

Integrated Research and
Action for Development
(IRADe)

Highlights:
Research Programmes and Events

INTEGRATED RESEARCH AND ACTION FOR DEVELOPMENT (IRADe)

BACKGROUND AND FOUNDING OF THE SOCIETY

IRADe is a fully autonomous advanced research institute, which aims to conduct research and policy analysis and connect various stakeholders including government, non-governmental organizations (NGOs), corporations, and academic and financial institutions. Its research covers many areas including energy & power systems, urban development, climate change & environment, poverty alleviation & gender, food security & agriculture, as well as the policies that affect these areas. IRADe is an institute that focuses on research and effective action through:

- Multi-disciplinary and multi-stakeholder research for implementable solutions for sustainable development
- Policy research that accounts for the effective governance of techno-economic and socio-cultural issues.

It is a ‘think tank’ that works with ‘action tanks’.

OBJECTIVES

- To develop understanding that integrates multi-stakeholder perspectives concerning issues of development.
- To promote a wider consensus through research and analysis on effective policies among stakeholders and policy makers.
- To build capacities among professionals for multi-disciplinary, multi-stakeholder policy analysis.
- To promote ideas and initiatives for inclusive developments at the local and global levels.
- To promote research supports to developing countries for development and also to negotiate international agreements better.

THEMATIC AREAS:

- **Energy and Power System (EPS)**
- **Urban Infrastructure and Services (UIS)**
- **Climate Change and Environment (CCE)**
- **Poverty Alleviation and Gender (PAG)**
- **Agriculture and Food Security (AFS)**

The key activities:

- **Research and Analysis for Decision Support**
- **Research in Action, Monitoring & Evaluation projects(AME)**
- **Training and Capacity Building(TCB)**
- **Policy Advocacy and Dissemination(PAD)**

2Colored areas show the States, where IRADe did projects in the past and the boxes shows, where we worked in 2009-10

FOUNDING MEMBERS

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

+ At the time of IRADe registration in 2002

*Resigned after the first term.



CURRENT GOVERNING COUNCIL

Name	Designation
Dr. Kirit S. Parikh (Chairman)	Economist and Engineer
Dr. Jyoti K. Parikh (Executive Director)	Scientist: Energy & Environment
Ms. Ela Bhatt	Founder, SEWA
Dr. Rakesh Mohan,	Former Deputy Governor, RBI ⁵
Mr. R. A. Mashelkar	Director General, CSIR
Mr. Keshub Mahindra	Industrialist

Other Members:

Mr. Shirish Patel	Consulting Engineer, Treasurer
Mr. Hemant Sahai	Hon. Treasurer
Mr. Ashok Kumar Verma	Chartered Accountant

INTERNATIONAL ADVISORY BOARD

Name	Position
Mr. Nitin Desai	Currently at TERI *
Prof. Amartya Sen	Harvard University
Prof. Gustav Speth	Yale University
Sir Nicolas Stern	U K Treasury
Prof. Joseph Stiglitz	Columbia University

* Formerly Under Secretary General, United Nations

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RECOGNITIONS AND MEMBERSHIP

IRADe is registered under Society's act established in 2002 at New Delhi. It qualifies as an R&D organization and has received a certificate to that effect from the Department of Scientific & Industrial Research (DSIR), Ministry of Science & Technology (MoST). IRADe is also recognized as a Centre of Excellence by the Ministry of Urban Development (MoUD) for Cities & climate adaptation. It provides expertise to various ministries from time to time as required.

A. institutional recognitions:

- IRADe has been designated as a Center of Excellence in the area of Urban Development on "Climate Change Vulnerability and Adaptation" by the Ministry of Urban Development (MoUD), Government of India.
- IRADe is recognized as "Scientific & Industrial Research Organizations (SIRO)" by Department of Scientific and Industrial Research, Government of India on 16th September 2008.
- IRADe has been selected as the National Focal Point for India for International network on Gender and Energy by ENERGIA.
- IRADe is a member of NATCOM network established by the Ministry of Environment & Forests for Climate Change.

B. Other distinctions:

- Dr. Jyoti Parikh, Executive Director- the chief of the Organization- is a member in the Prime Minister' Council for National Action Plan for Climate Change and is also a member of the Intergovernmental Panel on Climate Change (IPCC).
- Dr. Parikh is also honored by Nobel Peace Committee for contributing to IPCC (Intergovernmental Panel on Climate Change) with the Award of the Nobel Peace Prize for 2007.
- She is a fellow member of the National Academy of Sciences, India (NASI)
- The Executive Director of IRADe is a member of Board of Director, North South Institute (NSI), Ottawa, Canada and National Institute of Urban Affairs (NIUA), New Delhi

PARTNERSHIPS DEVELOPED

IRADe networks with the government, ministries/ departments, international organizations, the public & private sectors and engaging academic experts, NGOs, and consultants to work on projects awarded by them. The ministries include Ministry of Environment and Forests, Ministry of New and Renewable Energy, Planning Commission, Ministry of Power, Ministry of External Affairs, Department of Science and Technology, Ministry of Earth Sciences, Central Statistical Organization under Ministry of Statistics and Programme Implementation, TIFAC, Rural Electric Corporation etc for many national level projects. At the international level, IRADe has worked with Stanford University, California, USA; Wuppertal Institute for Climate, Environment and Energy, Germany; UNDP-GEF-SGP; ENERGIA-International network for gender and sustainable energy, Netherlands; British High Commission; GTZ, International Institute for Applied Systems Analysis (IIASA), Austria; US-Environment Protection Agency etc. IRADe has collaborated with private sector and multinational organizations and NGOs such as SEWA, Petroleum Federation of India, Pricewaterhouse Coopers, ICF International, Rockefeller Foundation, USA; Institute for Social and Environmental Transitions (ISET) USA; Center for Clean Air Policy, USA, Centennial, USA and others.

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**Decision Support Provided To Various Ministries By
Integrated Research And Action For Development (IRADe)**

No.	Name of the Ministry	Projects
1	Delhi State Government	<ul style="list-style-type: none"> • CDM Training Program for Delhi State Government Agencies
2	Ministry of Urban Development	<ul style="list-style-type: none"> • Centre of Excellence for Climate Change and Adaptation-Assessing.
3	Ministry of Environment and Forests (MoEF)	<ul style="list-style-type: none"> • GHG Reduction Potential, Sectoral Baselines and Opportunities for CDM Projects. • India's National Circumstances for Addressing Climate Change, National Communication to the UNFCCC (NATCOM). • National Framework for Risks, Impact and Vulnerability Assessment for Mountain Ecosystems Uttarakhand. • Eco system Management of Marine National Park Gujarat. • Activity Analysis Model for Climate policies for India
4	Ministry of New and Renewable Energy (MNRE)	<ul style="list-style-type: none"> • Village Energy Security Programme (VESP) in Vavdi and Vaddithar, villages in Gujarat. • International Training Programmes on Various Themes of Renewable Energy done for 4 years for senior officers from Africa and Asia on Techno-economic, Financial and Socio Environmental Issues. • Evaluation Surveys of RVE-Remote Village Electrification Programme, Solar PV & Solar Thermal Applications in 6 states. • Techno-economic and Socio-agronomic Analysis of Bio-diesel System.
5	Department of Science and Technology, (Ministry of Science and Technology)	<ul style="list-style-type: none"> • International Workshop on Carbon Capture and Storage (CCS) in Power Sector in India. • Analysis for Carbon Capture and Storage (CCS) Technology in Indian Power Sector.
6	Technology Information, Forecasting and Assessment Council (TIFAC)	<ul style="list-style-type: none"> • Techno-Economic Analysis for Bio-energy Options. • Indian Perspectives on Global Energy Scenarios till 2050

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7	Ministry of External Affairs	<ul style="list-style-type: none"> • Analysis of Alternative Approaches of Climate Negotiations.
8	Central Statistical Office (CSO)	<ul style="list-style-type: none"> • Natural Resource Accounting (NRA) Goa.
9	Ministry of Power	<ul style="list-style-type: none"> • Evaluation of Franchisee system in the selected Districts: Assam, West Bengal, Nagaland and Rajasthan.
10	Rural Electrification Corporation	<ul style="list-style-type: none"> • Evaluation of Franchisee system in II. Additionally Selected Districts: Assam, West Bengal and Rajasthan. • Evaluation of RGVY Programe in 5 states.
11	Planning Commission	<ul style="list-style-type: none"> • Grant-in-aid for conducting a research study on Extension of Minimum Support Price (MSP), Fiscal and Welfare Implications.
12	Government of Manipur	<ul style="list-style-type: none"> • Renewable Facility Development at Raj Bhavan, Manipur
13	Ministry of Chemicals & Fertilizers (Department of fertilizers)	<ul style="list-style-type: none"> • Demand, supply and subsidy Analysis for Indian Fertilizer Sector
14	Ministry of Earth Sciences(MoES)	<ul style="list-style-type: none"> • Vulnerability of coastal cities on Rivers to climate change – case study of Surat.

