Delhi
	Dr. K.P.S. Chauhan, New Delhi
	Dr. Sanjay Vasanth Deshmukh, Madras
	Dr. N.P. Sarma, Hyderabad
	Mr. V.S. Aggarwal, Calcutta
	Mr. S.N. Mehta, New Delhi
	Dr. S. Bala Ravi, Hyderabad
	Mr. B.R. Bhansale, Coimbatore
1994 - 1995	Dr. M.S. Swaminathan, Madras
	Dr. S. Rajagopalan, Madras
	Mr. Biswanath Samalo, Bhubaneswar
	Dr. A. Sankaram, Madras
	Dr. Sanjay V. Deshmukh, Madras
	Dr. S. Nagarajan, Karnal
	Mr. G. Venkataramani, Madras
	Mr. N. Sathiah, Madras
	Ms. Kalpana Ramachandran, Madras
	Mr. M.S. Ramdas, Alappuzha
	Ms. Subalakshmi Ramdas, Alappuzha
	Ms. Malathi Ramdas, Alappuzha
	Ms. Sarada Ramdas, Alappuzha
	Dr. Prasanna Kumari Pillai, Delhi
	Mr. M.S. Krishnamurthy, Madras*
	Dr. Rohini Iyer, Kasaragod
1995 - 1996	All Staff Members of MSSRF
	Dr. R.D. Asana, Valsad
	Dr. V. Balaji, Madras
	Ms. Geeta Srinivasan, Madras
	Mr. P.V.R. Krishna Rao, Madras
	Mr. M.S. Krishnamurthy, Madras
	Dr. Manmohan Attavar, , Bangalore

Mrs. Mathuram Bhoothalingam, Madras  
Mrs. Mina Swaminathan, Madras  
Mr. M. Murali Rao, New Delhi  
Dr. S. Nagarajan, Karnal  
Mr. M.S. Ramdas, Alappuzha  
Dr. Sanjay V. Deshmukh, Mumbai  
Dr. A. Sankaram, Madras  
Dr. P.V. Shenoi, Bangalore  
Prof. M.S. Swaminathan, Madras

1996 - 1997

Ms. Annapurna Prasad, Chennai  
Dr. C.S. Anuradha, Chennai  
Dr. V. Balaji, Chennai  
Dr. K. Balasubramanian, Chennai  
Mr. Bhagwan Manior, Mumbai  
Dr. Himansu Ghosh, Thakura  
Dr. S. Jayaraj, Chennai  
Dr. S. John Joseph, Chennai  
Dr. P.C. Josekutty, South Africa  
Prof. L.N. Kailasam, California, USA  
Ms. Kalpana Ramachandran, Chennai  
Mr. I.K. Kejriwal, Calcutta  
Mr. P.V.R. Krishna Rao, Chennai  
Dr. Manmohan Attavar, Bangalore  
Dr. L.R.A. Narayan, Chennai  
Dr. S. Rajagopalan, Chennai  
Mr. C.K. Ramachandran, Chennai  
Mr. M.M. Rao, New Delhi  
Dr. B.N. Samola, Bhubaneshwar  
Dr. Sanjay V. Deshmukh, Mumbai  
Dr. A. Sankaram, Chennai  
Mr. N. Sathiah, Chennai  
Dr. P.V. Shenoi, Bangalore  
Staff Members of MSSRF, Chennai  
Prof. M.S. Swaminathan, Chennai  
Dr. U. Venkateswaralu, New Delhi  
Mr. S. Viswanathan, Chennai

1997 - 1998

Prof. M.S. Swaminathan  
Dr. A.R. Thiagarajan  
Dr. A. Sankaram  
Dr. L.R.A. Narayan

Dr. P.V. Shenoi  
Dr. Sanjay V. Deshmukh  
Mr. K. Rajiv  
Mr. K. Shyam  
Mr. Bhagwan Manior  
Mr. M.M. Rao  
Mr. M.S. Krishnamurthy  
Ms. Nitya Rao  
Ms. S. Sharada  
Ms. Saroja Krishnamurthy  
Ms. Winnie Shyam  
Ms. Kalpana Ramachandran  
Ms. Sudha Umapathy  
Dr. Y.S. Nerkar

1998 - 1999

Prof. M.S. Swaminathan  
Dr. S. Rajagopalan  
Master Ashish R. Barwale  
Mr. Bhagwan Manior  
Dr. P.V. Shenoi  
Ms. S. Sharada  
Ms. Geeta Mehta  
Dr. Maurice F. Strong  
Mr. Utsav Parikh

1999-2000

Prof. M.S. Swaminathan, Chennai  
Employees of Real Image Ltd, Chennai  
Employees of GM Pens Int'l Ltd, Chennai  
Dr KV Raman, Chennai  
Employees of MSSRF, Pondicherry  
Dr. A.R. Thiagarajane, Pondicherry  
Dr. S. Rajagopalan, Chennai  
Ms. S. Sharada, Chennai  
Mr. T. Parthasarathy, Chennai  
Staff of MSSRF, Chennai  
Dr. Murali M. Rao, New Delhi  
Mr. Bhagawan M Maniar, Mumbai  
Dr. P.V. Shenoi, Bangalore  
Mr. H.M. Sankararamasubramaniam, Chennai

2000 – 2001

Ms. Amiya Kesavan, Chennai  
Dr. S. Rajagopalan, Chennai  
Ms. S. Sharada, Chennai

Staff of MSSRF, Chennai

Ms. U. Kalpagam, Allahabad

Mr. Bhagwan M. Maniar, Mumbai

Mr. M.M. Rao, New Delhi

Dr. P.V. Shenoi, Bangalore

Prof. Subbiah Arunachalam

Mr. S. Krishnamoorthy, Vellore

2001 - 2002

Prof. P.C. Kesavan, Chennai

Dr. S. Rajagopalan, Chennai

Ms. S. Sharada, Chennai

Dr. P.C. Josekutty, Kosral FSM

Mr. K. Parasaran, New Delhi

Mr. Dhattaraj Dhond, Ahmedabad

Prof. M.S. Swaminathan, Chennai

Dr. S.P. Palaniappan, Pudukottai

Prof. S. Chelliah, Chennai

Staff of MSSRF, Chennai

Dr. S. Subramaniyan, Chennai

Dr. K. Balasubramanian, Chennai

Dr. P.V. Shenoi, Bangalore

Prof. Subbiah Arunachalam, Chennai

Dr. Sudha Nair, Chennai

The Governor of Assam, Guwahati

Mr. Bhagwan M. Maniar, Mumbai

Ms. R.V. Bhavani, Chennai

Dr. V. Arivudai Nambi, Chennai

2002-03

Ms. Amiya Kesavan, Chennai

Dr.S. Appa Roa, Chennai

Prof. S. Arunachalam, Chennai

Dr.S. Balaravi, Chennai

Dr. K. Balasubramaniam, Chennai

Mr. Bhagwan M. Maniar, Mumbai

Ms. R.V. Bhavani, Chennai

Prof. P.C. Kesavan, Chennai

Dr.S.P. Palaniappan, Pudukottai

Dr.S. Rajagopalan, Chennai

Captain K. Rajan, Kanur

Mr.M.M. Rao, Chennai

Mr. S. Senthilkumaran, Chennai

Ms. S. Sharada, Chennai



	Dr.PV. Shenoi, Bangalore
	Mr. Sridhar Goapasamy, Chennai
	Dr. Sudha Nair, Chennai
	Dr. S. Subramaniam, Chennai
	Prof. M.S. Swaminathan, Chennai
	Staff of MSSRF (Chennai & All Field Offices)
2003-2004	Mr. M.S. Ramachandran, Chennai
	Mrs. Amiya Kesavan, Chennai
	Dr. Swarna Sadasivam Vepa, Chennai
	Dr. S. Bala Ravi, Chennai
	Mr. C.V. Parthasarathy, Chennai
	Mr. Bhagwan Maniar, Mumbai
	Prof. P.C. Kesavan, Chennai
	Ms. R.V. Bhavani, Chennai
	Ms. Sharada, Chennai
	Mr. T. Parthasarathy, Chennai
2004-2005	Mr. S. Srinivasan, Chennai
	Mr. Bhagwan M.Maniar, Mumbai
	Smt. P.V. Lakshmi Devi, Chennai
	Dr. V. Arivudai Nambi, Chennai
	Mrs. Amiya Kesavan, Chennai
	Dr. M. Velyutham, Chennai
	Mr. R. Srinivasan, Chennai
	Mr. Shri Charan & Pavithra, Chennai
	Mr. K. Govindarajan, Thanjavur
	Mr. T. Parthasarathy, Chennai
	Dr. A. Chandrasekaran, Pudukottai
	Dr. S. Bala Ravi, Chennai
	Prof. P.C. Kesavan, Chennai
	Mr. Varadharajan, Trichy
	Mr. Ashok Anandharam, Chennai
2005-06	Prof. M.S. Swaminathan, Chennai
	Dr. M.V. Rama Rao, Tuni
	Mr. S. Srinivasan, Chennai
	Mr. Bhagwan Maniar, Mumbai
	Mrs. Amiya Kesavan, Chennai
	Prof. P.C. Kesavan, Chennai
	Dr. S. Bala Ravi, Chennai
	Mr. T. Parthasarathy, Chennai
	Ms. Latha Rangan, Guwahati

