





# ANNUAL REPORT

## 2010-2011

### INTEGRATED RESEARCH AND ACTION FOR DEVELOPMENT (IRADe)

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## FOREWORD



It gives me great pleasure to bring out this Annual Report 2010-11. In this year, IRADe has consolidated its position and made two quantum jumps, spilling over 2011-12:

- We have moved to a new building of our own with more facilities and better ambiance. Where we actually moved in 2011-12.
- We made a bigger jump in getting new projects that started in 2011-12.

However, 2010-11 also presented an opportunity to wrap up several projects viz; Conservation of Marine National Park in West Gujarat, Ministry of Urban Development and food security project were completed or in their last phases.

We held 3 international workshops, one international lecture and one national/state level workshop this year.

We now hope to receive our well wishers at our new office.

**Prof. Jyoti Parikh**  
Executive Director

## 1. CLIMATE CHANGE AND ENVIRONMENT

The Gulf of Kutch is co-existence of economic and ecological hotspots: the hub of economic growth and technical progress and Jamnagar district is one of the busiest among them. It is also a biodiversity hotspot that includes healthy mangroves, Marine National Park, and Khijadia Bird Sanctuary. This was the country's first national marine park, situated also in the Jamnagar district of Gujarat. MNP is spread over an area of nearly 458 sq km in the Gulf of Kachchh, was declared a marine national park under the provisions of the Wildlife (protection) Act, 1972 of India. The objective of the study was to suggest suitable action plans involving all the stakeholders which shall together ensure conservation of the ecosystems along with industrialization.

The project studies the growth of the industrial sector in Gujarat, with specific focus on Jamnagar. Growth has been evaluated on the basis of a number of parameters like investment, employment, MOU's signed, proposed investment. The collected data showed that investment on MSME during 2006-07 was Rs 48473 billion. The proposed investment in the Vibrant Gujarat Summit of 2009 was Rs 12215 billion. Along with this Gujarat has also witnessed the commissioning of two major special economic zones (SEZs), viz., the Reliance SEZ and the Essar SEZ involving a capital investment of Rs. 94 billion.

As per the valuation exercises done by various sources, the coral reefs provide an annual benefit of Rs 2200 million. The maximum value is for fisheries followed by benefits of coastal protection and biodiversity benefit. Another study shows direct use value and the indirect use value of mangroves, the total use value of mangroves is about Rs. 77 billion per year for the state (at 2003 prices). The state can earn this amount as use value of mangroves by restoring mangroves in the state.

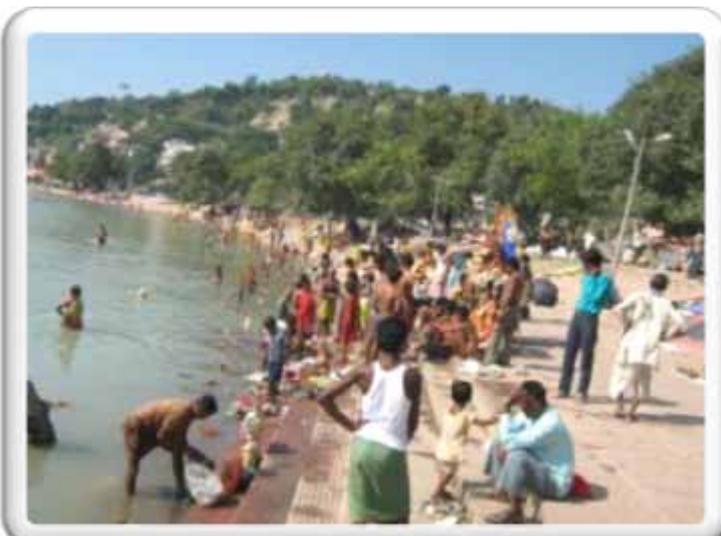
Pollution of marine ecosystems is caused due to discharge of waste into the sea resulting in harm to living resources, hazards to human health, hindrance to fishery & impairment of quality for use of seawater. Mangroves are being destroyed by the oil spills, toxic waste along the Gulf, which became intensified with the establishment of oil refineries closer to the MNP/MS. Nearly 50 % of India's crude oil imports (100 million tonnes during April-November 2009) are unloaded in the fragile ecology of the coastal belt. Tourism beyond the carrying capacity causes damage to the ecology.