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**Decision Support Provided To Various Non Government Organizations/Institutions Integrated
Research And Action For Development (IRADe)**

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in 2009-10**

Decision Support Provided To Various Non Government Organizations/Institutions		
No.	Name of the Organization	Projects
1	GIZ- Deutsche Gesellschaft fuer Internationale Zusammenarbeit	<ul style="list-style-type: none"> • Translation of the National Action Plan on Climate Change for the Urban Sector • Renewable Energy Component of the Indo-German Energy Programme • Gender Analysis and Renewable Energy Scenario in India • Indian Renewable Energy Status Report – Background Report for DIREC 2010
2.	Rockefeller Foundation, US/ DFID-Department For International Development	<ul style="list-style-type: none"> • International Workshop on “Sustainable and Climate Resilient Urban Development”. • Climate vulnerability of Cities.
3.	Friedrich Ebert Stiftung (Foundation) (FES)	<ul style="list-style-type: none"> • International conference “A Global Green New Deal? – Towards Green Energy Policies for Sustainable Development”
4.	World Energy Council- Indian Member Committee (WEC-IMC)	<ul style="list-style-type: none"> • A public lecture by Lord Professor Nicholas Stern on “Economics, Ethics and Climate Change”
5.	The World Bank	<ul style="list-style-type: none"> • IRADe-IIEF state of Market Conclave 2005: Second Generation Financial Sector Reforms in India • National Environmental Institutional Assessment
6.	British High Commission / DFID-Department For International Development	<ul style="list-style-type: none"> • Mapping of Carbon Capture and Storage (CCS) activities in India to promote R&D initiatives • The Energy Poverty and Gender Nexus in Himachal Pradesh, India: The Impact of Clean Fuel Access Policy on Women's Empowerment
7.	United States Environmental Protection Agency -(USEPA)	<ul style="list-style-type: none"> • Pre-feasibility study of integrated waste management, landfill gas recovery and utilization at Puducherry, India
8.	CCAP-Centre for Clean Air Policy, USA	<ul style="list-style-type: none"> • Analysis of GHG Emissions for Major Sectors in India: Opportunities and Strategies for Mitigation
9.	ENERGIA, Netherlands	<p>2Color red areas show the States, where IRADe did projects in the past and the boxes shows, where we worked in 2009-10</p> <ul style="list-style-type: none"> • Gender Audit of National Energy Policy in - 8 - India • National Stakeholder Consultation: Gender issues, MDG and Poverty alleviation for CSD 14

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DISSEMINATION OF RESEARCH: FROM MULTI STAKEHOLDER PERSPECTIVES

IRADe has organized various major policy events to reflect multi stakeholders' perspectives, to raise national economic & environment concerns and to discuss policy frameworks for emerging concerns and opportunities in several areas.

Energy Conclave 2006, “Implementing the Integrated Energy Policy- The Way Forward”, 26-28 July 2006, New Delhi

The Energy Conclave 2006 inaugurated by Prime Minister Dr. Manmohan Singh was a mega event of three days participated by more than 300 high level delegates from various sectors such as coal, oil, gas, power, renewable energy, energy efficiency, finance, science and technology, academic, and sustainable development. The report of the Conclave containing recommendations has been published and uploaded on IRADe website.



The Hon'ble Prime Minister Dr. Manmohan Singh giving the inaugural speech at the Energy Conclave, 26 July 2006, New Delhi

Energy Technology Conclave” 13-14 March 2008, at New Delhi

Integrated Research and Action for Development (IRADe), India Energy Forum, and World Energy Council (WEC-IMC) together organized the “Energy Technology Conclave” (ETC) on 13-14 March 2008 at New Delhi. The highlight of the event was the talk delivered by Hon’ble Dr. A. P. J. Abdul Kalam, former President of India. Dr. Kalam encouraged the delegates to think in the direction of energy independence as imbibed in us by illustrious Indian Savants by explaining multiple energy options available to India. The Conclave also witnessed a rich mix of experts from public and private sector and academic organizations sharing the stage on this vital issue of energy technology for growth. The event achieved some important agendas as how to combine policy interventions and Institutional framework to

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facilitate the process of R&D and technology development for sustainable development and identified issues linked with technology transfer, especially in the context of climate change concerns.



Speech by Hon'ble Dr. APJ Abdul Kalam former President of India at Energy Technology Conclave

Energy & Climate Summit, 2009

IRADE, organized “Energy and Climate Summit 2009” in February 3-4, 2009 at New Delhi. Honourable Union Minister of Power Shri Sushil Kumar Shinde presided, while Dr. Montek Singh Ahluwalia, Deputy Chairman, Planning Commission, inaugurated the event. The Summit was attended by many important heads of ministries, the government bodies, industries, private institutions, etc. who made the session discussion relevant.

Apart from the inaugural session the summit was organized in six sessions (1) Climate change and the power sector (2) Sectoral analysis: GHG emission control (3) Climate change and the coal sector (4) Financing and strategic initiatives (5) Renewable energy and energy efficiency and (6) Climate change and the hydrocarbon sector

The valedictory session was chaired by Dr. Kirit Parikh, Member; Planning Commission who summarized the issues, which needed urgent considerations. He argued that LCTs are inevitable not only for India but also for the world. These issues were discussed by the eminent panelists HE Sir Richard Stagg, British High Commissioner, Mr. Suresh Prabhu, Former Minister for Power and Dr. T. Ramasami, Secretary, DST.

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Speech by Mr. Montek Singh Ahluwalia Deputy Chairman, Planning Commission



Speech by Mr. Suresh Prabhu, Former Minister of Power

Bio-diesel Summit 2007, “A Discussion Forum for Biodiesel Stakeholder”, 29-30 January 2007, New Delhi

IRADe took the lead in 2005 to work on biodiesel sector to explore the relevance of biodiesel option for India. IRADe organized two-day summit to discuss bio-diesel policy, energy security, climate change and its linkages among its stakeholders. The summit was attended by nearly 150 delegates from the central and state government ministries, public and private sector companies, research institutes and research and development (R & D) organizations, banks and financial institutes, experts, and academics. The summit brought various stakeholders together to address their concerns, among them there were high level officials from the Ministry of Petroleum and Natural gas, Ministry of Panchayati Raj, Ministry of New and Renewable Energy, Ministry of Rural Development, Planning Commission, Rashtrapati Bhavan and various government departments.



Delegates at the Biodiesel Summit 2007, 29-30 January 2007, New Delhi

IRADe-IEF (Invest India Economic Foundation) “State Market Conclave 2005-Second Generation Financial Sector Reforms Conclave”, 06-08 January 2005, New Delhi

Shri P. Chidambaram, Union Finance Minister, inaugurated the Conclave, which was aimed at examining financial policy reforms needed for facilitating a financial sector, which would support and foster 8 per 2Colored areas show the States, where IRADe did projects in the past and the boxes shows, where we worked in 2009-10

cent growth. The Conclave was a step towards a consultative process for effective design and efficient implementation of economic and financial policies, which will benefit Indian citizens in the years to come. The event brought policy makers, regulators, financiers and leading economists from India and abroad under one roof to examine second generation financial sector reforms for India and the relevant policy imperatives for the Government.



Shri P. Chidambaram, Union Minister, Finance inaugurating the IRADe-IIEF State Market Conclave 2005, 06-08 January 2005, New Delhi

Solar Energy Fair, 23rd Oct, 2009

A Solar Energy Fair was organized at Asiad Village Society on Sunday, the 25th October, 2009 by World Energy Council-Indian Member committee (WEC-IMC) in association with All India Women's Conference (AIWC) and IRADe with support of Asiad Village Society. This was an initiative under the patronage of Ministry of New and Renewable Energy to create awareness of Solar Energy Programme in Urban Areas. WEC-IMC in association with AIWC is organizing such Solar Energy Fairs in Delhi and neighboring areas with support of RWA/Community Centre.



