

J. M. SINGH

Education:

- M.S. in Sustainable Energy Systems & Management (Flensburg University, Germany)
- B.Tech. in Agricultural Engineering (Allahabad University)

Research Interests:

Technology:

- Clean Development Mechanism (CDM), Climate Change, Energy Efficiency, Waste Water, Rural Development, Solar (photovoltaic), Wind, Biomass, Biogas.

Project Management

- Planning, Implementation, Identification, Monitoring and Evaluation, Rural Development, Environmental Assessment of Watershed & Rural Energy Projects,
- Participatory Rural Appraisal (PRA) Techniques
- Qualitative and Quantitative Research Analysis

Ms. KAVITA SINGH

Education:

MSc. Environment Management, Guru Gobind Singh Indraprastha University, Delhi
BSc. Botany (Hons.), Delhi University

Research Interests and Experiences:

Environment and resources management, Climate Change & CDM, Biodiversity conservation, Environmental Impact assessment.

Worked on Climate change related project. "Impacts of Climate change on Water Availability: Case Study of city of Delhi" under "India's initial national communications to UNFCCC, "Increasing Community Resilience for Adaptation to Adverse Impacts of Climate Change: Case Study of a Drought Prone Area in India". Prepared greenhouse gas inventory for different sectors. i.e. "Environmental Information Package for Textile Industry in India". Currently working on "Cement and Transport sector CDM Baseline Development". Proposal writing and organizing national and international workshops.

Membership:

- Member of "Society for Environmental Education and Dissemination (SEED)".

PALLAVI MAITRA

Educational qualifications

- M.A.(Economics), Delhi School of Economics, Delhi University
- B.A.(Hons) Economics, Daulat Ram College, Delhi University

Research Interests

- Environment and resource economics
- Development economics

Current job responsibilities

- Clean Development Management (CDM) project: Compiling the socio-economic profile of selected Annex 1 countries under the UNFCCC and analyzing their policies w.r.t energy and environment particularly climate change and CO₂ emissions.
- Natural Resource Accounting – Goa (Phase II) project: To carry out the natural resource accounting using the SEEA framework for the tourism sector in Goa.
- Fuel Forecasting Study: To forecast demand and consumption needs of energy fuels in India till 2030.

BIENNIAL REPORT

2002-2004

Integrated Research and Action for Development (IRADe)

C-50, Chhota Singh Block, Asian Games Village Complex
Khelgaon, New Delhi -110 049, India
Tel: 011 2649 5522; Telfax: 011 2649 5523
Website: www.irade.res.in

DR. B.D.SHARMA, Senior advisor

EDUCATION AND EXPERIENCE

He has earned his Ph.D in Physics from I.I.T., Madras and D.I.I.T in Solid state physics from I.I.T., Delhi. He has more than thirty years of experience in various organizations in the fields of renewable energy, photovoltaics. He has worked with several national organizations such as BHEL, TERI and international organizations.

OTHER PROFESSIONAL EXPERIENCE

- Working on several projects on Renewable energy, rural electrification and income generation activities in remote villages for sustainable development.. Also working on CDM projects in the area of energy efficiency, renewable energy, transport and hotel industry. Associated with capacity building and international training program in Renewable energy and environment.
- Worked as Director of Sustainable Energy Solutions on several assignments in the area of renewable energy, energy efficiency and innovative clean and eco-friendly technologies as consultants to several corporate clients.
- Worked for the technology forecasting and long range planning in the area of renewable energy including wind, solar, hydel and fuel cells.
- Worked as UNDP fellow in Photovoltaic technology area. Visited several (30 R & D and Industrial) establishment in Germany France, Switzerland, USA and Japan during Nov '92 to June '93. The main stay was at National Renewable Energy Laboratory, Colorado, USA.
- Established the green field project of Amorphous Silicon Pilot Plant at Gwalalpahari for Department of Non conventional Energy Sources, Govt. of India at a cost of 16 crores including the preparation of DPR.
- Developed Photovoltaic cell and module technology and then established complete manufacturing facilities at BHEL, Bangalore.
- Established complete manufacturing facility for large area high power thyristors and diodes in collaboration with M/s. Siemens, West Germany.
- Organised and conducted a large number of Short term courses on Semiconductor technology in addition to regular teaching assignment at IIT, Madras. Guided several students for graduate, postgraduate and doctorate work.

OTHER INFORMATION

Published several technical reports and papers in the international conferences and journals on solid state technology, renewable energy technologies, Financial mechanisms for sustainable development, energy efficient buildings, rural projects etc.

Mrs. MEENU MISHRA

- Education:** B.A {Hons} Economics, Delhi University.
Masters degree in Economics, Delhi school of Economics, Delhi University
M.B.A{H.R.D} from I.G.N.O.U.
- Research Interests:** Local, Regional and Global Environmental Issues related to Development, promotion of non-conventional energy sources, trainings at national and international level& alsot in project planning, implementation, monitoring evaluation.
- Experience:** Field level experience in promoting renewal energy programme in villages work with IREDA.

Dr. JYOTI PARIKH, Executive Director

Education and Experience:

Professor Jyoti K Parikh was a Senior Professor at Indira Gandhi Institute of Development Research (IGIDR). She also worked at the International Institute for Applied Systems Analysis (IIASA). She has experience for nearly thirty on energy and environment problems of the developing countries. She has served as energy consultant to the World Bank, the U.S. Department of Energy, European Economic Community, Brussels and UN agencies such as UNIDO, FAO, UNU, and UNESCO, Environment Consultant to UNDP, World Bank and so on. She served as a visiting professor at the Institute of Advanced Studies (IAS) of UNU in the area of ecostructuring for sustainable development in 1995-96. She was the Acting Director of IGIDR for 1997-98.