- 2006-07
- Prof. M.S. Swaminathan, Chennai
  - Dr. A. Tuli, New Delhi
  - Dr. Smita Mishra, Chennai
  - Dr. M. Velayutham, Chennai
  - Mrs. Amiya Kesavan, Chennai
  - Prof. P.C. Kesavan, Chennai
  - Mr. S. Srinivasan, Chennai
  - Dr. B.R. Barwale, Mumbai
  - Dr. Gangabishan Bhikula, Mumbai
  - Mr. Shirish R. Barwale, Mumbai
  - Dr. R.B. Barwale, Mumbai
  - Shri Bhagwan M. Maniar, Mumbai
- 2007-08
- Dr. M. Velayutham, Chennai
  - Shri S. Srinivasan, Chennai
  - Mr. Bhagwan Maniar, Mumbai
  - Mr. Subbiah Arunachalam, Chennai
  - Mr. Amiya Kesavan, Chennai
  - Prof. P.C. Kesavan, Chennai
  - Dr. B.R. Barwale, Mumbai
  - Mrs. Radha Rajamannar, Bangalore
  - Dr. Gangabishan Bhikula, Mumbai
  - Mr. Shirish R. Barwale, Mumbai
  - Dr. R.B. Barwale, Mumbai

**Annexure 11**  
**List of Project Support Received**  
**(1990 – 2008)**

**(as reported in the Annual Reports)**

Summary Table – Showing the number of Agencies from where we received Support

<b>Programme Area(s)</b>	<b>National</b>	<b>International</b>	<b>TOTAL</b>
MSSRF	8	10	18
PA 100 - Coastal Systems Research	13	10	23
PA 200 – Biodiversity	26	37	63
PA 300 – Biotechnology	6	2	8
PA 400 (old) – Reaching the Unreached	18	19	37
PA 400 – Ecotechnology	46	33	79
PA 500 - Food Security	10	14	24
PA 600 - Information, Education and Communication	129	107	236
PA 700*	17	23	40
<b>TOTAL</b>	<b>273</b>	<b>255</b>	<b>528</b>

\* PA 700 are short term projects that are outside the defined Programme Areas

**Programme Area: Not Mentioned**

Year: 1990 – 1991

(in this issue of the Annual Report, Programme Areas were not mentioned)

<b>National</b>
Council for Advancement of People's Action & Rural Technology (CAPART), New Delhi
Council for Scientific and Industrial Research, New Delhi
Department of Biotechnology, Govt of India, New Delhi
Department of Environment and Forests, Govt of India, New Delhi
The Hunger Project – India Office, Bombay
Indian Council of Agricultural Research, New Delhi
National Bank for Agriculture and Rural Development, Bombay
15 <sup>th</sup> Genetics Congress Trust, New Delhi

<b>International</b>
Asian Development Bank, Manila, Philippines
Asian Network for Biological Sciences, Singapore
CIMMYT – International Maize and Wheat Improvement Center, El Batan, Mexico
Governments of Japan and United Kingdom through International Tropical Timber Organization, Yokohama, Japan
Hammerskjold Foundation, Uppsala, Sweden
United Nations Development Programme, New Delhi
International Development Research Centre, Ottawa, Canada
Kalai Mandram, Leiden, the Netherlands
United Nations Educational Scientific and Cultural Organization, New Delhi
United Nations Industrial Development Organisation, Vienna, Austria

**Programme Area: Coastal Systems Research (PA 100)**

<b>Year(s)</b>	<b>National</b>
1991 - 1996	Sir Dorabji Tata Trust, Bombay
1993 - 1996	Council of Scientific and Industrial Research (CSIR), New Delhi
1994 - 1996	Department of Biotechnology (DBT), Govt. of India
1995 - 1996	India - Canada Environment Facility
1997 – 2008	Department of Atomic Energy (DAE), Government of India, Mumbai
2000 – 2003	Ministry of Rural Development, Government of India, New Delhi
2003 - 2004	National Bioresources Department Board Government of India, New Delhi
2005 - 2006	Bharatiya Nabhikiya Vidut Nigam Ltd, Kalpakkam
2005 - 2006	Department of Space, Ahmedabad
2005 - 2007	Department of Forest, Govt. of Andhra Pradesh, Hyderabad
2005 - 2008	Reliance Industries Limited, Mumbai
2007 - 2008	Space Application Centre, Department of Space, Government of India
2007 - 2008	Swiss Agency for Development and Cooperation (SDC), New Delhi

<b>Year(s)</b>	<b>International</b>
1991 - 1996	International Development Research Centre (IDRC), Canada
1992 – 1996	Canadian International Development Agency (CIDA), Canada
1994 - 1998	Norwegian Agency for Development Co - operation (NORAD)
1996 - 2005	India - Canada Environment Facility, New Delhi
1997 - 1998	Global Environment Facility – UNDP
2000 - 2002	UNDP Global Environment Facility, New Delhi
2002 - 2004	United Nations Development Programme (UNDP), New Delhi
2005 - 2007	Swiss Agency for Development and Cooperation (SDC), New Delhi
2005 - 2008	Canadian International Development Agency (CIDA), Canada
2005 - 2008	International Development Research Centre (IDRC), Canada

**Programme Area: Biodiversity (PA 200)**

This includes the following PA as reported during various periods:

1991 – 1994: PA 200 – Biological Diversity

1994 – 1995: PA 200 – Biodiversity

1995 – 2004: PA 200 – Biodiversity and Biotechnology

2004 – 2007: PA 300 – Biodiversity

2007 – 2008: PA 200 – Biodiversity

<b>Year(s)</b>	<b>National</b>
1991 - 2000	Ministry of Environment and Forests, Govt. of India, New Delhi
1991 – 2008	Department of Biotechnology (DBT), Government of India, New Delhi
1993 – 1995	Rajiv Gandhi Foundation, New Delhi
1996 - 1998	World Wide Fund for Nature – India, New Delhi
1998 - 1999	Government of Mizoram, Mizoram, Aizawal
1998 - 2003	Department of Agriculture, Govt. of Tamil Nadu
1999 - 2000	Directorate of Horticulture, Government of Mizoram
2000 - 2001	National Bioresources Development Board, New Delhi
2000 – 2001	Indian Institute of Remote Sensing, Dehradun, Uttar Pradesh
2001 - 2002	Indian Council of Agricultural Research, New Delhi
2001 – 2004	National Bureau of Plant Genetic Resources (NBPGR), New Delhi
2002 - 2003	Indian Institute of Remote Sensing, Dehradun, Uttar Pradesh
2002 - 2003	Sugarcane Breeding Institute, Coimbatore
2002 - 2004	Indian Council of Agricultural Research (ICAR), Jabalpur, Madhya Pradesh
2004 - 2005	Ministry of Science & Technology, New Delhi
2004 - 2005	State Planning Board, Government of Kerala
2004 - 2007	Centre for Environment Education, New Delhi
2004 - 2007	National Botanical Research Institute (NBRI), Lucknow
2004 - 2008	Department of Science & Technology (DST), Government of India, New Delhi
2004 - 2008	National Medicinal Plants Board, Department of Ayush, Govt of India
2005 - 2006	National Commission on Farmers, New Delhi
2005 - 2008	Sir Dorabji Tata Trust, Mumbai

2007 - 2008	Barwale Endowment Fund
2007 - 2008	Department of Scientific and Industrial Research (DSIR), Government of India
2007 - 2008	Ford Foundation Endowment
2007 - 2008	State Bank of Travancore, Thiruvananthapuram
2007 - 2008	Swiss Agency for Development and Cooperation (SDC), New Delhi