Painting Competition for Children at Solar Energy Fair

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Research Programmes and Projects



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RP 1: ENERGY AND POWER SYSTEMS (EPS)

IRADe has a strong presence in energy policy studies in India. IRADe studies include energy needs of India in the context of global energy scenarios, the current petroleum mix scenario in India. The analytical research include, understanding the changes in trends of production, consumption, imports and exports of petroleum fuels, and their contribution to the overall energy mix in India. The demand for Natural Gas in Indian fertilizer industry in the context of changing fertilizer policy scenario of Indian Government has been explored. The scope of bio-diesel sector as an alternative to high-speed diesel has been investigated with action projects, covering the entire value chain. IRADe is active in studies relating to fuel demand and specific sectors that have impacted the trends in energy consumption and energy transitions needed till 2030 and 2050. Access to modern energy for poor, especially for women is a major concern always reflected in IRADe research as can be seen later in RP 4.

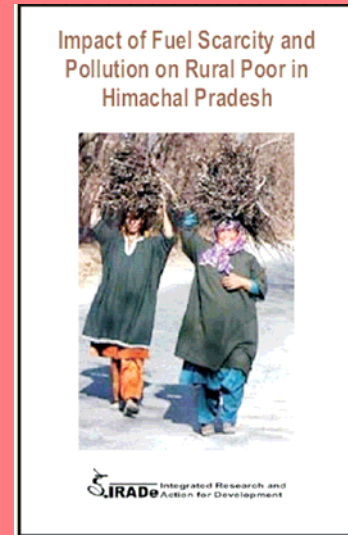
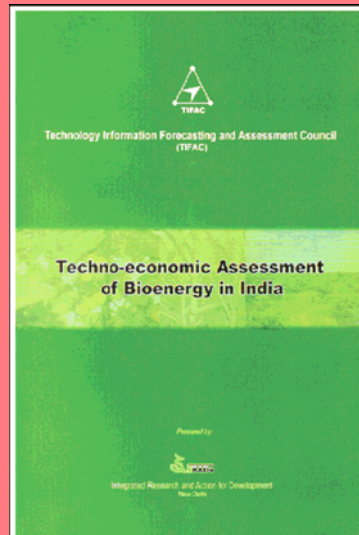
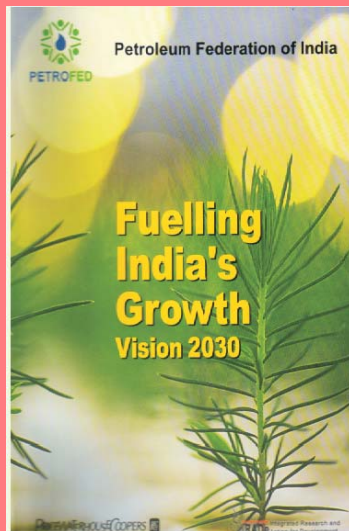
PROJECT NAME	PROJECT DESCRIPTION
<p>Indian Perspectives on Global Energies Scenarios till 2050 In Collaboration with IIASA, Laxenburg, Austria</p>	<p>The project objective is to understand energy transitions needed in the future that is consistent with global perceptions and the required R&D. It would also include studying existing IIASA global regional energy scenarios from India’s perspectives and suggest new scenarios suitable for India that reflect India’s viewpoints. The project will help in providing a future global energy vision for India till 2050. It is expected that India along with China could become global leaders in the use of technologies for the masses. Therefore, IRADe’s work with IIASA will help identifying the energy transitions needed for sustainable development including combating climate change. It will also develop our capacity to help India to present its perspective to improve global energy scenarios that reflect India’s viewpoints. Sponsored by Technology Information, Forecasting and Assessment Council (TIFAC).</p>
<p>Overview and Assessment of Indian Renewable Energy and Rural Electrification Programme in the Context of Rural Development</p>	<p>GIZ (Formerly known as GTZ)), sponsored this inception study on Renewable Energy Component of the Indo-German Energy Programme. The project gives an overview and assessment of the National and State policies to promote renewable energies, rural electrification and relevant issues in rural development. Along with it the relevant institutions and stakeholders of the GOI programmes, were covered that are to guide energy investment in this sector.</p>
<p>Impact of Fuel Scarcity and Pollution on Rural Poor, 2004 Himachal Pradesh</p>	<p>The project was funded by Global Development Network (GDN) through its regional working group (SANEI) South Asian Network, New Delhi. The research project assessed the impact of scarcity of clean fuels and traditional fuels. It assessed in economic terms the impact of pollution from the use of traditional bio-fuels 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. The key results included the household energy consumption pattern, cooking behavior, health profile, analysis of vulnerable groups and toll on human resources, which showed that about 21% of rural adults, might be having some respiratory symptoms.</p>

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PROJECT NAME	PROJECT DESCRIPTION
Analysis of Carbon Capture and Storage(CCS) technology in the of power sector in India	<p>IRADe assessed CCS technology in relation to India's Power Sector. IRADe projected emissions of CO₂ from power plants in future, carried out literature survey to identify developments in carbon capture technology and evaluated each technology for its economical and technical viability. Specification of sequestration sites, identification of the way forward for development, evaluation of monitoring options of CCS, regulatory issues were discussed . The study provides an opportunity for policy makers to engage in debates. The study recommended that the impact of CCS on the cost of power generation should be assessed with various options to define appropriate technology and costs under Indian conditions.</p> <p>Sponsored by the Department of Science and Technology, Government of India</p>
Techno-Economic Assessment for Bio-energy in India	<p>IRADe prepared a research report on bio energy. “”. It reflects on various issues of bio-energy in India.. The study found that among various bio energy options in India, biodiesel, bio ethanol and biomass gasification are found to be most relevant areas, where investments for technology and marketing development could be made. Wastelands could be used for growing oil seed plants for producing biodiesel, irrigated land for sugarcane based ethanol production and small plots in village location be used for producing fuel wood for gasification. Thus their land requirements are complementary, though they do compete with other uses.</p> <p>Sponsored by Technology Information Forecasting and Assessment Council (TIFAC)</p>
Integrated Analysis of Diesel Substitutes from Oil Seeds for India	<p>This study reviewed the entire mechanism, beginning from an overview of the best biodiesel tree plantation practices extraction and processing of oil and finally the end uses of the product. A policy framework for land availability for oil seeds plantation, minimum support price for seeds, subsidies for farmers for raising plantations, tax exemption for entrepreneurs and sale of biodiesel is suggested. Institutional mechanisms for raising nursery and plantation and for carrying out R&D are also required. Financial incentives could be provided to oil companies as they will ensure quality oil and take various types of risks. An action plan to reduce cost of production, increase financial viability and market linkages was also discussed for biodiesel production.</p> <p>Sponsored by Petroleum Federation of India (PetroFed), New Delhi</p>
Evaluation of Rural Electrification Program RGVVY	<p>IRADe evaluates RGVVY in 5 states viz .Asssam, Gujarat, Himachal Pradesh, Rajasthan , Uttar Pradesh to study the implementation of the programme and their socio-economic benefits in terms of education, health, livelihood, etc.</p> <p>Sponsored by Rural Electrification Cooperation.</p>

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ENERGY AND POWER SYSTEMS RELATED PUBLICATION AND WORKSHOPS



22-23 January 2008 at New Delhi. Department for Environment, Food and Rural Affairs (DEFRA), UK, The British High Commission New Delhi

Rural poor: A comparative analysis of vulnerable groups in Himachal Pradesh, India international Centre, New Delhi, March 11th, 2005- Global Development Network (GDN) /South Asian Network, (SANEI) New Delhi

PROJECT RELATED WORKSHOPS

- International Conference on “A Global Green New Deal? – Towards Green Energy Policies for Sustainable Development” September 24-25, 2010. Sponsor: Friedrich Ebert Stiftung (Foundation).

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RP 2: URBAN INFRASTRUCTURE AND SERVICES (UIS)

IRADe is designated as a “**Centre of Excellence in the area of Urban Development on “Climate Change Vulnerability and Adaptation”**” by the Ministry of Urban Development, Government of India. It is active in research work on development of climate resilient urban sector. The project works in urban sector are as follows.