She obtained her M.Sc. from University of California, Berkeley, in 1964 and Ph.D. in Theoretical Physics from University of Maryland, College Park in 1967.

Past and Present Interests, Projects and Activities:

She has published nearly 200 research papers, books and monographs in the area of environment, energy and physics. She has carried out national and international projects and guided 12 Ph.D. theses. Her work spans over areas such as environment, energy demand modelling, power system simulations, alternative fuels (CNG, ethanol), biomass allocation in rural energy systems, energy policy, demand side management in electricity sector, impacts of climate change, natural resource accounting, sustainable development and restructuring consumption patterns, incremental costs and Global Environment Facility (GEF), supporting globally efficient projects by GEF, North-South issues in IPCC response strategies, Joint implementation of climate change projects: opportunities for North-South cooperation, trade and environment, and large scale survey on rural energy, water and sanitation, environmental economics for sustainable development into decision making process. It covers four major focal areas: Air Quality; Water Quality; Community Land Regeneration and Biodiversity within the overall framework of sustainable development.

Honours, Appointments and Memberships include

- Boutros Ghali Award for 1995 instituted by the Foundation for United Nations given at the United Nations University (UNU).
- Gold Medal from the Systems Society of India for energy and environment - 1988,
- Bhasin Award for Energy and Environment - 1995.
- Golden Jubilee for India's independence award for energy efficiency – 1997.
- National Project Coordinator of the capacity building project of UNDP covering areas viz. Air Quality; Water Quality; Community Land Regeneration and Biodiversity (\$ 800,000) that involved government, academic and research organisation, stakeholders, industries, pollution control boards. Involved 15 organisations across India, 20 workshops - regional, national and international. More than 50 persons were involved.
- Chairperson of EERC (Environmental Economics Research Committee) World Bank, 1997-2003 distributing US\$ 1.5 million for 56 research projects across India in Universities, NGO and Research Institutes.

International Appointments

- Scientific and Technical Advisory Panel (STAP) to Global Environment Facility, 1999 -98.
- Inter-governmental Panel for Climate Change (IPCC) for Second and Third assesment.
- Member of the Advisory Panel on Biodiversity for Executive Director, UNEP, 1994-1996.
- Advisory Board for the Tyndall Centre for Climate Change Research, based at the University of East Anglia in Norwich, UK, 2000.
- Technical Advisory Group for the Energy Trust Funds Programs, World Bank. (2002-03). She has served on the editorial boards of International Journal, Utilities Policy and Energy, The International Journal and as reviewer for many other journals.



FOREWORD

It gives us great pleasure to bring out the first biennial report of Integrated Research and Action for Development (IRADe) for 2002-04. This new institute was born after a great deal of consultations with visionaries such as Dr Manmonhan Singh, Dr R Mashelkar, Mr. Adi Godrej, Mr. Shirish Patel, Mr. Ela Bhatt, Mr. Keshub Mahindra (and many others). They are the signatories to the charter. Our endeavor was to see how we could push for better and faster development. We recognised that it needs to combine various kinds of perspectives and expertise viz. ability of academic community to analyse and synthesize, managerial and administrative ability of corporate sector, policy insights of government organizations, global perspective of international agencies and NGOs understanding of ground realities. Thus a comprehensive approach towards development requires multi-disciplinary approach and needs participation from government, academic community, NGOs, private and financial institutions. With this in mind IRADe was established in early 2000 as a fully autonomous advanced, non-profit research institute as a registered society.

Professor Kirit S. Parikh, former director of Indira Gandhi Institute for Developmental Research (IGIDR) and myself, a senior professor at IGIDR, started working towards giving IRADe its shape, from early 2000, and IRADe was registered as a society in 2002. There was a transition phase as we had to work both from Mumbai and Delhi, during which we continued to work as honorary members of IRADe.

In this report we present brief description of various events held, projects carried out, publications completed during 2002-04 and about IRADe staff. As the period presented in this report (upto July 2003) overlapped with my stay in Mumbai, we have included two major events viz. my farewell from IGIDR and book release functions for environmental economics. The main focus is however on IRADe activities.

In a short span of time IRADe has started working with government, non-governmental and multilateral agencies as well as private sector. We conducted several national as well as international events. IRADe is fortunate to work with organizations such as UNDP, SANEI-World Bank, Winrock International, Stanford University, Ministry of Non conventional Energy sources, Ministry of Environment and Forests, Institute for Global Environment at Strategies as described in this report for 2002- 2004. In the current year, i.e. 2004-2005, we are also working with Self Employed Women's Association (SEWA), United Nations Environment Programme (UNEP), Invest India Economic Foundation, Pricewaterhousecoopers, Reliance Industries Ltd. and so on.

IRADe is committed to contributing to development through training programmes, policy dialogues, publications of various types, field level work, networking and collaborations with other intitutions.

Jyoti Parikh
Executive Director



"First Meeting of the Governing Council, December 2002"
 Left to right: Kirit Parikh, Shirish Patel, Dr. Manmohan Singh, Jyoti Parikh, R. Mashelkar, Adi Godrej.