<b>Year(s)</b>	<b>International</b>
1991 - 1992	Sasakawa Peace Foundation, Japan
1991 - 1994	International Tropical Timber Organization (ITTO), Japan
1991 - 1997	Swedish International Development Authority (SIDA), Sweden
1992 - 1993	International Board for Plan Genetic Resources, Rome, Italy and the Govt of Italy
1992 – 1994	Swiss Development Cooperation (SDC), Switzerland
1992 – 1994	The Sasakawa Peace Foundation, Japan
1993 – 1994	Third World Academy of Sciences
1993 – 1996	The Darwin Initiative, UK
1994 - 1995	International Plant Genetic Resources Institute, Rome & Govt. of Italy
1994 - 1996	Ramon Magsaysay Foundation (Programme for Asian Projects)
1994 - 1996	United Nations Development Programme
1995 – 1996	Swiss Agency for Development and Cooperation (SDC), Switzerland
1995 - 1997	International Plant Genetic Resources Institute, Rome and the Govt. of Italy
1995 - 1998	John D & Catherine T MacArthur Foundation, Chicago, USA
1995 - 1999	Deutsche Gesellschaft für Technische Zusammenarbeit (GTZ), Germany
1995 - 2002	Ministry of Foreign Affairs, The Hague, The Netherlands
1996 - 1997	Global Environment Facility
1996 - 1998	International Atomic Energy
1996 - 1998	Ministry of the Environment, Govt. of United Kingdom
1997 - 1998	Food and Agriculture Organization RAP/Bangkok
1997 - 1998	Swedish Agency for Development and Cooperation
1997 - 1999	International Development Research Centre (IDRC) Canada

1997 - 1999	Ramon Magsaysay Award Foundation, Philippines
1998 - 2000	Swedish Agency for Development and Cooperation
1999 – 2003	The Summit Foundation, USA
2000 - 2002	Swedish Agency for Development and Cooperation, New Delhi
2001 - 2004	Centre for Collaborative Research and Education, USA
2001 - 2004	International Fund for Agricultural Development (IFAD), Rome
2001 - 2004	International Plant Genetic Resources Institute (IPGRI), Rome
2002 - 2003	International Development Research Centre (IDRC) Canada
2002 - 2007	Swiss Agency for Development and Cooperation (SDC), New Delhi
2003 - 2004	United States Department of Agriculture Forest Service, Washington
2004 - 2005	All Saints Episcopal Church, Greensboro, USA
2004 - 2005	Italian National Academy of Sciences Rome, Italy
2004 - 2005	Ms.Aylifee B.Mumford, San Fransisco, USA
2004 - 2008	International Plant Genetic Resources Institute Rome, Italy
2005 - 2007	International Food Policy Research Institute, USA
2006 - 2008	Consulate of Japan, Japan

**Programme Area: Biotechnology (PA 300)**

This includes the following PA as reported during various periods:

2004 – 2007: PA 200 – Biotechnology

2007 – 2008: PA 300 – Biotechnology

<b>Year(s)</b>	<b>National</b>
2004 - 2005	Department of Forest & Wildlife Government of Pondicherry
2004 - 2005	Department of Science & Technology Ministry of Science & Technology, New Delhi
2004 - 2005	Indian Council for Agricultural Research Jabalpur, Madhya Pradesh
2004 - 2008	Department of Biotechnology (DBT), Government of India, New Delhi
2005 - 2007	Council of Scientific & Industrial Research (CSIR), New Delhi
2005 - 2008	Directorate of Forest & Wild Life, Govt. of Puducherry
2007 - 2008	Department of Science & Technology Ministry of Science & Technology, New Delhi



<b>Year(s)</b>	<b>International</b>
2007 - 2008	American Express Foundation, USA
2007 - 2008	International Rice Research Institute, Manila

**Programme Area: Reaching the Unreached (old PA 400)**

<b>Year(s)</b>	<b>National</b>
1991 - 1992	Indian Bank, Madras
1991 - 1997	Council of Advancement of People's Action & Rural Technology, New Delhi
1991 - 1997	The Hunger Project (India), Bombay
1995 - 1996	Venkateshwara Hatcheries Ltd, Pune
1996 - 1997	Aga Khan Foundation New Delhi
1996 - 1997	Kasthuri & Sons Ltd, Chennai
1996 - 1997	Ministry of Human Resources Development, Govt. of India
1996 - 1998	Venkateshwara Group, Pune
1997 - 1998	Gopuri Charitable Trust, New Delhi
1997 - 1999	Sangeet Natak Akademi, New Delhi
1997 - 2000	National Commission for Women, New Delhi
1998 - 1999	National School of Drama, New Delhi
2000 - 2001	Department of Science & Technology, New Delhi
2001 - 2002	Royal Netherlands Embassy, New Delhi
2001 - 2002	Tamil Nadu Iyal Isai Nataka Manram, Chennai
2001 - 2003	Ministry of Tourism and Culture, Govt, of India
2001 - 2004	Venkateshwara Hatcheries Ltd, Pune
2002 - 2003	Kasturi & Sons Ltd., Chennai
2002 - 2003	Tista Trust, New Delhi

<b>Year(s)</b>	<b>International</b>
1991 - 1992	Dag Hammarskjold Foundation, Uppsala, Sweden

1992 - 1996	Aga Khan Foundation
1992 - 1997	United Nations Development Programme
1992 - 2003	Bernard van Leer Foundation, The Netherlands
1993 - 1994	International Agricultural Training Programme, UK
1994 - 1995	MacArthur Foundation, USA
1995 - 1996	John D & Catherine T MacArthur Foundation, Chicago, USA
1995 - 1996	UNICEF
1996 - 1997	United Nations International Children's Fund
1996 - 1998	Royal Danish Embassy, New Delhi
1996 - 2000	Humanistic Institute for Cooperation with Developing Countries (HIVOS), Bangalore
1997 - 2002	The Hunger Project – India
2001 - 2002	World Food Programme, Regional Office for South Asia, New Delhi
2001 - 2003	Ramon Magsaysay Award Foundation Manila, Philippines
2002 - 2003	Royal Netherlands Embassy, New Delhi
2002 - 2003	The American Express Foundation, USA
2002 - 2003	The Hunger Project, Country office, New Delhi
2002 - 2004	World Food Programme, India Country Office New Delhi
2003 - 2004	Friends of MSSRF, Tokyo, Japan

**Programme Area: Ecotechnology (PA 400)**

This includes the following PA as reported during various periods:

1991 – 1992: PA 300 – Biovillages

1993 – 1994: PA 300 – Biovillages and Sustainable Agriculture

1994 – 1995: PA 300 - Sustainable Agriculture and Rural Livelihood Security

1995 – 2001: PA 300 – Ecotechnology and Sustainable Agriculture

2003 – 2004: PA 300 – Ecotechnology and Food Security

2001 – 2003 : PA 300 –Ecotechnology

2004 – 2008: PA 400 – Ecotechnology

<b>Year(s)</b>	<b>National</b>
1993 – 1998	Indian Council of Agricultural Research, New Delhi
1994 - 1996	Department of Wastelands Development, Ministry of Rural Development, Govt of India
1994 - 1997	The Hunger Project (India), Bombay
1995 – 1997	Sir Dorabji Tata Trust, Mumbai
1995 - 2005	Council for Advancement of People’s Action and Rural Technology (CAPART), New Delhi
1996 - 1997	Directorate of Agriculture, Govt. of TN, Chennai
1996 - 1997	Industry Development and Promotion Council, Pune
1996 - 1997	Social Welfare & Nutritious Meal Programme Department, Govt of TN, Chennai
1996 - 1998	Department of Wastelands Development, Ministry of Rural Development, , Govt. of India
1996 - 1998	Venkateshwara Group, Pune
1996 - 1999	Federation of Indian Chambers of Commerce and Industry, New Delhi and Southern Petrochemicals Industries Corporation
1996 - 2007	Department of Biotechnology (DBT), Govt. of India, New Delhi
1997 - 1998	Hindustan Lever Limited
1997 - 1998	Southern Petrochemicals Industries Corporation
1997 - 1999	Federation of Indian Chambers of Commerce and Industry, New Delhi
1997 - 1999	Indian Overseas Bank, Chennai
1998 - 1999	Hindustan Lever Research Foundation
1999 - 2000	Gopuri Charitable Trust, New Delhi
1999 - 2000	Sikkim Charitable Trust, Sikkim
1999 – 2000	Department of Science & Technology, Govt. of India, New Delhi
1999 - 2001	National Bureau of Plant Genetic Resources (ICAR), New Delhi
1999 - 2002	Hindustan Lever Limited, Mumbai
1999 – 2007	National Bank of Agriculture and Rural Development (NABARD), Mumbai
2000 - 2001	Sahyadri Trust, New Delhi
2000 – 2008	Sir Dorabji Tata Trust, Mumbai