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PROJECT NAME	PROJECT DESCRIPTION
<p>Centre of Excellence in the area of Urban Development on “Climate Change Vulnerability and Adaptation”</p>	<p>(A). Rapid Assessment of Vulnerabilities (RAV) to Climate Change of Indian Cities RAV is done for 14 key cities in India based on various indicators of vulnerability to climate change, to strengthen national policy framework. IRADe’s approach and methodological framework include developing an index to assess the vulnerability to climate change of Indian cities, generating baseline data pertaining to urban development in terms of socio-economic and infrastructure aspects in order to recommend adaptation strategies, which can help in formulating efficient urban policies and programmes.</p> <p>(B). Addressing Climate Resilience for Cities of India: Case Studies of Surat and Haridwar This includes a review of city development plan of two cities, namely Surat and Haridwar. The study analyzes the potential threats of climate change and adaptation options in urban planning. Based on this analysis, some policy actions for resilience and climate change adaptation were suggested, that could be implemented by the local urban/municipal bodies. IRADe also aims to link the work to City Development Plans(CDP) and Jawaharlal Nehru National Urban Renewal Mission(JnNURM) Surat: Surat is an important commercial hub as well as one of the fastest growing cities of India. Surat is a highly flood prone city and also faces threats of sea level rise. Around 30 per cent population lives in slum without adequate infrastructure and public services. The study identified the areas of climate vulnerability and adaptations measures to be included into city development plans, and capacity of local bodies should be enhanced to ensure climate resilience. Haridwar: The city of Haridwar besides being a very important place of pilgrimage is also a major destination for tourism and industries in the state of Uttarakhand. There are considerable number of migrants, tourists and pilgrims and rapid urbanization of the city. Climate change is likely to increase the intensity of the summer monsoon and lead to increased risks of flooding, water logging and landslides. IRADe’s study recommends quantifying the potential climate change impacts and adaptation options at the local level, to engage decision-makers from householders to the government, Urban local bodies (ULBs) and major corporations in and generate awareness of climate change.</p> <p>Sponsored by the Ministry of Urban Development(MoUD)</p>
<p>Okhla Land fill : Waste Management <u>Okhla, New Delhi</u></p>	<p>IRADe studied the gases emitted from the land-fill site of Okhla, New Delhi and analyzed whether the gases can be captured commercially as the land fill site emits methane. The assessment was done based on the information provided by the Officials at Central Pollution Control Board, Delhi Pollution Control Committee, Municipal Corporation of Delhi and Okhla Landfill site and observations made during site visits. Feasibility of the land fill gas (LFG) supply as domestic fuel to the surrounding areas was assessed by using the existing network in Okhla Sewage Treatment Plant.</p> <p>Sponsored by United States Environmental Protection Agency – (USEPA)</p>
<p>Asian Cities Climate Change Resilience Network: (Gorakhpur, Surat and Indore) 2Colored areas show the states, where IRADe did projects in the past and the boxes shows, where we worked in 2009-10</p>	<p>IRADe offers support in developing climate resilience strategies in cities, namely Gorakhpur, Surat and Indore under the project Asian Cities Climate Change Resilience Network (ACCCRN). This report identifies the opportunities to re-orient urban development programmes in order to address convergence points and to facilitate the development of city level climate resilience. The lessons from these are brought to national level and also appraise the city governments concerning opportunities offered by the Central Governments.</p> <p>Sponsored by The Institute for Social and Environmental Transition (ISET) Colorado and Rockefeller Foundation, New York</p>
<p>Preparing Master Plan With Detailed Action</p>	<p>The aim of this assignment is to “Prepare Master Plan” with detailed action plan for various activities for the year 2009-10, 2010-11, 2011-12 during the 11th plan period for development of Jodhpur city as solar cities as per the specifications,</p>

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RP 3: CLIMATE CHANGE AND ENVIRONMENT (CCE)

The local and global environmental issues especially climate changes have loomed large in the recent times. They need complex multidisciplinary approach requiring new techniques of modeling. Computable General Equilibrium (CGE) Modeling for climate change has been carried out in a long term project in a macro-economic input-output framework for the Indian economy. IRADe has worked on climate change and clean development mechanism analyzing greenhouse gas reduction potential in the developed and developing countries. Following Bali COP, projects on policy analysis, sectoral baseline studies on low carbon technology in India for transport, power, cement, steel, hotel industry, cogeneration etc, has been conducted. Full scope of work plan is indicated in the figures 3.1, 3.2 and 3.3 discussed later in this chapter.

CLIMATE MITIGATION	
PROJECT NAME	PROJECT DESCRIPTION
Low Carbon Technologies (LCT) Implementation and Policy Issues:	<p>This study analyzes Low Carbon Technologies in power, steel, cement and transportation sectors. The analysis for cement and steel sectors identified a range of potential mitigation options. A comprehensive roadmap for implementing each policy option was provided including the identification of the key factors that would be involved, the key barriers to policy implementation, and major associated co-benefits. International policies that supplement the suggested domestic policy options have also been described, along with the implications for the structure of international climate policies.</p> <p>Sponsored by Centre for Clean Air Policy (CCAP), USA</p>
Pre-feasibility study of integrated waste management, landfill gas recovery and utilization at Puducherry, India:	<p>An assessment of the potential for a landfill gas (LFG) utilization was carried out for a Puducherry landfill, based on information provided by the Puducherry Pollution Control Committee and Puducherry Municipality and observations made during a site visit. The LFG recovery model of USEPA was applied on present Karuvadikuppam landfill site based on waste disposal, waste composition, and climate data. The model results indicated that the combination of the relatively small amount of waste in place; the dispersed nature of the waste mass; the significant amount of inert material, aerobic degradation, and waste combustion will likely limit future LFG recovery to a maximum of 22.8 cubic meters per hour.</p> <p>Sponsored by United States Environmental Protection Agency (USEPA)</p>

2Colored areas show the States, where IRADe did projects in the past and the boxes shows, where we worked in 2009-10

<p>Mapping of Carbon Capture and Storage (CCS) activities in India to promote R & D initiatives:</p>	<p>IRADe conducted a review of technological status of CCS globally and surveyed perceptions of the stakeholders on CCS technology who were divided into 5 categories based on their area of work and employment in India. The outcome of the project is that India has to continue with basic research on CCS with a larger range of technology options and progress to applied research in selected fields. Indian entrepreneurs should be able to gain business opportunities at a later date when commercialization of CCS technology becomes viable.</p> <p>Sponsored by British High Commission and Government of UK</p>
<p>ENVISION-Information system reforms at the Ministry of Environment and Forests</p>	<p>The key objective of “ENVISION” was to transform the functioning of the Ministry of Environment & Forests and its various constituent organizations under its purview with a business process perspective and also to transform the means of rendering services to its various stakeholders using Information Technology. IRADe was hired as the domain expert in the team of M/s Pricewaterhouse Coppers (PwC). IRADe helped to reduce delay in steps for faster delivery. MoEF has already implemented the recommendations.</p> <p>Sponsored by Pricewaterhouse Coppers (PwC) through MoEF, (GoI)</p>
<p>GHG Reduction Potential, Sectoral Base Lines And Opportunities for Clean Development Mechanism (CDM):</p>	<p>IRADe examined the methodology of “Baselines for Renewable Energy Projects under Clean Development Mechanism” in power sector for India. The study found that India’s power sector has considerable scope for improvements in Transmission & Distribution (T&D) losses. The suggested short-term and long-term measures to reduce these include installation of appropriate conductors, capacitors, reconfiguration of the network up-gradation to high voltage transmission etc. The project also analyzed the emission profile of the European Union and Japan in power sector and hotel industry. It studied their approach to GHG reduction and their policy towards CDM.</p> <p>Sponsored by The Ministry of Environment and Forests (MoEF)</p>