LIST OF FOUNDING MEMBERS

Kirit S. Parikh (Chairman)	Economist and Engineer
Jyoti K. Parikh (Executive Director)	Scientist: Energy & Environment
Ela Bhatt	Founder, SEWA
Adi Godrej	Industrialist
Keshub Mahindra	Industrialist
R.A. Mashelkar	Director General, CSIR
Shirish Patel	Consulting Engineer, Treasurer
Manmohan Singh	Member, Rajya Sabha

Dr. KIRIT S. PARIKH, Chairman, IRADe

- Member, Planning Commission, Government of India.
- Chairman, Integrated Research and Action for Development (IRADe), (since 2002).
- Professor Emeritus and Former (Founder) Director (Vice Chancellor) of Indira Gandhi Institute of Development Research (IGIDR) - An Advanced Research Institute 1986-2003.

Dr Kirit S. Parikh has a Sc.D. in *Civil Engineering* and a Master's Degree in *Economics* from MIT, USA. He has been a *Professor of Economics* since 1968.

He was a member of the Economic Advisory Council (EAC) of the Prime Ministers of India, Atal Bihari Vajpayee, P.V. Narsimha Rao, Chandra Shekhar, V.P.Singh and Rajiv Gandhi.

In the past he had also been a member of the highest level advisory bodies of the Government of India concerning environmental planning, science and technology policy and energy policy, namely, National Committee for Environmental Planning & Co-ordination, the National Committee on Science and Technology and the Fuel Policy Committee.

He is a Fellow of the National Academy of Sciences, India. He is also Fellow of the World Economic Forum, Davos. He had been president of The Indian Econometric Society and Gujarat Economic Association. He is on the governing board of many development research Institutes in India. He has also been Chairman of some of these. He is a member of the Board of Directors of Institute for Global Environmental Strategies (IGES) of Japan.

Dr. Parikh has also been on the Board of Directors of a number of major industrial firms and financial institutions. Among these are Indian Petro-Chemicals Limited (past), Life Insurance Corporation (past), Industrial Development Bank of India and State Bank of India.

In 1978 he was given the Vikram Sarabhai Award for Systems Analysis and Management. In 1999 he was given the "Bharat Ratna Vishweshwaraya Award" by the Engineers' Foundation in Kolhapur. In 2003 he was made honorary life member of the International Association of Agricultural Economists.

In 1997-98, on sabbatical leave from the IGIDR to serve as a Special Economic Adviser to the Administrator, United Nations Development Programme (UNDP), New York. From 1980-86, as Program Leader of the Food and Agricultural Program of the International Institute for Applied Systems Analysis (IIASA), Austria, he directed a research programme involving 300 person years of efforts of more than 100 researchers from around the world. From 1960-80, he was Professor of Economics (and sometimes Head) of the Indian Statistical Institute (ISI), New Delhi. From 1969-71, as Director of Program Analysis Group (PAG), Department of Atomic Energy (DAE), Government of India, he set up PAG to provide economic, operation research and management advice to different units of the DAE. From 1964-67 he was a Research Associate at the Center for International Studies, MIT.

Dr. Parikh has edited 4 issues of "India Development Report" from 1997 onwards which provides a non-governmental assessment of India's development and policy options.

Dr Parikh has also authored and co-authored 16 books and edited 6 books in the areas of

- *planning,*
- *water resource management*
- *appropriate technology for housing*
- *optimum requirement for fertilizers*
- *energy systems*
- *national and international food policies*
- *trade policies*
- *general equilibrium modeling*
- *environmental governance and*
- *natural resources accounting*

He has also published numerous articles.

3. Executive Summary titled “Energy, Water, Sanitation and Health in Rural North India” prepared as part of the project “Rural Energy and Health Impact”.
4. Consumption patterns : Economic and Demographic Change, Encyclopaedia of Global Environmental Change, Volume 3, Causes and Consequences of Global Environmental Change, Edited by Professor Ian Douglas, Editor-in-Chief, Ted Munn, John Wiley & Sons, Ltd., Chichester, 2002, pgs 249-252.

Meenu Mishra, Consultant

1. ESMAP Client survey project and preparation of reports (Mid term and final report, summaries of ESMAP project reports and questionnaires).
2. Concept note for 1st UNEP-ETB’s capacity building, UNEP Meeting of Institutions for Sustainable Development (NISD) at Korean Environment Institute (KEI), South Korea on 26th March 2004 (Preliminary Draft for Discussion).

J. M. Singh

India’s Greenhouse Emissions and

Reduction Potentials through Renewable Energy Technologies. J. M. Singh and Jyoti K. Parikh. Accepted Paper for presentation during International Conference on Renewable Energy (June, 2004), Bonn, Germany.

Kavita Singh

1. “Cement & Building Materials: Energy Efficiency, Carbon saving & CDM” for Special Session: “Cement, Climate Change and CDM” . Kirit S. Parikh, Jyoti K Parikh and Kavita Singh. Paper presented at “1st International Exhibition & Conference on Building materials and Construction Technologies” on February 13, 2004.
2. IRADe, NCB joint paper “Green House Gas Emissions from Cement Industry- Future Trends”.

Pallavi Maitra

Completed draft report on Germany for the CDM project. The report attempts to bring out Germany’s scenario w.r.t. its national circumstances including energy profile, the greenhouse gas emission trends over the past decade and finally the policies and measures undertaken, both domestic and international, to meet its Kyoto target.