2001 - 2003	Lovelock & Lowes Services Pvt Ltd, Bangalore
2001 - 2003	Lovelock & Lowes, New Delhi
2001 - 2003	PriceWaterHouse Coopers Ltd, New Delhi
2001 - 2003	PriceWaterHouse, New Delhi
2002 - 2003	Hindustan Lever Foundation, Bangalore
2002 - 2003	Tata Education Trust, Mumbai
2003 - 2005	TATA Social Welfare Trust, Mumbai
2004 - 2005	Space Application Centre, Ahmedabad
2004 - 2007	Planning Commission, Government of India New Delhi
2004 - 2007	V.V. Vanniaperumal & Sons, Virudhunagar
2005 - 2006	Kaizen Surya Associates, Bangalore
2005 - 2006	Tamil Nadu State Council for Science and Technology, Chennai
2005 - 2007	Council for Advancement of People's Action and Rural Technology, Hyderabad
2005 - 2007	Council of Scientific & Industrial Research, New Delhi
2005 - 2007	Jamsetji Tata Trust, Mumbai
2005 - 2008	State Bank of India, Chennai
2005 - 2008	Department of Science & Technology, Govt. of India, New Delhi
2007 - 2008	Bharat Soka Gakkai, New Delhi
2007 - 2008	Ministry of Environment and Forests, Government of India
2007 - 2008	Sir Jamsetji Tata Trust, Mumbai
2007 - 2008	Swiss Agency for Development and Cooperation (SDC), New Delhi
2007 - 2008	Technology Information, Forecasting and Assessment Council (TIFAC), DST, Government of India
2007 - 2008	World Noni Research Foundation, Chennai

<b>Year(s)</b>	<b>International</b>
1991 - 1993	Asian Development Bank, Manila
1992 - 1997	International Fund for Agricultural Development
1993 - 1995	Food and Agriculture Organization of UN
1993 - 1995	United Nations Development Programme
1993 - 1996	The Hunger Project - Japan

1993 - 1996	The Hunger Project – Sweden
1995 – 2003	United Nations Development Programme (UNDP), New Delhi
1996 - 1997	The Hunger Project – Japan & Sweden
1996 – 1997	Food & Agriculture Organization of the UN, New Delhi
1996 - 1999	United Nations Educational Scientific and Cultural Organization (UNESCO)
1997 – 2000	International Development Research Centre (Food Links), Canada
1997 – 2002	The Hunger Project – India, Mumbai
1998 - 1999	German - Israel Fund for Research and International Development, Israel
1998 - 2000	The Global Hunger Project
1999 - 2005	Volkart Stiftung, Winterthur
2000 - 2001	Ramon Magsaysay Award Foundation, Manila, Philippines
2000 - 2001	World Food Programme, Regional Office for South Asia, New Delhi
2000 – 2001	FAO Representative in India & Bhutan, New Delhi
2000 – 2004	Food & Agriculture Organization of the UN, New Delhi
2000 – 2004	International Development Research Centre (IDRC) Canada
2001 - 2003	Friends of MSSRF, Tokyo, Japan
2001 - 2004	The Commonwealth of Learning, Canada
2002 - 2003	International START Secretariat, Washington
2002 - 2003	The Hunger Project, Japan
2003 - 2007	Friends of MSSRF, Tokyo, Japan
2004 – 2005	Asian Productivity Organisation, Japan
2004 - 2007	United Nations Educational, Scientific and Cultural Organization (UNESCO), Bangkok, Thailand
2004 – 2007	Commonwealth of Learning, Canada
2004 - 2008	Friends of Swaminathan, Australia (FOSA), Melbourne, Australia
2005 - 2007	Temple University, Japan
2007 - 2008	American India Foundation, USA
2007 – 2008	Asia Initiatives, Friends of MSSRF, Japan
2007 – 2008	Barret Foundation, USA
2007 – 2008	Department for Funding International Development, Government of UK
2007 – 2008	FAO Regional Office for Asia Pacific, Bangkok

**Programme Area: Food Security (PA 500)**

<b>Year(s)</b>	<b>National</b>
2006 - 2007	Food and Agriculture Organisation of the United Nation, Rome
2007 - 2008	Ford Foundation Endowment
2006 - 2007	Friends of Swaminathan, Australia
2006 - 2007	International Food Policy Research Institute, USA
2007 - 2008	Ministry of Women and Child, Government of India
2004 - 2005	Sir Dorabji Tata Trust, Mumbai
2007 - 2008	Sir Dorabji Tata Trust, Mumbai
2007 - 2008	The Soybean Oil Processors Association (SOPA)
2007 - 2008	UN World Food Programme, Regional Office for South Asia, New Delhi
2004 - 2005	Venkateswara Hatcheries Pvt. Ltd, Hyderabad
2007 - 2008	Venkateswara Hatcheries Pvt. Ltd, Hyderabad
2007 - 2008	Vistaar Project of USAID, New Delhi

<b>Year(s)</b>	<b>International</b>
2004 - 2005	Colombia Earth Institute, USA
2006 - 2007	Department for International Development UK
2005 - 2006	Department for International Development, New Delhi office
2007 - 2008	Food and Agriculture Organisation of the UN (FAO), Rome
2007 - 2008	Friends of Swaminathan, Australia (FOSA)
2007 - 2008	India Relief and Education Fund, USA
2007 - 2008	International Food Policy Research Institute (IFPRI), Washington
2007 - 2008	International Fund for Agricultural Development (IFAD), Rome
2005 - 2006	South Asia, New Delhi
2005 - 2007	The Micronutrient Initiative, Canada, New Delhi office
2005 - 2006	United Nations World Food Programme, Cambodia
2004 - 2005	World Food Programme, Country Office ampuchea
2004 - 2005	World Food Programme, Country Office New Delhi
2005 - 2007	World Food Programme, Regional Office for South Asia, New Delhi

**Programme Area: Information, Education and Communication (PA 600)**

<b>Year(s)</b>	<b>National</b>
1991 - 1992	15 <sup>th</sup> International Genetics Congress Trust, New Delhi
1991 - 1992	Department of Space, Govt. of India, Bangalore
1991 - 1992	Indian National Science Academy
1991 - 1992	Marine Products Export Development Authority, Cochin
1991 - 1992	Mother's Service Society, Pondicherry
1991 - 1992	Nagarjuna Fertilizers, Hyderabad
1991 - 1993	Tamil Nadu Social Forestry Society, Madras
1991 - 1993	Department of Biotechnology, Ministry of Science and Technology, New Delhi
1991 - 1995	National Bank for Agriculture & Rural Development, Bombay
1991 - 1999	Council of Scientific & Industrial Research, New Delhi
1991 - 2002	Council for Advancement of People's Action & Rural Technology, New Delhi
1992 - 1993	Department of Scientific and Industrial Research, Govt. of India (For installation of 10 KVA Solar Photovoltaic Generator)
1992 - 1993	Ministry of Non-Conventional Energy Sources, Govt. of India (For installation of 10 KVA Solar Photovoltaic Generator)
1992 - 1993	Tamil Nadu Energy Development Agency, Madras
1992 - 1999	Ministry of Environment & Forests, Govt. of India
1993 - 1994	Government of Tamil Nadu, Madras
1993 - 1994	National Foundation for India, New Delhi
1993 - 1994	Tamil Nadu Social Forestry Research and Development Society, Madras
1993 - 1994	XV Genetics Congress Trust, New Delhi
1994 - 1995	National Commission for Women
1994 - 1995	Foundation for Revitalization of Local Health Traditions, Bangalore
1994 - 1995	Indian Farmers' Fertilizer Company Ltd (IIFCO)
1994 - 1995	Reserve Bank of India
1994 - 1995	Society for Social Forestry Research and Development, Tamil Nadu
1994 - 1995	State Bank of India

1994 -1995	Indian Overseas Bank
1995 - 1996	Department of Women and Child Development, Ministry of Human Resource Development, Govt of India
1995 - 1996	Directorate of Agriculture, Tamil Nadu
1995 - 1996	Kasturi & Sons Ltd, Madras
1995 – 1996	Department of Biotechnology, Ministry of Science and Technology, New Delhi
1995 – 1998	Department of Ocean Development, Govt. of India
1995 - 2000	Sir Dorabji Tata Trust, Bombay
1996 - 1997	Population Foundation of India, New Delhi
1996 – 1999	Department of Scientific and Industrial Research, New Delhi
1997 - 1992	Department of Science & Technology, Govt. of India
1997 - 1998	JRD Tata Trust, Mumbai
1997 - 1998	National Academy of Agricultural Sciences, New Delhi
1997 - 1998	Tata Education Trust, Mumbai
1997 - 1998	Tata Social Welfare Trust, Mumbai
1997 - 1998	Union Planning Commission, New Delhi
1997 – 1998	Administration of Union Territory of Laksha Dweep, Kavaratti
1997 – 1998	Department of Atomic Energy, Govt. of India
1997 - 1999	National Bank for Agriculture and Rural Development, New Delhi
1997 – 1999	Ministry of External Affairs, Govt. of India
1997 - 2000	R.D. Tata Trust, Mumbai
1997 – 2000	National Commission for Women, New Delhi
1997 – 2001	Department of Biotechnology, Ministry of Science and Technology, New Delhi
1997 -1998	World Wide Fund for Nature – India
1997 -1998	XV Genetics Congress Trust, New Delhi
1998 - 1999	Society for Social Forestry Research & Development, Tamil Nadu
1998 - 1999	University Grants Commission, New Delhi
1998 – 1999	Coffee Board, Bangalore
1998 – 1999	CPR Environmental Education Centre, Tamil Nadu
1998 – 1999	Housing & Urban Development Corporation Ltd, New Delhi