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CLIMATE ADAPTATION CLIMATE NEGOTIATIONS	
PROJECT NAME	PROJECT DESCRIPTION
Methodology for Negotiations for Climate Change perspectives:	The project did developed methodology for emissions, vulnerability effects, affluence and adaptation, and emissions quotas. It also outlines a number of alternative paradigms for a negotiated global climate regime and seeks to provide input on negotiating positions, arguments, policy direction and policy principles. Climate resilience requires sound Urban Design. Supported by Ministry of Urban Development (MOUD) are four approaches proposed in this report: 1. Three-tier approach, differentiating higher and lower emitters among the non-Annex I parties; 2. Sectoral Approach 3. CO ₂ Intensity (of GDP) approach and 4. Focus on Adaptation.
Climate Change and Himalayan Ecosystem- National hand: circumstances for India for NATCOM	Sponsored by The Ministry of External Affairs, (GoI) will be impacted from climate change that could lead to loss of livelihoods of poor in the Himalayan region . A variety of data and methodologies are used in the study, which include vulnerability assessment by assessing indicators, sustainable indicators, and each country reports on national circumstances. The report, participatory Rapid appraisal (PRA) approach, lack of infrastructure, India's stake holders, and macro-economic scenario. The report was sponsored by The Ministry of Environment and Forests, Government of India . of NATCOM institutions and INCCA (Indian Climate Change Association)
Vulnerability of coastal cities on Rivers to climate change – case study of Surat.	Sponsored by The Ministry of Environment & Forests (MoEF) in the context of cities located in the river basins, a multidisciplinary methodologically approach will be developed. That incorporates hydrology, socio-economic issues and urban planning issues. Sponsored by The Ministry of Earth Science, Government of India.

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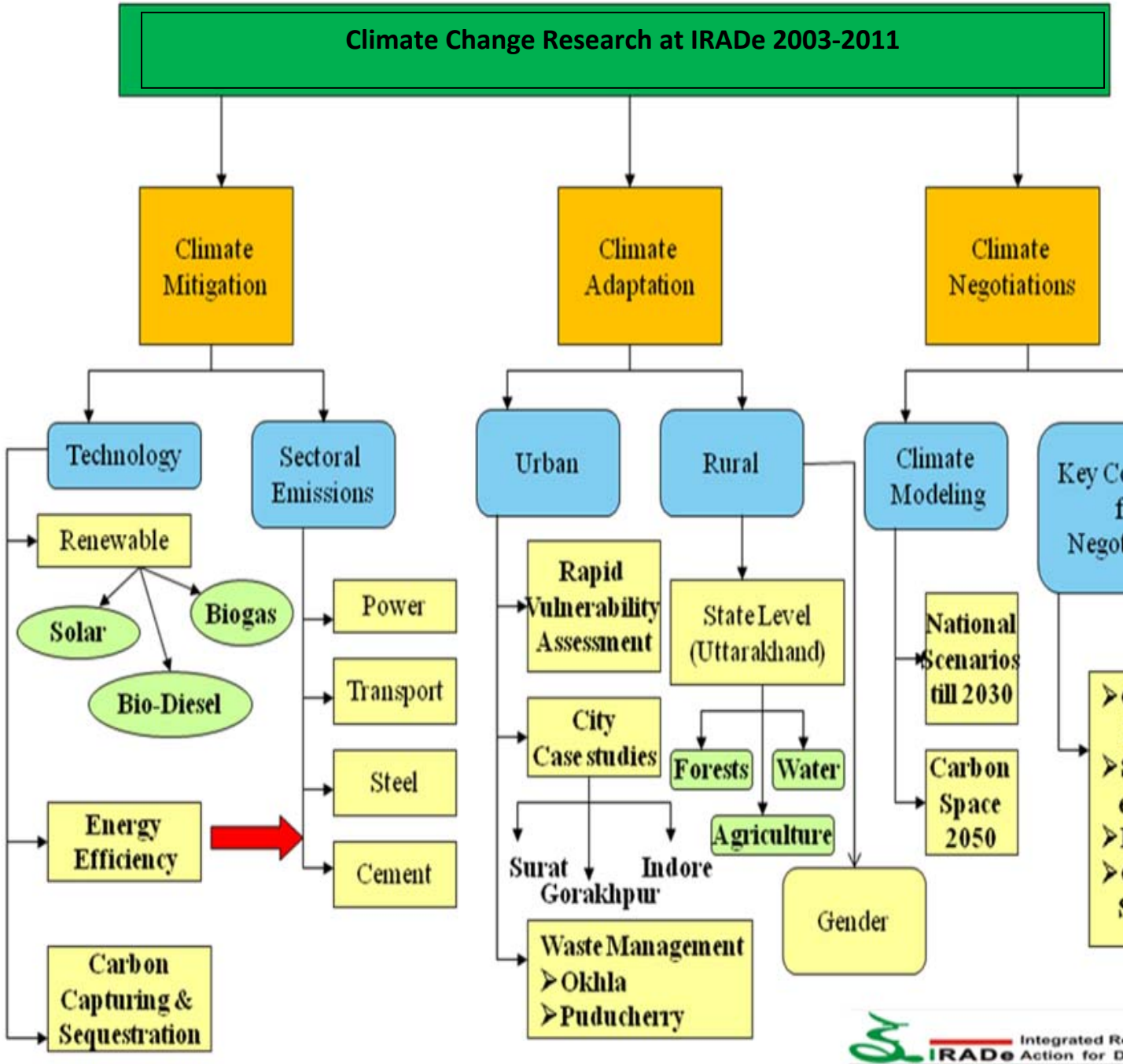
ENVIRONMENT	
PROJECT NAME	PROJECT DESCRIPTION
Ecosystem Management of Marine National Park, Jamnagar, Gujarat:	<p>Rapid industrial development in Jamnagar, had its impact on the Marine National Park. The project studies the overall potential threats, formulates a conservation and management plan that are consistent with stakeholder's plans and suggests an implementation plan through a blend of economic instruments and control measures in order to protect the marine life, unique corals and mangrove ecosystem. Assessment papers are being prepared for various potential impacts from different sources in the park areas on marine ecosystem and critical pollution sources such as industries, ports, shipping activities on the Marine National Park. Simultaneously, the prospect of developing an eco-tourism corridor in the Marine National park and the nearby Khijadia Bird Sanctuary is being investigated.</p> <p>Sponsored by The Ministry of Environment and Forests (MoEF).</p>
Natural Resource Accounting in Goa, Phase II, under SEEA Framework:	<p>IRADe did the Natural Resource Accounting for three sectors namely: 1. The tourism sector 2. Solid waste generation from municipal waste 3. Water pollution by industries. It was done using the United Nation's SEEA framework and physical and monetary accounts for the mentioned sectors were prepared.</p> <p>Sponsored by Central Statistical Organization, under The Ministry of Statistics and Programme Implementation.</p>

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PROJECT RELATED WORKSHOPS

- International Workshop on “Sustainable and Climate Resilient Urban Development” 8-9 September, 2010. **Sponsor: Rockefeller Foundation, US and UK Department for International Development (DfID)**
- Workshop on “Role of Sectoral Approaches in Implementing GHG Mitigation Actions in India”, 27th Oct, 2009. **Sponsor: ICFI, and Center for Clean Air Policy (CCAP), USA**
- Workshop on “Industrial Pollution and Conservation of Marine National Park”, 3rd March 2009, Gandhinagar, Gujarat. **Sponsor: The Ministry of Environment and Forests (MoEF)**
- “Clean Development Mechanism (CDM)”, Training Workshop for Delhi Government Agencies at Delhi on Sachivalaya, on 16th April 2008. **Sponsor: The Government of Delhi**
- Workshop on “Climate Change and Hotel Industry: CDM Opportunities”, 18th June 2005, Goa, India. **Sponsor: The Ministry of Environment and Forests (MoEF), GOI**
- IRADe-UNEP workshop on “Training Sessions on Capacity Building –Environment, Trade and sustainable development” Nov 24, 2004 at India Habitat Centre, New Delhi. **Sponsor: United Nations Environment Programme (UNEP).**
- “Use of Economic Instruments for Environmental Management in Asia,” Training of Trainers Workshop, 27-29 April 2005, New Delhi, India. **Sponsor: United Nations Environment Programme(UNEP)**
- Workshop on “opportunities for Energy Efficiency and Clean Development Management (CDM) in Cement and building materials”, Feb 13, 2004. **Sponsor: Institute for Global Environmental Strategies, Japan(IGES)**