LIST OF STAFF

Sr. No.	Name	Designation
1.	Dr. Kirit S. Parikh	Chairman
2.	Dr. Jyoti K. Parikh	Executive Director
3.	Dr. B.D. Sharma	Senior Advisor
4.	Mrs. Meenu Mishra	Consultant
5.	Er. J. M. Singh	Consultant
6.	Nitesh Sahay	Consultant
7.	Pinaki Joddar	Research Assistant
8.	Mrs. Kavita Singh	Research Assistant
9.	Ms. Pallavi Maitra	Research Assistant
10.	Mr. Amit Shekhawat	PA to Executive Director

INTEGRATED RESEARCH AND ACTION FOR DEVELOPMENT (IRADe)

1. BACKGROUND AND FOUNDING OF THE SOCIETY

Development that increases the welfare of all its citizens, especially the poor and the disadvantaged, involves innovation and change. It requires new thinking, new activities and new approaches that involve perspectives from several disciplines.

A comprehensive approach to development inherently involves the participation not only of the government, but also of NGOs, industry, corporations and financial institutions, it is essential that these stakeholders be involved as partners at all stages of the research process. An inclusive research process creates wider consensus and makes policy reforms more acceptable.

With these ideas **Integrated Research and Action for Development (IRADe)** is set up as a fully autonomous advanced research institute, which aims to do research and policy analysis, train people and be a hub network among various stakeholders.

IRADe was registered as Society on September 5th, 2002 under the “Registration of Societies Act-Act XXI of 1860” with Registration No. S 43706. The main objectives of the society are given below. The list of founding members is given in Annexure-1. The rules and regulations envisage six year term for the council members. Society’s office would be located at 50, Chhota Singh Block, Asian Games Village Complex, Khelgaon, New Delhi-110 049.

IRADe is a new kind of research institute that focuses on.

- Research for effective action.
- Multi-disciplinary, multi -stakeholder research for implementable solutions.

- Policy research that accounts for the political economy of the society and effectiveness of governance.

It is a ‘think tank’ that works with ‘do tanks’

2. OBJECTIVES OF IRADe

The objectives of IRADe are as follows:

- To redefine the problems in terms directly related to and understood by the stakeholders;
- To develop understanding that integrates multi-stakeholder perspectives concerning issues of development;
- To develop capacities among professionals for multi-disciplinary multi-stakeholder policy analysis;
- To promote a wider consensus on such policies among stakeholders and policy makers;
- To disseminate ideas and insights to promote sustainable and inclusive development;
- To promote implementation of ideas on development;
- To help upgrade and reorganize existing institutions to promote integrated development; and;
- To network with existing institutions;

3. PROGRESS OF ACTIVITIES

3.1 FIRST MEETING OF THE GOVERNING COUNCIL

This meeting took place on December 24th, 2002 at New Delhi. Professor Jyoti Parikh was appointed as the Executive Director, Mr. Shirish Patel as the treasurer and Mr. A. K. Verma as the Auditor.

3.2 SECOND MEETING OF THE GOVERNING COUNCIL

The council met on 31st October, 2003, and deliberated on various options in terms of activities and funding. Mr. Adi B. Godrej, Mr. Keshub Mahindra, Dr. Jyoti Parikh Mr. Shirish Patel member of governing council were presents. Dr. Kirit Parikh chaired the meeting.

3.3 RESEARCH PROJECTS, TRAINING PROGRAMMES, AND SEMINARS

IRADe obtained a number of projects during the year. These projects and the progress as follows:

3.2.1 GHG Reduction Potential, Sectoral Base Lines and Opportunities for CDM Projects.

Background and Objective:

In March 2003, Ministry of Environment and Forests awarded IRADe a two year research project entitled “GHG Reduction Potential, Sectoral Base Lines and Opportunities for CDM Project” to prepare a report reflecting on various aspects of Clean Development Mechanism (CDM) for Climate Change. CDM is a mechanism proposed in Kyoto Protocol by which the developed countries could invest in developing countries to reduce Greenhouse Gas (GHG) emissions. This could be done by initiatives that increase efficiency with which fossil fuels are used or by using renewable energy in place of fossil fuels or measures that reduce need for energy. CDM allows developed countries who are required to reduce their GHG emissions to purchase GHG credits (or permits) known as certified emission reduction (CER) from other countries.

The scope of the project is as follows: need to be modified.

- ▶ Study the emissions from the developed countries to estimate their needs for buying CERs.

- ▶ Estimate India’s ability to generate CER from renewable energy, and energy efficiency in major sectors such as steel, cement and so on.
- ▶ Study the CER market elsewhere and suggest institutional framework for India.
- ▶ Disseminate findings through workshops and seminars.

Progress and Achievements:

The project started in operation from September 2003. The following works has been done during the reporting year:

Completed preliminary report on National Circumstances, Energy Profiles, Greenhouse Gas Emission trend and their respective policies for the Germany, The Netherlands, Canada, Japan.

- ▶ Prepared a status Report on wind energy potential for CDM.
- ▶ Prepared status report on “Indian Cement industry: An Overview “.
- ▶ Completed studies on Energy use in Cement Industries in The United States of America.

3.2.2 Energy Policy Reforms and Agriculture in India: A general Equilibrium Exploration.

Background and Objective:

This study is a part of the Program on Energy and Sustainable Development (PESD) at Stanford University and will focus on extension of our macroeconomic model of the Indian economy for the purpose of examining the impact of energy policy reforms on energy and agricultural products in India.