IRADe organized three well participated workshops involving the stakeholders to discuss suitable measures for the conservation of the MNP. The key elements of the consolidated recommendations are given below. They helped to arrive at:

- The Forest department should do an ecological profile of the entire MNP. Baseline data of socioeconomic activities and land use needs to be collected, collated and maintained regularly thereafter. There should be constitution of a Separate Authority for the GoK under the Environment (Protection) Act, 1986. Buffer zone based on identifiable rational regime, biological parameters is requires. Vehicle Traffic Management Systems should be effectively operationalised in the Gulf area. Forest department should initiate effective participation of local communities in management and conservation activities. Capacity building and awareness of the staff of Forests, Fisheries and Tourism Departments is needed, to have technical and administrative knowledge especially in using various economic instruments, community based approaches, (sensitivity) to deploy people based solutions and environmental valuation approaches. Livelihood, especially of fisheries needs to be sustained. Overall control should be exercised by the Forests and Environment Department to monitor implementation and exercise vigilance
- The Jamnagar Municipal Corporation can sell their waste water to the industries in the city for various purposes like constructions etc and as there are other industries willing to

buy the water and the problem of disposal can be minimized.

- The Gujarat Pollution Control Board should monitor regularly critical pollutants to keep a check on all industries, port and shipping departments. Standard setting should depend on carrying capacities which should get more stringent with more incoming industries to reduce total pollution loads. Comprehensive pollution profiling that maps simultaneously ecosystems, ports & shipping, industries, socio-economic and demographic data is needed.



- The port & shipping authorities and the Coast Guard should have alert systems and contingency plans in place. Ways to share costs by the polluters needs to be devised. Risk sharing is necessary. Ballast water management needs to be enforced at all ports and shipping vessels. Need to establish permanent monitoring stations within the MNP to continuously monitor to changes in sea traffic. Adherence to Marpol International regulations must be made stringent for all the shipping and port activities
- In the tourism sector, there is need to conduct EIA by independent agencies to capture the positive and negative impacts of tourism. Tourists should be discouraged from walking on the corals and prevented from lifting corals to view them. Since making alternative pathways for tourists is a costly alternative, glass bottom boats and board walk, where feasible and economic can be considered. Carrying capacity of tourists for Khijadia bird sanctuary, mangroves and islands need to be assessed on the basis of maximum tourists per day.
- There is need to create a state of the art marine research institute. Expensive equipment, scuba gears, boats and monitoring labs and the staff proficient to make use of them is needed. R&D and the usage of new and updated technology should be given a priority. Effective deployment of new and advanced technologies, such as GIS, remote sensing, modeling, using satellite pictures would be highly beneficial. It would be used to monitor the periodic changes in the mangrove and coral reef patterns of MNP. Greater interdepartmental co-ordination between the various departments involved in the management of marine and coastal ecosystems is called for, also to ensure coherence among various regulations in place, reducing their complexity and enhancing possibilities of compliance.

## 1.2 Translation of the National Action Plan on Climate Change for the Urban Sector

In order to tackle the challenges of climate change the Government of India (GOI) launched the National Action Plan on Climate Change (NAPCC) in 2008. In its eight missions it proposes a broad spectrum of activities and interventions in various fields. At the moment the GOI is considering modes of implementation of the NAPCC by various sectors. One of these missions is the “National Mission on Sustainable Habitat”, which is geared to the urban environment. Other missions also will have to be implemented in the urban context (water, solar, energy etc.).

As the NAPCC is a GOI policy, implementation in the urban sector will have to be an integral part of governance activities of Urban Local Bodies (ULBs). An internationally accepted tool for systematic integration of climate issues on city level is “Climate Change Action Plans”. On the local level climate change related activities have to be linked to the implementation of other Central and State Government schemes (e.g. Jawaharlal Nehru National Urban Renewal Mission, Rajiv Awas Yojana) as well as to general governance and funding pattern.