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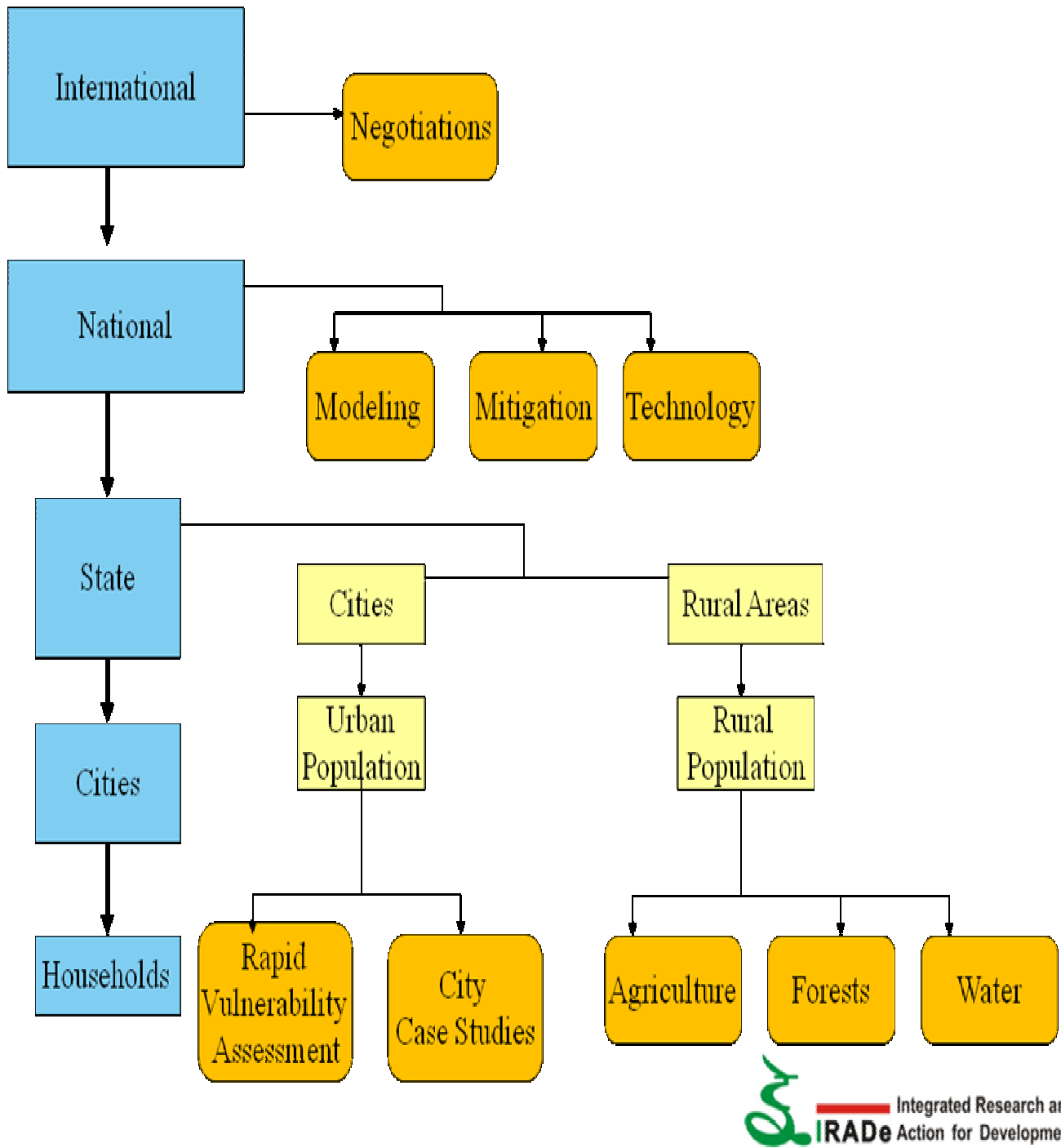


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Figure 3.2

Multi-Stakeholder Research

2Colored areas show the States, where IRADe did projects in the past and the boxes shows, where we worked in 2009-10



RP 4: POVERTY ALLEVIATION AND GENDER (PAG)

In order to enhance capabilities of women and to ensure increased participation of women in decision making, IRADe has focused on poor women, while discussing energy, environment or climate change. In energy sector, IRADe is advocating that more attention should be given to the non-commercial energy sector (fuel-wood) managed by women providing 30% of energy. In the last few years, IRADe was involved in projects relating to mainstreaming gender in energy sector and climate strategies. It is necessary to reduce the hardship drudgery involved in gathering and transporting non commercial energy and the adverse health impact from indoor air pollution. Following are the analytical action projects in this domain:

PROJECT NAME	PROJECT DESCRIPTION
<p>The Energy, Poverty and Gender Nexus in Himachal Pradesh, India: The Impact of Clean Fuel Access Policy on Women's Empowerment</p>	<p>This study focused on poverty, gender and environment and health issues in Himachal Pradesh and involved a gender specific survey to address this issue. The study found women walk approximately 30 Kms in a month to collect fuel-wood. Primary survey estimated accessibility and use of clean fuel by households for 30 villages in two districts and a survey on the kerosene depots was also conducted to get the seller's perspective of supply situation under Public Distribution System(PDS). It was found that the people in HP are willing to pay for Kerosene, the next fuel on the energy ladder above biofuels, but due to increased availability of LPG, the demand for kerosene has been on the decline. The profit margins in selling kerosene under PDS are fairly low as a result most sellers have other businesses, commonly ration shops and view this as a supplementary business. Sponsored by DFID/KAR through ENERGIA of ETC Foundation</p>
<p>Gender Audit of National Energy Policies in India</p>	<p>This is a collaborative exercise to draw attention to the lack of gender concerns in National Energy Policies in India. The study was done by IRADe in collaboration with ENERGIA. The Gender audit exercise was carried out to define an approach in making national energy policies more gender responsive in terms of its content and process. The key recommendations consisted of (a) Reorienting Monitoring and Evaluation Mechanisms to Reflect Gender concerns in Energy programmes, (b) Linking women's empowerment with energy development, (c) Inter-Ministerial Coordination in addressing Energy Security and (d) Operationalizing the Goal of "Making Cooking Fuels Available within 1 Km. of Habitations".</p>

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<p>“Mainstreaming Gender in Energy Policy” 2006 – Background paper and presentation prepared for Expert Committee to formulate Energy Policy, Planning Commission, (GoI)</p>	<p>The Project highlighted the gender based outcomes that included capacity building and special training to women in various institutions/Universities for making a cadre of energy professionals. Policy needs to go beyond cooking energy, and emphasis should be in providing energy for other needs for livelihood and security. Research should be pursued for development of various bio-fuels, species, cultivation practices, and appliances (stoves). Health issues included to identify and correct respiratory diseases from indoor air pollution, to reduce the daily drudgery of women so that they can spend more time on generating income. A more participatory approach to energy policy decisions will allow both men and women to be engaged in defining energy problems and in implementing appropriate solutions.</p>
<p>Gender & Climate Change</p>	<p>Several initiatives were funded by UNDP</p> <ul style="list-style-type: none"> • One of the first side events on Gender and Climate change was organized at COP 8; 2002, New Delhi. For this purpose, an issue paper was prepared, which is referred often. • Later in 2008, an issue paper was written on Mainstreaming Gender in Climate Change: Policies, Programs paper was prepared which is circulated widely. • 3 day Training Program was facilitated by IRADe for Asia-Pacific office of UNDP on mainstreaming gender in Climate Change at Sri Lanka.

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PROJECT RELATED WORKSHOPS

- **National Stakeholder Consultation on Gender Issues, MDGs and Poverty Alleviation for CSD 14th, 16th March 2006**

Introduction: A half- day consultation was organized by IRADe in collaboration with the All India Women's Conference funded by ENERGIA - the International Network on Gender and Sustainable Energy. Key issues were energy, millennium development Goals, poverty alleviation, and implementation of official National Energy policies. The participants supported recommendations drafted by IRADe in the National Paper and gave additional suggestions that poverty alleviation is about increasing people's productivity, for which all issues of health, education, electricity and fuel need to be addressed.

- **The Third ENERGIA National Focal Points(NFP) Meeting, 1-3 November 2006 at New Delhi**

ENERGIA Asia Network in collaboration with IRADe organized the third ENERGIA National Focal Points Meeting. IRADe is active in advocating more attention to the non-commercial energy sector (fuel-wood) managed by women, which is the second largest energy source after coal. IRADe advocated bringing energy within one Km of rural habitants, and organized and participated in events related to United Nations Commission in Sustainable Development CSD (14 and 15). The group engaged in discussing and developing a set of monitoring criteria and National plans for each NFP.