Integrated Research and Action for Development (IRADe) will upgrade and validate a general equilibrium model that includes explicit treatment of commercial energy inputs in the agricultural sector and allows analysis of the impact of energy and



Dr. Jyoti Parikh receiving a memento from Dr. A.P.J. Abdul Kalam, The President of India during the seminar “Energy, Environment and Development” organized to felicitate her farewell from IGIDR in July 2003.



Mr. N.K. Singh, Member, Planning commission releasing “Reconciling Environment and Economics” Executive summary of EERC projects during the 3-day seminar on the occasion of her farewell from IGIDR. Left to right: T.L. Sankar, Rakesh Mohan, T.L. Raghuram, N.K. Singh, Jyoti Parikh, Kirit Parikh, B.S. Reddy.

building materials and construction technologies organized by NCB and IRADe, February 13, 04 at Pragati Maidan, New Delhi.

3. Attended Clean Technology Initiatives seminar on technology and diffusion in India organized CTI in co-operation with ASSOCHAM, Canadian High commission at Hotel Maurya Sheraton on 11-12 March 2004.
4. Global Village Energy Partnership meeting on 16th March 04 at The Energy Resource Institute, Lodi Road, New Delhi

J. M. Singh

1. Attended Clean Technology Initiatives Seminar on “*Technology and Diffusion in India*” organised by Clean Technology Initiatives in cooperation with ASSOCHAM, India Energy Forum and Natural Resources Canada from March 11-12, 2004 held Hotel Maurya Sheraton, New Delhi
2. Participated in *International Round Table on clean Development Mechanism*, organized by The Energy Resource Institute, New Delhi and world Business council for sustainable Development, Geneva on 10 Nov, 03 at New Delhi.

Ms. Kavita Singh

1. Attended special session on “Cement climate change and CDM” during 1st International Exhibition and Conference on Building Materials and Construction Technologies” on 13 February 2004 at Pragati Maidan, New Delhi.

Books, Monographs, Journal Articles and Reports

Prof. Jyoti K. Parikh,

1. *Sustainable Management of Wetlands*, Jyoti Parikh and Hemant Datye, Sage Publishers, New Delhi-June, 2003.

2. *Reconciling Environment and Economics*, Jyoti Parikh with T.L. Raghuram EERC Monograph, 2003.

3. “Cooking with Biofuels; Risk factors affecting health impact on rural women in North India”, Jyoti Parikh, Haimanti Biswas, Shyam Karmarkar, *Economic and Political Weekly*, June 2003.

4. “South Asian Energy and Emission Perspectives for 21st Century”, Jyoti Parikh and Kankar Bhattacharya, papers accepted for presentation at IIASA workshop in Austria (2003).

5. “Transport Scenarios in two metropolitan cities, Delhi and Mumbai”, Jyoti Parikh, Anjana Das, *Energy Conversion and Management*, Elsevier Press, UK.

6. “Mainstreaming Gender and Energy in South Asia”, *Energia*, International Network on Gender and Sustainable Energy, paper presented at the World Summit on Sustainable Development, South Asia and published in ITDG Newsletter, 2003, UK.

7. National circumstances for climate change Project Report for the Ministry of Environment and Forests, August, 2003.

8. “Daily Average Exposures to Respirable Particulate Matter from Combustion of Biomass fuels in Rural Households of Southern India”, Kalpana Balakrishnan, Jyoti Parikh, Sambandam Sankar, Ramaswamy Padmavathi, Kailasam Srividya, Vidhya Venugopal, Swarna Prasad and Vijay Laxmi Pandey, *Environmental Health Perspectives*, Volume 110, No. 11, November 2002, pgs 1069-1075.

2. Mainstreaming Gender and Energy in South Asia, *Energia*, International Network on Gender and Sustainable Energy, Asian Regional paper prepared for the World Summit on Sustainable Development, August 2002.

agricultural policies on the prices of agricultural products. Ultimately, the research and data will allow construction of a model of a community of rural households in order to investigate different aspects of patterns of energy consumption, utilization and demand in the farm sector. The aim of the project is to understand precisely this in a quantitative way.

- What would be the impact on welfare of different groups of people of increasing prices of power and fertilizer relative to those of agricultural outputs?
- Even when the state decides to subsidize agricultural power, there is still a need to understand the impact of change in power tariff on agriculture to set an appropriate level of subsidy and to monitor the subsidy. What is the appropriate level of subsidy?
- What are the most relevant scenarios of price changes and other associated policy measures that we should examine?

Progress and Achievement:

- Data collection work has been nearly completed. Some cleaning work to ensure consistency and to deal with the problem of missing observation is in progress. Methodological approaches have been identified. Econometric testing is underway.
- A workshop will be organized on 19th April, 2004 in Delhi to obtain suggestions and feedback regarding approach and possible scenarios of interest to the various stake holders.

3.2.3 Impact of fuel Scarcity and Pollution on Rural Poor

The project entitled “Impact of fuel scarcity and Pollution on Rural Poor” is funded by global development network (GDN) through its regional working group (SANEI) South Asian Network, New Delhi. The overall objective of the research project is to assess the impact of

scarcity of clean fuels as well as of traditional fuels and assess in economic terms the impact of pollution from the use of traditional biofuels on vulnerable groups of rural poor in Himachal Pradesh in the context of their socio-economic circumstances, access to fuel, needs and willingness to pay for cleaner fuels.