1998 – 1999	International Ocean Institute, India Center, Chennai
1998 - 2001	Indian Council for Medical Research, New Delhi
1999 - 2000	XV Genetics Congress Trust, New Delhi
1999 -2000	Ministry of Rural Development, Govt. of India
2000 - 2005	Council of Scientific & Industrial Research, New Delhi
2000 - 2001	Asian-South Pacific Bureau of Adult Education, Mumbai
2000 - 2001	Central Electro-Chemical Research Institute, Karaikudi
2000 - 2001	Government of Pondicherry
2000 - 2001	Indian Institute of Remote Sensing, U. Pradesh
2000 - 2001	Informatics (India) Ltd, Bangalore
2000 - 2001	Larsen & Toubro Ltd, Chennai
2000 - 2001	Ministry of Agriculture, Govt of India
2000 - 2001	NISSAT -DSIR, New Delhi
2000 - 2001	Planning Commission, Govt of India
2000 - 2001	State Bank of India, Local Head Office, Chennai
2000 - 2001	Structural Engineering Research Centre, Chennai
2000 - 2001	Tamil Nadu Agricultural University, Coimbatore
2000 - 2001	The Institute of Mathematical Sciences, Chennai
2000 - 2001	The Madras Library Association, Kalpakkam Centre
2000 - 2002	Department of Space, Govt. of India
2000 - 2002	Indian Institute of Technology, Chennai
2001 - 2002	Department of Biotechnology (Bioinformatics) Government of India, New Delhi
2001 - 2002	Directorate of Agriculture and Cooperation, New Delhi
2001 - 2002	Ministry of Agriculture, Department of Agril & Coopn., Govt of India
2001 - 2002	Ministry of Agriculture, Directorate of Extension, New Delhi
2001 - 2002	Ministry of Water Resources (Policy & Planning Wing), Govt. of India
2001 - 2002	Royal Netherlands Embassy, New Delhi
2001 - 2002	United Nations Development Fund for Women, New Delhi
2001 – 2002	Department of Science & Technology, Government of Pondicherry
2001 – 2002	Ministry of Rural Development, Department of Land Resources, Govt. of India

2001 – 2002	South India Surgical Co Ltd, Chennai
2001 - 2003	Indira Gandhi National Open University, New Delhi
2001 - 2003	Tamil Nadu Corporation for Development of Women Ltd, Chennai
2002 - 2003	Dept. of Biotechnology (Bioinformatics) Govt. of India, New Delhi
2002 - 2003	Dept. of Science & Technology Govt. of Pondicherry, Pondicherry
2002 - 2003	Dept. of Space, Space Application Centre Ahmedabad
2002 - 2003	Small Farmer's Agri-business Consortium New Delhi
2002 - 2003	XV Genetics Congress Trust, New Delhi
2002 – 2003	Department of Biotechnology, Ministry of Science and Technology, New Delhi
2002 – 2003	National Institute of Agricultural Extension Management (MANAGE), Hyderabad
2002 – 2003	State Bank Institute of Rural Development Hyderabad
2002-2004	Mahyco Research Foundation, Mumbai
2003 - 2004	Department of Biotechnology (Bioinformatics) Government of India, New Delhi
2003 - 2004	Department of Science & Technology, Government of Pondicherry,
2003 - 2004	Department of Space, Govt. of India, Bangalore
2003 - 2004	Government of West Bengal
2003 - 2004	Indian Institute of Remote Sensing, U. Pradesh
2003 - 2004	Indian Overseas Bank, Virudhunagar
2003 - 2004	Krishna Sweets, Chennai
2003 - 2004	Marine Products Export Development Authority, Kochi
2003 - 2004	National Academy of Agricultural Sciences, New Delhi
2003 - 2004	National Bank for Agriculture and Rural Development, Mumbai
2003 - 2004	Office of the Science City, Chennai
2003 - 2004	Office of the Scientific Advisor to the Government of India, New Delhi
2003 - 2004	Poultry Development Promotion Council, Hyderabad
2003 - 2004	TATA Social Welfare Trust, Mumbai
2003 - 2004	Technology Information, Forecasting and Assessment Council, New Delhi
2003 -2004	Ministry of Agriculture, Government of India, New Delhi
2004 - 2005	British Council, Chennai

2004 - 2005	District Collector, Wayanad
2004 - 2005	Government of Pondicherry
2004 - 2005	Indian Bank, Rajaji Salai, Chennai
2004 - 2005	National Bioresources Development Board
2004 - 2005	National Commission on Farmers, New Delhi
2004 - 2005	State Bank of India, Mumbai
2004 - 2005	Tami Nadu Corporation for Development of Women Ltd, Chennai
2004 - 2005	National Institute of Agricultural Extension Management (MANAGE), Hyderabad
2004 - 2007	Ministry of Science & Technology, New Delhi
2004 - 2007	Tata Relief Committee, Chennai
2004 - 2008	Microsoft Corporation India P Ltd, Gurgaon
2005 - 2006	15 <sup>th</sup> International Genetics Congress Trust, New Delhi
2005 - 2006	Department of Space, ISRO, Bangalore
2005 - 2006	Food and Agriculture Organisation of the United Nations, New Delhi
2005 - 2006	The National Academy of Sciences, Allahabad
2005 - 2006	American Spring & Pressing Works Pvt. Ltd, Mumbai
2005 - 2006	Department of Biotechnology, Ministry of Science and Technology, New Delhi
2005 - 2006	Tamil Nadu Agricultural University Centre for Agricultural and Rural Development Studies, Coimbatore
2005 - 2007	Indian Council of Medical Research, New Delhi
2005 - 2007	ITC Limited, Secunderabad
2005 - 2007	Jamsetji Tata Trust, Mumbai
2005 - 2007	Knowledge Networking for Rural Development, New Delhi
2005 - 2007	NASSCOM Foundation, New Delhi
2005 - 2007	National Academy of Agricultural Sciences, New Delhi
2005 - 2007	Tata Social Welfare Trust, Mumbai
2005 - 2007	The India Essential Advocacy Project, New Delhi
2005 - 2008	Sir Dorabji Tata Trust, Mumbai
2005 - 2008	Intel Technology India Pvt. Ltd, Bangalore
2006 - 2007	ISRO, Bangalore

2007 - 2008	Hindu Group of Publications
2007 - 2008	Indian Space Research Organisation, Dept of Space, Government of India
2007 - 2008	Lehmann Brothers, Mumbai
2007 - 2008	State Bank of Mysore, Chennai
2007 - 2008	Tata Education Trust, Mumbai
2007 - 2008	Telecenter.org, New Delhi

<b>Year(s)</b>	<b>International</b>
1991 - 1992	International Council of Scientific Unions, Paris
1991 - 1992	United Nations Development Programme, New York
1991 - 1992	United Nations Educational, Scientific & Cultural Organization, France
1991 - 1994	Stiching Kalaimandram, Leiden, The Netherlands
1991 -1992	International Tropical Timber Organization, Japan
1991 -1992	Ramon Magsaysay Award Foundation
1991 -2005	International Development Research Centre, Canada
1992 - 1993	United Nations Development Programme
1992 - 1993	United Nations Educational, Scientific and Cultural Organization
1992 - 1993	United Nations Industrial Development Organization, Vienna
1992 - 1994	The Sasakawa Peace Foundation, Japan
1992 – 1997	International Agriculture Training Programme, UK
1993 - 1994	Swedish International Development Authority
1993 - 1994	The Rockefeller Foundation, New York
1993 - 1994	United Nations Development Programme
1994 - 1996	UNICEF
1994 -1996	International Atomic Energy Agency, Vienna
1995 - 1996	Foundation for Genetic Research, USA
1995 - 1996	Honda Foundation, Japan
1995 - 1996	International Fund for Agricultural Development, Rome
1995 - 1996	John D & Catherine T Macarthur Foundation, Chicago, USA
1995 - 1996	Royal Danish Embassy
1995 - 1996	Swedish International Development Agency