- **Reducing Drudgery of Women Carrying Biofuels, 2007-08: E-Discussion and Field surveys**

IRADe is the National Focal Point (NFP) of ENERGIA-International network for Gender and Sustainable Energy. As a part of network activities, IRADe ran an e-debate with professionals from gender, energy and poverty on a common platform on certain identified issues to share best practices and develop ideas for gender-energy-poverty related research activities. The second level of the exercise was field survey of the suggestions received from focused group exercise, done in one village each in North India (Rajasthan) and South India (Karnataka) respectively by partners Social Policy Research Institute, Jaipur in North India and TIDE, Bangalore in Karnataka. The results of the survey brought to forefront the difference in opinions and willingness to adopt new ideas in two different geographical locations of India.

RP 5: AGRICULTURE AND FOOD SECURITY (AFS)

IRADe has worked on various projects related to the field of Agriculture and Food security. Therefore, recently Agriculture and Food Security is introduced as a new thematic area of research.

PROJECT NAME	PROJECT DESCRIPTION
Indian Agriculture 2040:	<p>Rapidly growing Indian economy will call for a transformation of Indian agriculture over the next 30 years that will have profound implications for diversification for rural urban migration, for agricultural profitability and food security. Challenges to government policies would be daunting and most likely will require a fundamental reorientation. IRADe is involved in this study and has developed a general equilibrium model to explore the issues.</p> <p>Sponsored by Centennial Group, USA</p>
Demand of Natural Gas in the Indian Fertilizer Sector study 2007-08	<p>This study entails estimation of demand for Natural Gas in the Indian Fertilizer Industry. The objective of the study is to understand the policy options of the Central Government in the face of changing fertilizer future demand and supply scenario of Natural Gas at the global level with particular emphasis on India.</p> <p>Sponsored by Stanford University, USA under Programme on Energy and Sustainable Development (PESD) Programme and China</p>
Demand, supply and subsidy analysis for Indian Fertilizer Sector	<p>IRADe carried out this study to analyze the fertilizer demand, to assess the impact of various feedstock prices, to estimate the total subsidy for the fertilizer sector, to suggest range of policy alternatives, to recommend viable policy and reform options for policy-makers for India and to carry out a comparative study of domestic policy and global fertilizers policies.</p> <p>Sponsored by The Department of Chemicals & Fertilizers, (GoI)</p>
Extension of Minimum Support Price (MSP): Fiscal and Welfare Implications 2007-08	<p>The Planning Commission, Government of India awarded IRADe the research project to study the implications of extending the Minimum Support Price (MSP) to more states. After the analysis of implication on the welfare of producers and consumers in Madhya Pradesh and Uttar Pradesh, it was recommended that MSP could be extended in many states, because, more states are growing rice and wheat than earlier. There are national gains in reduction in transport of grains and more equitable benefit of government policies.</p> <p>Sponsored by The Planning Commission, (GoI)</p>

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PROJECT RELATED WORKSHOPS

- **Workshop on Energy Policy Reforms and Agriculture in India: A general Equilibrium Exploration, 20 April 2004, New Delhi**

Introduction: IRADe organized a workshop on April 20, 2004 at India International Center, New Delhi for launching the Stanford-IRADe project to receive suggestions at the inception stage. The overall objective of the workshop was to discuss the various features in order to upgrade the general equilibrium model.

The experts and representatives of World Bank, Stanford University, ICAR, NIPFP, NCAER, IGIDR, Planning Commission, Ministry of Power, IARI, DFID India, USAID, Ministry of Environment & Forests, Reliance Industries Limited, Indian Statistical Institute (ISI) and University of Delhi attended the workshop. Dr. P. Ghosh, Secretary, The Ministry of Environment & Forests, (GoI), who earlier did computable general equilibrium model, inaugurated the workshop. Professor David Victor of Stanford University gave a keynote address after which, Professor Kirit Parikh gave a substantive presentation concerning the objectives, methodology, possible outputs and policy implications.

The workshop recommended addressing questions directly related to decision making for land tillers and land owners and poor and small farms such as disaggregation of farmers and some scenario related to WTO.

Sponsored by Stanford University, California, USA

- **Workshop on Food Security: Present and Futures, 16th September 2008, New Delhi**

Introduction: IRADe celebrated its 6th Foundation day with a panel discussion, organized on “Food Security: Present and Future” at India International Center on 16th September 2008.

The workshop was attended by renowned academicians and NGOs. Dr. Kirit Parikh chaired the panel, and Dr. Abhijit Sen, Member Planning Commission was the chief guest of the event. The eminent panelists were Dr. S. Mahendra Dev, Chairman of CACP, Dr. Ashok Gulati of IFPRI and Dr. Suman Bery, Director General, NCAER.

The domestic self-sufficiency ratio for food-security needs to be optimized. Climate Change and food security issues should be dealt together. To enhance food security, we need to focus on yield growth in agriculture, a national development strategy for handling the issues of excess labor in agriculture sector, nutrition management of arable land in India, institutional approach for collective action and rational use of irrigation water.



Workshop on Energy Policy Reforms and Agriculture in India: A general Equilibrium Exploration on 20th April 2004 at New Delhi



Workshop on Food Security: Present and Futures on 16th September, 2008 at IIC, New Delhi

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Other Related Activities:

ACTION RESEARCH, TRAINING, MONITORING & EVALUATION (ARTME)

Policy Reforms are underway in many sectors. These have generated path-breaking programmes, schemes such as RGGVY, MNRE schemes on solar cities or village energy security programs. They have potential to increase economic efficiency in rural areas. Some of them may need to be more effective. To appreciate ground realities facing the schemes, programmes and policies, IRADe has surveyed and examined impact of energy sector reforms on poor and rural sectors. Each study has analyzed and has generated suggestions and recommendations to enhance the effectiveness of the government programmes. The MNRE, UNEP and UNDP have utilized services of IRADe in conducting International training programs on renewable energy and gender issues.

PROJECT NAME	PROJECT DESCRIPTION
Evaluation of Franchisees System in the states of Assam, West Bengal, Nagaland and Rajasthan	<p>The Ministry of power had awarded a study to IRADe to access franchisee system in Assam, Nagaland and West Bengal. REC awarded further studies to IRADe for evaluating the franchisee systems operating in different district distribution circles in states of Assam, West Bengal, Nagaland and Rajasthan through sample villages in these states. MoP project covered villages in Bankura district, Dibrugarh district, Nagaland & REC project survey included villages in Purulia, Jodhpur and New Bongaingaon districts. Conclusions were drawn from the studies that franchisee requires adequate supply of power of good quality maintained by utilities to work effectively; capacity building of franchisee should be done in the beginning. A part of 90% subsidy provided under RGGVY projects should be given by the govt. to the rural population.</p> <p>Sponsored by The Ministry of Power, (GoI)</p>
Analysis of Bio-diesel Programs from Socio-Economic and Agronomic Perspectives: Case Study on Rajasthan and Orissa.	<p>This study attempted to identify and fill critical knowledge gaps, which currently inhibit effective policy on Bio-diesel in India to delineate the key challenges in the Jatropha cultivation in consonance to find ways to scale up the outreach of services to the poor and vulnerable. The study analyzes various socio economic parameters, agro climatic conditions and other multi stakeholders consisting of oilseeds cultivators, with regard to Jatropha. The project identifies the primary barriers of Jatropha plantation for socio-economic feasibility of a multi-stakeholder system with a focus on rural population. Biofuel promotion is a very complex issue dependent on knowledge, infrastructure support, policy issues, political environment, inter-sectoral cooperation and linkages for the cooperation and technology promotion and transfer. Feedstock supply and management chain emerge as a most important issue for the promotion of Bio-diesel from Jatropha, considering site-specific climatic, agronomic, economic, and social conditions.</p> <p>Sponsored by The Ministry of New and Renewable Energy, (GoI)</p>