In order to achieve the overall objective the following specific (sub) objectives have been set:

- Estimate economic cost of lack of access to clean fuels and reliance on often scarce bio-fuels, such as loss of time in gathering fuels, its opportunity costs and health impact associated with carrying heavy use of dirty fuels and impure water causes many health problem. Also lack of access to clean fuels and pure water imposes a large burden of time and effort in obtaining there. The burden falls particularly on women’s and children, as a consequences whose education often suffers.
- Characterize and profile various vulnerable groups in Himanchal Pradesh.
- Analyse the impact of use of clean fuel vs traditional dirty fuel biofuels on the basis of health indicators.
- Estimate their willingness to pay for clean fuels so that measures can be designed considering people’s preferences and their willingness to pay so that one can design measures in which they have a stake.
- Present the information collected and analyse the impact of Government policy of additional quota of clean fuels, so that it can be used for energy policy and health policy at the state level.
- Discuss and disseminate results with policy makers and NGOs to improve the lives of the vulnerable poor.

The project was approved formally in late March, 2004.

3.2.4 International Training Programme on “Renewable Energy in Local, National and Global Context with Socio-economic Perspectives”.

Background and Objectives:

Integrated Research and Action for Development (IRADe) organized a two weeks International Training Program in February-March, 2004 on “Renewable Energy in Local, National and Global Context with Socio-economic Perspectives”. The training was sponsored by Ministry of Non-conventional Energy Sources, Govt. of India. The specific objectives of the international training course were:

- ▶ To give a broad based understanding of renewable energy in the overall context of energy sector planning and global energy and environmental issues.
- ▶ To give national and global energy perspectives and discuss new paradigms to reduce fossil fuel dependence.
- ▶ Techno-economic understanding of major renewable technologies.
- ▶ To stress the need for approaches that call people’s participation; and.
- ▶ Hands on experience about energy balance

The participants:

Participants were from middle, senior level rank officers (Director, Executive Director, Advisor, Assistant Professor, Assistant lecturer) from ministries, non-governmental organizations and universities. They were from different countries viz. as Algeria, Bangladesh, Indonesia Iran, Nepal, Nigeria, Malawi, South Africa, Sri Lanka, and Thailand. The participants were from different background and work experiences such as renewable energy and environmental management, natural resource management, environmental geography, energy (oil sector), statistics and environmental health, small hydropower, solar, biomass, energy economics and communication and information.

Course contents:

The overall content of the training course covered topics such as fundamentals of energy efficiency, techno-economic analysis, biomass gasifier, hydrogen energy, financial evaluation of energy technology, techno-economic assessments of renewable energy, participatory approaches and community based initiatives, clean development mechanism, climate change, entrepreneurship and livelihood, participatory rural energy services and participatory process, gender issues in renewable energy, energy



Figure: Shri A.M Gokhale (Secretary, MNES, Govt. of India), Dr. Kirit S. Parikh (Chairman, IRADe) and Prof. Jyoti K. Parikh (Executive Director, IRADe) with the participants and organizers.

12. Review of the Tyndall Center for Climate Change, 22nd –24th April 2003, Norwich. UK.
13. Annual Meetings of the Consultative Group for the Energy Trust Funded Programs, April 28-30, 2003, Deutsche Gessellschaft fuer Technische Zusammenarbeit (GTZ), Berlin, Germany.
14. EU Research proposal Evaluation in Global change, 3rd – 5th May 2003, EU, Brussels.
15. Millennium Ecosystem Assessment (MA) Responses Working Group meeting, May 19-23rd 2003, Frankfurt, Germany.
16. Energy, Environment and Sustainable Development, Seminar in honour of Prof Jytoi K. Parikh, July 6-7, 2003 IGIDR, Mumbai.
17. Chaired the discussion session at workshop on “Building of Small-scale CDM Projects” organized by IT Power India, 25th August 2003, New Delhi.
18. Meeting of Committee on Distribution Reforms (DRUM) project, SAID Ministry of Power, August, 2003, New Delhi.
19. Attended meeting of Winrock International at MOEF, 14th August, 2003, New Delhi.
20. India’s first conference on ‘Socially Responsible Investment in India: Prospects & Challenges” by CSM, September 12, 2003, Mumbai, India.
21. Millennium Ecosystem Assessment (MA) Combined Working Group Meeting, October 13 – October 17, 2003 Prague, Czech Republic.
22. International Gender Poverty Summit, 9th –11th November 2003, Vigyan Bhawan, New Delhi. Addressed the conference on “State Policy and Planning for Gendered Economic Security”.
23. Inception/Brainstorming Session on “Measures to Overcome Barriers for Wider Adoption of Cleaner and Energy Efficient

- Technologies in Delhi and Mumbai Transport Systems”, Swedish International Development Agency & ARRPEEC Phase III, 18th November 2003, IGIDR, Mumbai.
14. Annual Assessment Panel and Advisory Board meeting of Tyndall Center, 26th–27th November 2003, UK.
15. Attended meeting of ENERGIA, December 1-3, 2003, Bangkok, Thailand.
16. Indian Society of Ecological Economics (INSEE), biannual meeting at Kolkata-December, 2003.
10. Quarterly meeting of Technical Advisory Group (TAG), World Bank, September, 17-18th September, 2004 Denmark.
17. Quarterly meeting of Technical Advisory Group (TAG), World Bank, January 20-23rd, 2004 Washington and New York.
18. Keynote lecture given for Special Session on “Cement, Climate Change and CDM” at 1st International Exhibition and Conference on Building Materials and Construction Technologies, 13th Feb. 2004, New Delhi.
19. Summit on “India in Global and Regional Context” 22nd–24th February 2004, Global Development Network (GDN) New Delhi, India.
20. Lectures given at International Training Programme on “Renewable Energy in Local, National and Global Context with Socio-economic Perspectives” organized by IRADe, February 24 – March 05, 2004, New Delhi, India.