1995 - 1996	UN Educational Scientific and Cultural Organization
1995 - 1996	UN Food and Agriculture Organization
1995 - 1996	United Nations Development Programme FAO-FARM
1995 – 1996	Humanistisch Instituut voor Ontwikkelingssamenwerking Stichting, The Netherlands
1995 - 1997	Encyclopedia of Life Support Systems, Abu Dhabi, UAE
1996 - 1997	United Nations Development Programme
1996 - 1997	United Nations Educational, Scientific and Cultural Organization (UNESCO)
1996 – 1998	Swiss Agency for Development and Cooperation (SDC), New Delhi
1996 -1997	Food and Agriculture Organization of the United Nations, Regional Office, Thailand FAO-RAPA
1996 -1997	Institute for international Economic Cooperation and Development, Italy
1996 -1997	International Crops Research Institute for the Semi-Arid Tropics
1997 - 1998	The British High Commission, New Delhi
1997 - 1998	United Nations Development Programme
1997 - 1998	United Nations Educational, Scientific and Cultural Organization (UNESCO)
1997 - 1998	United States Department of Agriculture
1997 – 2000	Food and Agriculture Organization of the United Nations, Rome
1998 - 1999	International Plant Genetic Resources Institute (IPGRI), Italy
1998 - 1999	International Tropical Timber Organization (ITTO), Japan
1998 - 1999	IUCN – World Conservation Union
1998 - 1999	Iwokrama International Rain Forest Centre, Guyana
1998 - 1999	UNICEF
1998 - 1999	United Nations Development Programme
1998 - 1999	United Nations Educational, Scientific and Cultural Organization (UNESCO)
1998 - 1999	World Humanity Action Trust, united Kingdom
1998 – 1999	Bay of Bengal Programme of FAO
1998 - 2000	Dutch Trust Fund, C/o. World Bank, USA
1998 – 2005	International Society for Mangrove Ecosystems (ISME), Japan
1999 - 2000	British Council Division, Chennai

1999 - 2000	Royal Netherlands Embassy, New Delhi
1999 - 2000	The World Food Prize Foundation, USA
1999 - 2000	United Nations Development Fund for Women, New Delhi
1999 - 2000	United Nations Development Programme
1999 - 2000	Volkart Stiftung, Winterthur
1999 - 2000	World Food Programme, New Delhi
1999 - 2002	Scientific Committee on Problems of the Environment, France
2000 - 2001	Lead International Inc, United Kingdom
2000 - 2001	UNIFEM, New Delhi
2000 - 2001	Volkart Stiftung, Winterthur
2000 - 2001	World Food Prize Foundation, USA
2000 - 2001	International Plant Genetic Resources Institute, Malaysia
2000 - 2002	International Rice Research Institute, Philippines
2000 - 2002	Food & Agriculture Organization of the U.N. Regional office, Bangkok
2001 - 2002	UNIFEM, New Delhi
2001 - 2002	United Nations Educational, Scientific and Cultural Organization, France
2001 - 2002	Volkart Stiftung, Winterthur
2001 - 2002	World Food Prize Foundation, USA
2001 - 2002	Honda Foundation, Japan
2001 - 2002	IOWA Council for International Understanding Des Moines, USA
2001 - 2007	One World International Inc., United Kingdom
2001 - 2008	Canadian International Development Agency (CIDA), Government of Canada
2002 - 2003	Food and Agriculture Organization of the United Nations Plant Genetic Resource group, Rome
2002 - 2003	Food and Agriculture Organization of the United Nations, Office of the FAO representative in India & Bhutan, New Delhi
2002 - 2003	International Fund for Agricultural Development Rome
2002 - 2003	International Institute for Communication Netherlands
2002 - 2003	Syngenta Foundation for Sustainable Agriculture Switzerland
2002 - 2003	The Commonwealth of Learning, Canada
2002 - 2003	UN System Standing Committee on Nutrition C/o World Health Organisation, Switzerland

2002 - 2003	UNICEF, Chennai
2002 - 2003	United Nations Educational, Scientific and Cultural Organisation (UNESCO) Paris
2002 - 2003	United Nations Educational, Scientific and Cultural Organisation (UNESCO) Paris
2002 - 2003	United States Department of Agriculture Forest Service, Washington
2002 - 2003	Volkart Stiftung, Wingerthur
2002 - 2003	World Bank, New Delhi
2002 - 2003	World Food Prize Foundation, USA
2002 -2003	HIVOS, Netherlands
2003 - 2004	International Start Secretariat, USA
2003 - 2004	IUCN, Nepal
2003 - 2004	Science and Development Network, London
2003 - 2004	UN Inter Agency Group on Rural Development and Food Security and Nutrition, New Delhi
2003 - 2004	UNIFEM, New Delhi
2003 - 2004	United Nations Environment Programme Nairobi, Kenya
2003 - 2004	Volkart Stiftung, Wingerthur
2003 - 2004	Winterthur
2003 - 2004	World Fish Centre, Penang
2003 - 2004	World Food Prize Foundation, USA
2003 – 2004	Food & Agriculture Organization of the U.N. Regional office, Bangkok
2003 – 2004	Soka Gakkai International, Japan
2003 -2004	UN Millennium Hunger Project, Columbia University, USA
2003 -2004	XV Genetic Congress Trust, New Delhi
2003 -2004	Youth Employment Summit Education Development Centrem Newton, USA
2004 - 2005	Development Cooperation Section Canadian High Commission, New Delhi
2004 - 2005	Environment and Production Technology Division International Food Policy Research Institute, Washington
2004 - 2005	Friends of MSSRF, Tokyo, Japan
2004 - 2005	IFPRI, Washington

2004 - 2005	Open Society Institute Development Foundation, Switzerland
2004 - 2005	SAPANA Center, Colombo
2004 - 2005	Volkart Stiftung, Winterthur
2004 - 2005	IOWA Council for International Understanding Des Moines, USA
2004 - 2006	Gerster Consulting, Switzerland LOWA Council for International Understanding, USA
2004 - 2006	Syngenta Foundation for Sustainable Agriculture, Switzerland
2004 - 2006	United Nations Educational, Scientific and Cultural Organisation(UNESCO), Thailand
2004 - 2007	Global Knowledge Partnership Secretariat, Malaysia
2004 - 2007	Institute of International Education, New York
2004 - 2007	International Plant Genetic Resources Institute Rome, Italy
2005 - 2006	Canadian High Commission, New Delhi
2005 - 2006	United Nations Educational Scientific and Cultural Organisation (UNESCO), New Delhi
2005 - 2006	World Food Programme, New Delhi
2005 - 2007	Commonwealth Secretariat, UK
2005 - 2007	Ford Foundation, USA
2005 - 2007	International Food Policy Research Institute, USA
2005 - 2007	Open Society Institute, Hungary
2005 - 2008	International Development Research Centre (IDRC), Government of Canada
2005 - 2008	Swiss Agency for Development and Cooperation (SDC), New Delhi
2007 - 2008	Asia Initiatives, Friends of MSSRF, Japan
2007 - 2008	Friends of Swaminathan, Australia (FOSA)
2007 - 2008	QUALCOMM Ltd, USA



**Programme Area: Special Projects (PA 700)**

<b>Year(s)</b>	<b>National</b>
1997 - 1998	World Wide Fund for Nature – India, New Delhi
1998 - 1999	Government of Mizoram
1998 - 1999	Ministry of Environment & Forests, Govt. of India
1999 - 2000	Ministry of Agriculture, Govt. of India
2000 – 2001	Price Water House Coopers Ltd, New Delhi
2000 – 2001	Sir Dorabji Tata Trust, Mumbai
2001 - 2003	National Bioresources Development Board, New Delhi
2003 - 2007	Office of the Principal Scientific Advisor to the Government of India, New Delhi
2004 - 2005	Institute of Bioresources and Sustainable Development, Imphal
2004 - 2005	National Medicinal Plants Board, New Delhi
2004 - 2005	Planning Commission, Govt. of India, New Delhi
2004 - 2005	XV Genetic Congress Trust, New Delhi
2005 - 2006	ASPEE Agro Equipments Pvt. Ltd, Mumbai
2005 - 2007	Department of Biotechnology, Govt. of India, New Delhi
2005 -2007	Directorate of Agriculture, Andaman & Nicobar Islands, Port Blair
2006 - 2007	Department of Science & Technology, New Delhi
2006 - 2007	Food and Agriculture Organization of the United Nations, New Delhi
2007 - 2008	Ministry of Agriculture, Govt. of India

<b>Year(s)</b>	<b>International</b>
1997 - 1998	Food and Agriculture Organization, Rome
1997 - 1998	International Crops Research Institute for the Semi-Arid Tropics, Hyderabad
1997 - 1998	United Nations Environment Programme, Nairobi, Kenya
1998 – 2000	UNDP - Global Environment Facility, New Delhi
1999 - 2000	World Food Programme
2000 – 2001	Friends of MSSRF, Tokyo, Japan
2000 – 2002	United Nations Environment Programme, Nairobi, Kenya