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PROJECT NAME	PROJECT DESCRIPTION
Evaluation of Solar Thermal Demonstration Project in 4 states of India	<p>The project was awarded by MNRE. The MNRE had provided the villages' residents in four states namely Rajasthan, Haryana, Uttarakhand and Gujarat, with solar cookers and solar water heaters. Overall the users of solar thermal products were satisfied. 90% of users felt that food cooked with solar cookers tasted better and good for the health. They were happy that solar cooker did not require fuel, and needed little maintenance. They were aware that solar system had long operational life, can be used during day, but also depends on the seasons.</p> <p>Sponsored by The Ministry of New and Renewable Energy, (GoI)</p>
Survey and evaluation project of remote village area electrification through solar photo-voltaic system in the state of Rajasthan and Haryana	<p>The project was awarded by MNRE. The MNRE had provided the residents of remote villages of India, which could not be covered by national power grid, with solar home lighting systems and solar street light systems. It was observed that target oriented approach was followed during implementation. During implementation by parties, MNRE guidelines were not adhered to in totality by implementing agencies. Approximately 15% of the systems were found to be non functional. Maintenance and service support from equipment suppliers desired improvements.</p> <p>Sponsored by The Ministry of New and Renewable Energy, (GoI)</p>
Evaluation of Solar Photovoltaic Program in 6 states of India	<p>The project was awarded by MNRE. The MNRE had provided the villages' residents in six states namely Rajasthan, Haryana, Uttarakhand, Gujarat, Manipur & Karnataka, with solar home lighting systems, solar water pumps, solar lanterns and solar street light systems. The Study was structured on field visit based verification and collection of beneficiary level information; on functioning and maintenance of systems, and satisfaction level of beneficiaries. The life-style of beneficiaries has changed gradually following work done under the scheme. The benefits accrued were, working hours for useful tasks have increased, study hours of children increased, consumption of kerosene declined, environmental accidents such as snake and insect bites declined. Beneficiaries have started using mobile phones, radios, telephones etc.</p> <p>Sponsored by The Ministry of New and Renewable Energy, (GoI)</p>

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International Training Programmes, 2004, 2005, 2006 and 2007

IRADe organized International Training Programmes (ITP) for 4 years, every year since 2004 on Renewable Energy Technology (RET) for participants from **Asia and Africa**. So far, four ITPs have been organized on various topics under Renewable Energy Technology (RET). **They were as follows:**

- Renewable Energy in Local, national and Global Context with Socio-economic Perspectives”, March 2004
- “Renewable Energy: Techno- economic, Finance and Socio- Environment Issues”, 7-17 December 2004
- “Alternative Fuel: Energy Security, Techno economic and Environmental issues” 23-30 March 2006
- “Role of Renewable Energy in Energy planning and expanding Livelihood Options”, 14-22 March 2007.

Participation:

Participants were middle or senior level officers (Director, Executive Director, Advisor, Assistant Professor, Assistant lecturer, Lecturer, Manager, Program Officer, Engineer, etc.) from Ministries, non-government organization and from different universities of Asia and Africa. Countries participated were as follows;

Asia: Nepal, Bangladesh, Pakistan, Iran, Sri Lanka, Vietnam, Cambodia, Thailand, Indonesia, China

Africa: Nigeria, Tanzania, Cameroon, Sudan, Malawi, Algeria, Uganda, Camaroon

Sponsor: *The Ministry of New and Renewable Energy (MNRE), GOI*



Prof. Jyoti Parikh, Executive Director, Mr. V Subramanian, Secretary MNES with the participants of 3rd International Training Programme.



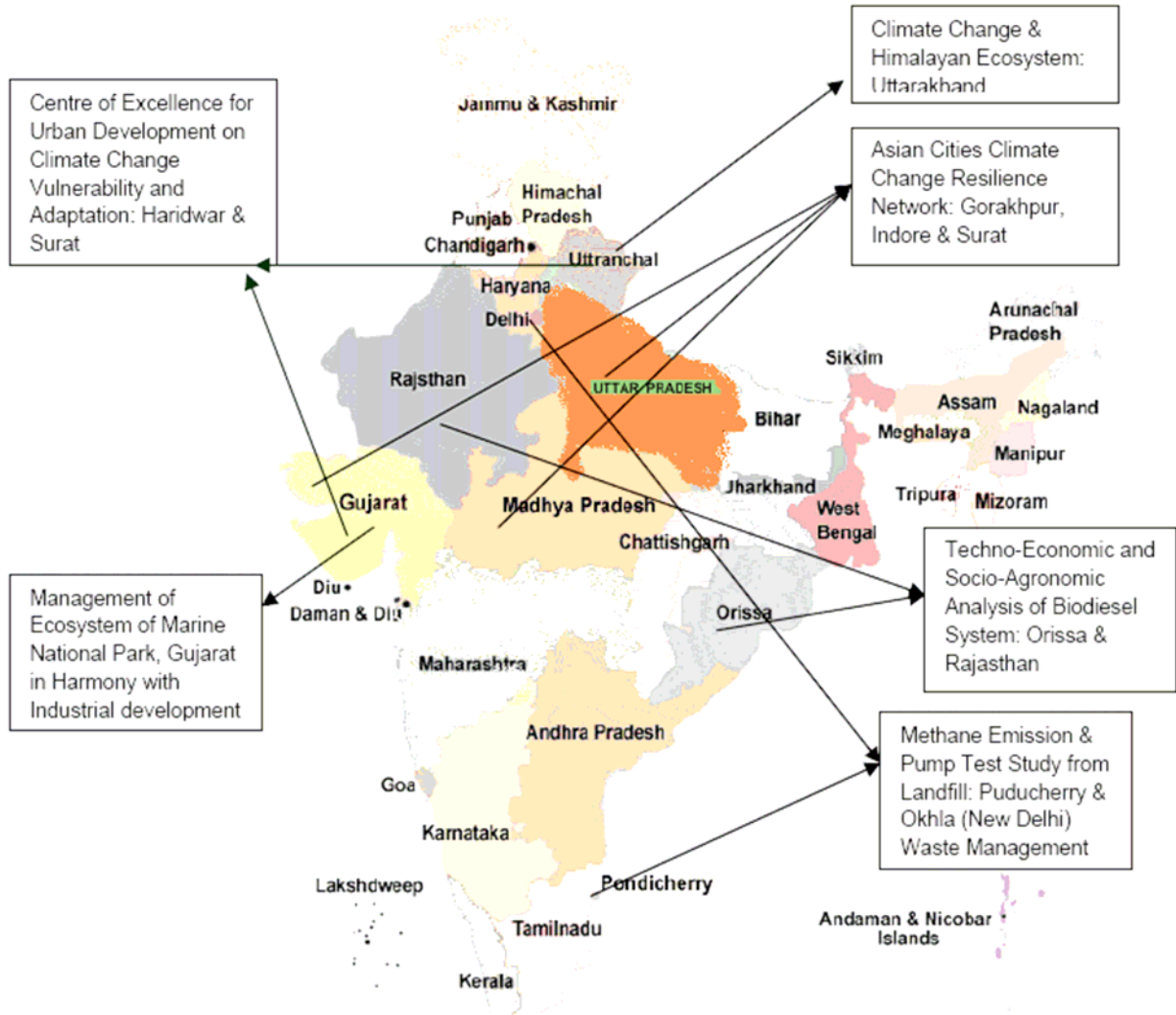
Participants of 2nd International Training Programme on Renewable Energy from Asia and Africa and IRADe staff



IRADe-UNEP Workshop on “Training Session on Capacity Building- Environment, Trade and Sustainable Development” 24 Nov 2004, at New Delhi

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Map of India with Sites of IRADe Projects²



- Centre Of Excellence For Urban Development On ‘Climate Change Vulnerability And Adaptation’
- Asian Cities Climate Change Resilience Network
- Indian Perspectives On Global Energies Scenarios Till 2050
- Management Of Ecosystem Of Marine National Park, Gujarat In Harmony With Industrial

²Colored areas show the States, where IRADe did projects in the past and the boxes shows, where we worked in 2009-10

- **Development**
- **Climate Change And Himalayan Ecosystem**
- **Developing CGE Model With Activity Analysis For Climate Policies For India**
- **Renewable Energy Component Of The Indo-German Energy Programme**
- **Analytical Approaches For Climate Negotiations**
- **Methane Emission And Pump Test Study From Landfill- Puducherry And Okhla, New Delhi Waste Management**
- **Techno-Economic And Socio-Agronomic Analysis Of Biodiesel System**

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