Mrs. Meenu Mishra

1. Attended the South Asian Forum on the Clean Development Mechanism, New Delhi, India, February 2-4, 2004.
2. Attended special session on “Cement climate change and CDM” during first International exhibition and conference on

- World Bank (2003) that include Energy Sector Management Programme (ESMAP), Asia Technical Assistance in Energy (ASTAE), Africa Renewable Energy Initiative (AFREN), Africa, 2002-2006.
- 4. Advisory Board of **Tyndall Center for Climate Change**, University of East Anglia, Norwich, UK, 2001-2004.
- 5. Steering Committee: **Global Village Energy Partnership (GVEP)** initiated of ESMAP/ World Bank, August 2002-2003.
- 6. International Steering Committee of **ENERGIA**, Network on Gender and Environment, Netherlands, 2002-2004.

National Appointments:

- 1. Member, Committee on Distribution Reforms (DRUM), Ministry of Power, New Delhi.
- 2. Member, Climate Change and Insurance Task Force, Ministry of Environment and Forests, New Delhi.
- 3. Executive Committee, Petroleum Conservation Research Association, New Delhi.
- 4. Member, Board of Directors, Indian Renewable Energy Development Agency Ltd. (IREDA), Government of India, Ministry of Non-Conventional Energy Sources (MNES), 2001-2004.

Seminars, Conferences, meetings

- 1. Presented EERC project paper from the project "Rural Pollution and Health Impact" at the World Summit on Sustainable Development (WSSD) which took place at the Sandton Convention Centre from 26th August to 2nd September, 2002.
- 2. Three-day conference titled "Indian and German Perspectives on Climate Change" to be held at Potsdam Institute for Climate Impact Research, 25-27th September 2002, Potsdam, Germany.
- 3. Keynote address at Inter-regional conference on adaptation to climate change – October 18-20, 2002, during COP 8, New Delhi.
- 4. Panel discussant at International conference on S&T Capacity Building for Climate Change, A joint Program of FICCI and Department of Science & Technology, October 20-22, 2002, during New Delhi.
- 5. Convened COP8 Event on "Clean Development Mechanism (CDM) and Sustainable Development (SD) on 25th October 2002 at India Habitat Centre, New Delhi.
- 6. Chaired COP8 event on Insurance and Climate Change-Issues and Opportunities on 28th October 2002 held at Vigyan Bhawan, Delhi.
- 7. Convened COP 8 event : Is the Gender Dimension of the Climate Debate Forgotten? Engendering the Climate Debate : Vulnerability, Adaptation, Mitigation and Financial Mechanisms on 29th October 2002 at India Habitat Centre, New Delhi.
- 8. Theme address at the India Energy Meet on "Climate Change and Clean Development Mechanism" organized jointly by India Energy Forum, INWENT of Germany and ASSOCHAM held on 28th January 2003 at The Oberoi, New Delhi.
- 9. USAID Dialogue on Energy Efficiency and Climate Change held on March 13-14, 2003.
- 10. Attended World Forum 2003 – Biomass Energy Workshop – Energy Markets Workshop, Energy and Poverty Workshop from 22nd February to 1st March 2003 at the World Bank, USA.
- 11. 145th Meeting of IREDA's Board of Directors and 10th Meeting of Committee of Directors held at New Delhi on 20th March, 2003.



Shri A.M.Gokhale: Inaugurating the International Training Programme.



Prof. Kirit S Parikh, Chairman, IRADe introducing the Training Programme.

initiatives at community level, health aspects of water and sanitation & health in rural area.

Figure: Shri A.M Gokhale (Secretary, MNES, Govt. of India), Dr. Kirit S. Parikh (Chairman, IRADe) and Prof. Jyoti K. Parikh (Executive Director, IRADe) with the participants and organizers.

3.3 WORKSHOP/SEMINAR ACTIVITIES

One day Workshop on "Opportunities for Energy Efficiency and Clean Development Mechanism (CDM) in Cement and Building Materials."

IRADe organized a special session on "Opportunities for Energy Efficiency and Clean Development Mechanism (CDM) in Cement and Building Materials" on Feb 13, 2004 at Pragati Maidan during the 1st International Exhibition on Building Materials. The workshop was financed by the Institute for Global Environmental Strategies, Japan.

Objective:

The objectives of the workshop were.

- ▶ Assess the demand for cement under various scenarios.
- ▶ Analyze suitable opportunities for energy saving and associated greenhouse gas.
- ▶ Encourage substitute of cement by less GHG intensive materials.

- ▶ Invite national and international viewpoints on CDM project from cement production.

- ▶ Discuss methodological issues for CDM projects such as, baseline determination, estimating energy and carbon savings, calculation of cost and price of savings and problems associated with issuing CERs.

- ▶ Dr. Pradipto Ghosh, Secretary, Ministry of Environment and Forests, inaugurated the session. More than 250 participants were participated in this workshop. Keynote papers prepared by Dr. J. Parikh and Mr. B. S. Roy highlighted the potential growth on cement industries and the emissions of Green House Gasses, major possibilities to improve energy efficiency and opportunities for technology change. The opportunities for CDM projects in the sector were also discussed.