2000 – 2003	United Nations Educational Scientific and Cultural Organisation (UNESCO), Jakarta
2001 - 2002	Lemelson Foundation, USA
2001 - 2002	MacArthur Foundation, USA
2001 - 2002	United States Department of Agriculture, Forest Service, Washington
2001 - 2003	Global Environment Facility, USA
2002 - 2003	United Nations Educational Scientific and Cultural Organisation (UNESCO), Bangkok
2002 - 2003	Youth Employment Summit, Education Development Centre, Newton, USA
2002 – 2003	The Lemelson Foundation, USA
2002 – 2004	UNDP - Global Environment Facility, New Delhi
2003 - 2004	UNESCO, Bangkok
2004 - 2005	Food and Agriculture Organization, Rome
2004 - 2005	Microsoft Corporation India P Ltd, Gurgaon
2004 - 2005	United Nations Educational Scientific and Cultural Organisation (UNESCO), Jakarta
2005 - 2007	University for Peace, Costa Rica
2005 – 2007	Swiss Agency for Development and Cooperation, New Delhi
2006 - 2007	International Food Policy Research Institute USA
2006 - 2007	International Plant Genetic Resources Institute, Italy
2006 - 2007	International Rice Research Institute Philippines
2006 - 2007	United Nations Development Programme, Colombo
2006 - 2007	United Nations Foundation, Washington

## Annexure 12

### **Awards Received by MSSRF Staff (as reported in MSSRF Annual Reports)**

Swaminathan, M.S. 1994. *Distinguished Service Award*. World Academy of Arts and Sciences, Maastricht, The Netherlands, for contributions to science and for harnessing science for human welfare.

Swaminathan, M.S. 1994. *The UNEP-Sasakawa Environment Prize* in recognition of over 4 decades of service to the conservation of biodiversity and for initiating the economic ecology movement.

Swaminathan, M.S. 1995. *Global Environmental Leadership Award*. The Climate Institute, Washington, D.C., USA, for encouraging village level responses to environmental issues. Swaminathan, M.S. 1996. Honorary Fellow of the Crop Science Society of America and the American Society of Agronomy

Swaminathan, M.S. 1995. *The Asian Productivity Award*, Asian Productivity Organisation, Tokyo, for significant contributions to the improvement of agricultural productivity in Asia.

Swaminathan, M.S. 1997. Dr. B.P.Pal Medal for unique contributions to agricultural research and development, National Academy of Agricultural Sciences, India.

Swaminathan, M.S. 1997. Highest award for International co-operation 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, Government of China.

Swaminathan, M.S. 1997. V. Gangadharan Award for outstanding contributions to national development.

Swaminathan, M.S. 1998. B.P. Pal Memorial Award of the Indian Science Congress Association.

Swaminathan, M.S. 1998. Henry Shaw Medal awarded by Board of Trustees of the Missouri Botanical Garden in consideration of important service to humanity through emphasis on sustainability in agriculture, USA.

Swaminathan, M.S. 1999. Legend in his Life-time Award. World Wilderness Trust.

Swaminathan, M.S. 1999. Shatabdi Puraskar in the field of Agricultural Sciences. Indian Science Congress Association.

Swaminathan, M.S. 1999. *The Volvo Environment Prize*.

Swaminathan, M.S. 1999. *UNESCO Gandhi Gold Medal* for Outstanding Work in Extending the Benefits of Biotechnology. UNESCO.

Swaminathan, M.S. 2000. *Asutosh Mookerjee Memorial Award*. Indian Science Congress Association. ‘

Swaminathan, M.S. 2000. *Franklin D. Roosevelt Four Freedoms Medal*. Franklin and Eleanor Roosevelt Institute.

Swaminathan, M.S. 2000. *Indira Gandhi Prize for Peace, Disarmament and Development*. Indira Gandhi Memorial Trust.

Swaminathan, M.S. 2000. *Millennium Alumnus Award*. Tamil Nadu Agricultural University, Coimbatore.

Swaminathan, M.S. 2000. *Planet and Humanity Medal*. International Geographical Union.

Swaminathan, M.S. 2001. Lokmanya Tilak Award. The Tilak Smarak Trust, Pune.

Swaminathan, M.S. 2001. *Millennium Scientist Award*. The Indian Science Congress Association.

Swaminathan, M.S. 2002. *Indira Gandhi Gold Plaque* for significant contribution towards human progress. Asiatic Society, Calcutta.

Swaminathan, M.S. 2002. *The Economic Times Award for Corporate Excellence - Lifetime Achievement*.

Swaminathan, M.S. 2002. *Toda Award for Peace Achievement*. Toda Institute for Global Peace and Policy Research, Japan.

Swaminathan, M.S. 2003. BioSpectrum Lifetime Achievement Award. Cyber Media (India) Limited, New Delhi.

Swaminathan, M.S. 2005. Raja RammohanRoy Puraskar. Rammohan Mission, Kolkata.

Swaminathan, M.S. 2005. Technology Achievement Award. Indian Institute of Chemical Technology, Hyderabad.

Swaminathan, M.S. 2006. *Life Time Achievement Award for Management*. In recognition of his contribution to sustainable development through mitigation of hunger in India and elsewhere. All India Management Association, New Delhi.

Swaminathan, M.S. 2006. *Sahametrei Medal of the Royal Government of Cambodia (in the grade of Chevalier)*. In recognition of his contributions to the revival of rice research and development in Cambodia and the establishment and strengthening of the Cambodian Agricultural Research and Development Institute (CARDI).

Swaminathan, M.S. 2007. *Distinguished Global Thinker Award* for his work in the cause of achieving food and agricultural security. Institute for Integrated Learning in Management, New Delhi.

***Programme Area: Coastal Systems Research (PA 100)***

Narayan, L.R.A. 1996. Sir Edward Dolezel Award at the International Congress of the International Society of Photogrammetry and Remote Sensing at Vienna (Austria). 8-19 July.

Ravishankar, T. 1997. The Young Scientists Award. Sri Venkateswara University Tirupati and Medicina Alternativa, Sri Lanka during the 35<sup>th</sup> World Congress on Natural Medicines.

***Programme Area: Biodiversity (PA 200)***

Anil Kumar, N. 2008. *Alcoa Foundation Fellowship* on Sustainability Practitioner to pursue a research entitled Conservation and Exploring the “biocultural” heritage in conservation of 5 RET species of Western Ghats of Kerala with help of IUCN. Alcoa Foundation, USA.

Anil Kumar, N. 2008. *SDC Scholarship* to participate in the International Center for Agricultural Education (CIEA). Berne, Switzerland

Anil Kumar, N. 2008. *Watson Institute of International Studies Scholarship* for conducting training workshops in sustainable food production in Wayanad, Kerala. Watson Institute of International Studies, USA.

Geetha Rani, M. 2004. Capacity Building IFAR Fellowship Grant to Work on

Characterization of Genetic Diversity of Finger Millet – Eleusine coracana. IPGRI, Italy.

John Joseph. S. 1997. Awarded B.P. Pal National Environmental Fellowship. Ministry of Environment & Forests, Government of India.

***Programme Area: Biotechnology (PA 300)***

Bharath Kumar, S., N. Rameshkumar, C. Appunu, V.R. Prabavathy and Sudha Nair.2007. Dr. Rana Memorial Award for the best poster presentation on “Diversity Analysis of Rhizosphere associated Cultural and Uncultivable Bacteria from Mangrove spp. “48th Annual Conference of Association of Microbiologists of India, IIT. Chennai.

Eganathan, P. 2001. Brandis Prize in Silviculture for the year 2000. The Indian Forester, Dehradun.

Lakshmi, M. 2001. *Young National Women Bioscientist Award* for the year 2000. Ministry of Science and Technology, Government of India.

Nair, Sudha. 2002. Young National Women Bio-scientist Award for the year 2001. Ministry of Science and Technology, Government of India

Nair, Sudha. 2002. Young National Women Bioscientist Award for the year 2001. Ministry of Science and Technology, Government of India.

Parida, A. 2000. Prof. *Umakant Sinha Memorial Award* in the field of Biochemistry and Molecular Biology. Indian Science Congress Association.

Parida, A. 2007. *National Biosciences Award for Career Development*. Department of Biotechnology, Government of India, New Delhi.

Parida, Ajay. 2005. *B. M. Birla Science Prize in Biology*. Birla Science Foundation, Hyderabad

Rao, C. S. 2001. Brandis Prize in Silviculture for the year 2000. The Indian Forester, Dehradun. Stockholm Challenge Award 2002 for Information Village Research Project, Pondicherry under a category of Global Village.

***Programme Area: Ecotechnology (PA 400)***

Jayaraj, S. 1995. The ICAR Team Research Award for 1991-93 for the development of microbial pesticides as alternatives to toxic chemical pesticides (with Dr.R.J. Rabindra and Dr.S Easwaramurthy of Tamil Nadu Agricultural University, Coimbatore, Tamil Nadu).

Nair, Sudha. 2006. B. D. Tilak Award. Indian National Science Academy.

Raman, K. V. 2000. Prof. *Sushi! Kumar Mukherjee Commemoration Award* for Soil Science Research and Sustainable Agriculture. Indian Science Congress Association.

***Programme Area: Information, Education and Communication (PA 600)***

Arunachalam, V. 2001. *Vasvik Award in Agricultural Science and Technology* for Rationalizing Genetic Concepts in Plant Breeding. VASVIK, Mumbai.

Parasuraman, N. 2002. Dr. B. R. Ambedkar Award given by Tamil Nadu. Dr. Ambedkar Mandram, Chennai.

Parasuraman, N. 2002. Literacy Award given by Rotary Club of Madras Chenna Patna. Rotary

International Dist. 3230.

Parasuraman, N. 2005. *Rose of Ridvan Service Award for Education*. Bahai Spiritual Assembly, Chennai.

Parasuraman, N. 2007. *The Leader Award in e-Health from Asia and Beyond*. e-Health Asia 2007, Malaysia.

## Annexure 13

### **Honours Received by MSSRF Staff (as reported in MSSRF Annual Reports)**

Swaminathan, M. S. 1997. Order du Merite Agricole created in 1883 to honor persons having rendered services of the highest quality to the cause of agriculture and its development and amelioration, Ministry of Agriculture, Government of France.

Swaminathan, M. S. 2002. Chairman, Pugwash Conferences on Science and World Affairs.

Swaminathan, M. S. 2004. Outstanding Technology Leadership in the Realms of Research, Business and Policymaking in 2003-2004. Scientific American, New York.

Swaminathan, M. S. 2006. *Ordre Du Merite Agricole (Commander of the Agricol Merit)*. France. In Honour of his Eminent Service to Agriculture and particularly to its Development in France and throughout the World.

Swaminathan, M. S. 2007. *Honorary Chair in Sustainable Development* to strengthen rural community. Indira Gandhi National Open University (IGNOU), New Delhi.

Swaminathan, M. S. 2007. *Member of Parliament (Rajya Sabha)*. Government of India, New Delhi

#### ***Programme Area: Coastal Systems Research (PA 100)***

Narayan, L. R. A. 2000. *Schwidefsky Medal* for Achievements in the Evolution of Spatial Information Sciences. International Society for Photogrammetry and Remote Sensing.

Ravishankar, T. 2004. Member, International Society of Tropical Agriculture. Kerala Agriculture University.

#### ***Programme Area: Biodiversity (PA 200)***

Arivudai Nambi, V. 2003. Member, Tamil Nadu Medicinal Plants Board, Health and Family Welfare Department, Government of Tamil Nadu.

Arivudai Nambi, V. 2004. Member, Text Book Committee for Environmental education. University of Madras, Chennai.

Arivudai Nambi, V. 2007. Expert Committee on Guidelines for Research Results, National Biodiversity Authority (NBA), Chennai.

Arivudai Nambi, V. 2007. Member, Expert Committee on People's Biodiversity Registers (IPR), National Biodiversity Authority (NBA). Chennai.

Arivudai Nambi, V. 2008. Member, Expert Committee in Intellectual Property Rights (IPRs), National Biodiversity Authority (NBA), Chennai.

Arivudai Nambi, V. 2008. Member, Expert Committee on Tribal and Biodiversity, National Biodiversity Authority (NBA). Chennai.

C. Srinivasa Rao, Vishwanth M. Patil, P.C. Jose Kutty and Sanjay V Deshmukh. 1995. Micropropagation of some mangrove plants through shoot tip and nodal cultures. Poster presented in *All India Symposiums on Recent Advances in Biotechnology Applications of Plant Tissue Culture*. 22-24 June. Won First Prize in the micropropagation section.

***Programme Area: Biotechnology (PA 300)***

Eganathan, P. 2007. Member, Commission on Ecosystem Management, South Asia. The World Conservation Union, Switzerland.

Nair, Sudha. 2003. Member, Board of Directors, LEAD India.

Parida, A. 1998. Elected as Fellow of the National Academy of Sciences, India.

Parida, A. 2004. Editorial Board, Journal of Tropical Agriculture. Kerala Agriculture University.

Parida, A. 2004. Overseas Biotechnology Associateship to Work at International Rice Research Institute, Manila, Philippines. Government of India, New Delhi.

Parida, A. 2005. Editorial Board Member. Asian Biotechnology and Development Review, RIS, New Delhi.

Parida, A. 2007. *Elected Fellow* of the National Academy of Agriculture Sciences (NAAS), New Delhi, India.

Parida, A. 2007. *Elected Fellow* of the National Academy of Sciences India (NASI), Allahabad, India.

Parida, A. 2007. Selected for the *3<sup>rd</sup> Senior Leadership Programme*. CGIAR and World Bank.

Parida, Ajay. 2006. *Member, Advisory Board*. International Biosafety Network, UNIDO, Geneva.

Parida, Ajay. 2008. Member, International Advisory Board, transform. Government of Netherlands, Netherlands

Rao, C. S. 2002. *CSIR Young Scientist Fellowship* to participate in the Symposium on Current Excitement in Biology at Centre for Cellular and Molecular Biology, Hyderabad. Council for Scientific and Industrial Research, New Delhi.

***Programme Area: Ecotechnology (PA 400)***

Balasubramanian, K. 2003. *Member, Subcommittee on Economic Affairs and Taxation, Confederation of Indian Industry*.

Dhanapal, D. 1999. *Gender Matters Award*. International Development Research Centre.

Nagarajan, Latha. 1995. *United Nations World Youth Leadership Training Summit*. Participated as an Indian representative. New York. 28 August - 1 September.

Nair, Sudha. 2000. *Member of the Regional Advisory Group for Gender Equity Promotion Group for the Asia Pacific Region of the UNDP (2000-till date)*

Nair, Sudha. 2000. *National Focal Point for Gender Science and Technology - UNESCO-UNDP (2000 - 2002)*

Nair, Sudha. 2003. *Board of Director, LEAD India - 2003 – 2006*

Nair, Sudha. 2005. *Member of the Task force on the 'Scientific Advisory Committee on Resource-specific Network programme', DBT, New Delhi – 2005 - 2008*

Nair, Sudha. 2006. *Member of the Steering Committee on S&T for the formulation of the 11<sup>th</sup> five year plan for India, New Delhi - 2006*



Nair, Sudha . 2006 . Member of the Third World Academy of Sciences (TWAS) Task force for Women in Science – 2006 – 2009

Nair, Sudha . 2007 . Member of the Gender Advisory Board, UN Commission on Science, Technology and Development – 2007- till date

Nair, Sudha . 2007 . Member of the CGIAR Panel for Science Awards – 2007

Nair, Sudha . 2007 . Member of the Kerala Biotechnology Commission set up by the Kerala State Council for Science . Technology and Environment 2007

Nair, Sudha . 2007 . Member of the Expert Committee on Soil, Sediment and Microbial Diversity, National Biodiversity Authority of India, 2007-2008

***Programme Area: Information, Education and Communication (PA 600)***

Arunachalam, S. 2001. Honorary Fellow of the Chartered Institute of Library and Information Professionals. United Kingdom.

Arunachalam, S. 2001. Honorary Member of the American Society for Information Science and Technology. United States of America.

Arunachalam, S. 2001. Nominated Stockholm Challenge Award Ambassador.

Arunachalam, S. 2001. Nominated to the Editorial Board of The Electronic Journal of Information Systems in Developing Countries, and as a Trustee of the Electronic Publishing Trust

Arunachalam, S. 2002. Nominated to the International Advisory Board of IICD. The Hague, The Netherlands.

Balaji, V. 2000. *Member, Editorial Committee for the Global Action Plan of Global Knowledge Partnerships.* Global Knowledge for Development (GK2) Conference, Kuala Lumpur, Malaysia.

Parasuraman, N. 2002. Member District Advisory for Youth Programers,' Nehru Yuva Kendra, Chennai, Department of Youth Affairs and Sports, Ministry of HRD, Government of India.

Parasuraman, N. 2003. *International Student /Young Pugwash Board Member (Asian Representative).* International Student / Young Pugwash Board. Italy.

Parasuraman, N. 2003. *World Youth Bank Ambassador to India.* World Youth Bank Network. Croatia.

Parasuraman, N. Member, IUCN - CES, 2005 -2008.

Shanmugavelan, Murali. 2000. *Member, Committee on Education and Environment & Communication (CEO.* The World Conservation Union (IUCN), Geneva.