4. PROFESSIONAL ACTIVITIES OF THE MEMBERS IN 2003-04

4.1 Dr. Kirit S. Parikh

Membership of committees

Policy

Member, Economic Advisory Council of the Prime Minister.

Member, Energy Policy Committee, Planning Commission, Govt. of India.

Academic

Member, Board of Director, Institute of Global

Environmental Studies, Japan.
 Chairman, Governing Council, Centre for Environment Education, Ahmedabad
 President, Governing Board, Gujarat Institute of Development Research, Ahmedabad.
 Member, Governing Council, Indian Council for Research on International Economic Relations, New Delhi.

Finance

Member, Board of Director, State Bank of India
 Member, Board of Director, Industrial Development Bank of India.

Honours

Elected as life Member of International, association for Agricultural Economics (IAAE).

Media

Member, Board of Directors, *Business Standard*.
 Member, Board of Economists, *India Today*.
Seminars, Conferences, meeting attended .

1. Policy Analysis and Advisory Network for South Asia (PAANSA) meeting, New Delhi, August 05, 2003.
2. Delivered the Keynote Address in the Final Outreach Meeting of “Globalization, Liberalization and the Indian Informal Sector”. September 23-24, 2003.

3. Seminar on “Sustainable Infrastructure Financing at State Level- Issues and Prospects” held at Bombay during November 29, 2003.
4. Chaired the Technical Session of International Workshop on Agribusiness from Parastatals to Private Trade –Why, When and How “, December 15, 2003.
5. International Symposium on “Rural Development and Poverty Reduction Strategies”, ICRISAT, Patancheru December 16, 2003.
6. Inaugural address at the 86th Annual Conference of the Indian Economic Association, “Policy Engineering”, Shivaji University, Kolhapur, December 29-31, 2003.
7. Invited talk “The Ethical Scientists at the Global Haat” at the 91st Indian Science Congress” organized by Panjab University and Institute of Microbial Technology, Chandigarh held at Chandigarh during January 3-7, 2004.
8. Inaugural address “The Global economic : shape of things to come”. Nirma International Conference on Management-2004. January 2-4, 2004.
9. Presented paper titled India: Economic Growth Prospects and Challenges. ASEAN-



Dr. Kirit Parikh welcoming delegate



- INDIA FORUM, February 9-10, 2004.
10. Chaired the Session of “1st International Exhibition and Conference on Building Materials and Construction Technologies”, New Delhi, February 13, 2004.

Research project/research work completed/undertaken/Publications.

1. “Growth and Welfare: Consequences of a Rise in Minimum Support Prices: An Applied General Equilibrium Analysis for India”, Report submitted to Department of Economic Affairs, Ministry of Finance, Government of India, June 2002 with A. Ganesh Kumar and Gangadhar Darbha.
2. *India Development Report 2002*, Oxford University Press, New Delhi, 2002, Co-edited with R. Radhakrishna.
3. Chapters in *India Development Report 2002*
 - a. “Overview: Ten Years of Reforms: What Next?”
 - b. “Social Infrastructure: As Important As Physical Infrastructure”
 - c. “Reforms in Power Sector “– with Jyoti K. Parikh.
 - d. “Climate Change: India’s Perceptions, Positions, Policies and Possibilities” – with Jyoti K. Parikh.
4. *Environmental Governance for Sustainable Development in Asia and the Pacific*, ST/ESCAP/2218, United Nations, New York, 2002.
5. “Growth and Welfare Consequences of a Rise in Minimum Support Prices: An Applied General Equilibrium Analysis for India”, *Economic and Political Weekly*, with A. Ganesh Kumar and Gangadhar Darbha.
6. “Reforming Power Sector Markets”, in Kaushik Basu, Pulin B. Nayak and Ranjan Ray (Eds), *Markets and Governments*, Essays in honour of Mrinal Dutta Chaudhary, Oxford University Press, New Delhi. 2003.

7. “Political Economy of Growth and Reforms in South Asia”, Saman Kelegama and Kirit S. Parikh, in Isher J. Ahluwalia and John Williamson (Eds.), *The South Asian Experience with Growth*, Oxford University Press, New Delhi, 2003.
8. “Poverty, Well-being and Governance in a Globalising World”, Yashwantrao Chavan Memorial Lecture (2002-2003), Mumbai .
9. *How Important is Land Consolidation? Land Fragmentation and Implications for Productivity: Case Study of Village Nelpathur in Tamil Nadu*, with Hari Nagarajan, Project Research Report Submitted to National Bank for Agriculture and Rural Development, March 2003.
10. “Human Development and Global Governance”, Presented at Third World Academy of Science 8th General Conference, New Delhi, 19-23 October 2002.
11. “Attaining 8 Percent Growth in Globalizing world of Rapid Technological Change”, Chimanbhai Patel Memorial Lecture, February 17, 2003, Ahmedabad.
12. “Climate Change and Sustainable Development: View from the Developing World”, Paper presented at IPCC Expert-Consultative Meeting, Colombo, 5-7, March 2003.

4.2 Prof. Jyoti K. Parikh, Executive Director; Current Appointments and Memberships of Committees, etc.

International Appointments:

1. Member of the Research Advisory Committee of the **Institute for Global Environmental Strategies (IGES)** Japan, April 1, 2002 till March 31, 2005.
2. Convening Lead Author for the chapter on “Carbon Regulation for **Millennium Ecosystem Assessment**”-2002 till 2005.
3. Technical Advisory Committee (TAG) for Energy Trust Funds Programmes of the