On behalf of the Deutsche Gesellschaft fuer Internationale Zusammenarbeit (GIZ), IRADe prepared an inception study how the NAPCC could be implemented through City Climate Change Action Plans in the urban sector. The first two chapters of the study “Translation of the National Action Plan on Climate Change for the urban sector” cover a short analysis of the eight missions of the NAPCC and their relevance for local Climate Change Action Plans.

This analysis shows that the missions have overlapping functions which strengthen the implementation at city level and ensure co-operation of other ministries. For example the prime focus of the “National Mission on Sustainable Habitat” is urban development, however the action plans envisaged under seven missions, will also enhance sustainable water supply and green area development, energy efficiency, solar energy and so on. The figure depicts pictorial the linkages of the seven missions with the “National Mission on Sustainable Habitat”. (Figure 1)



It was pointed out that the main challenges in accomplishing the different tasks of the eight missions on the city level are knowledge gaps, issues related to enforcement and implementation and the cost of green technology and its development.

It was indicated that the capacity of the state-level and city-level bodies should be strengthened. The responsibilities of the different stakeholders, which are involved in the implementation, should be clearly specified and mechanisms for coordinating them should be improved. Furthermore innovative financial instruments as well as implementation and monitoring plans including guidelines for result oriented goals are needed.

## 2. IRADe: CENTRE OF EXCELLENCE

### Centre of Excellence for Urban Development on ‘Climate Change Vulnerability and Adaptation’

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IRADe is a Centre of Excellence (CoE) on Urban development and Climate Change, and carries out projects in the areas of Urban Environment and Development and Climate Change.

Ministry of Urban Development (MoUD) has identified few other reputed institutes from all over India, besides IRADe, to undertake research and other activities in the areas related to urban development. (<http://urbanindia.nic.in/what'snew/Workshop/JSUD.pdf>)

IRADe is broadly working on three focus areas: Research, Knowledge Dissemination and Capacity Building.

- **Research**

IRADe research programmes include policy analysis and case studies and dissemination. IRADe is actively involved in doing policy research on Climate change and urban development. It also helps MoUD with activities related to National mission for Sustainable Habitat (NMSH). The staff participates in the meetings of subcommittees on storm water drainage for developing benchmarks for preparedness for disasters.

IRADe has worked on following important topics as part of CoE:

- **Methodology development**

A generic framework for climate change and vulnerability was developed in 2009, where some cities may find some sectors more important than others. It is important to carry out several case studies of various typology e.g. metropolitan, medium classes I & class II cities or coastal cities, drought-prone cities in arid zones and flood-prone cities in the river basins. This will give perspectives on how the process can be streamlined and replicated faster each time than the previous exercise. Moreover, data may not be available regarding all the sectors and they may have to be selective. Some default database, norms and rules of thumb can emerge once several case studies get completed.

- **Rapid Assessment of 14 cities**

This research study has reviewed the literature available on climate change and urbanization, assessment of vulnerabilities of cities to formulate an index for assessing the vulnerability. Analysis and findings of the research study are based on the interpretations of a set of variables that consist of climate, topography, temperature, rainfall, demographic & socio economic facets, urban design & infrastructure, transport, energy use and governance of 14 selected cities of India. To assess the vulnerability of these selected cities IRADe has developed its methodological framework that includes baseline data pertaining to urban development socio-economic aspects and infrastructure

### **Vulnerability Assessment of Surat and Haridwar**

Vulnerability assessment and Climate change adaptation project is done for Surat and Haridwar. Both the cities are different in terms of approach followed for research on vulnerabilities.

**Surat**, a coastal city with river dividing it into two parts is highly vulnerable to floods and climate change impacts such as increased precipitation and temperature. The IRADe team visited Surat and discussed the experiences and suggestions of various stakeholders from Southern Gujarat Chamber of Commerce and Industries, and various departments of Surat Municipal Corporation, Fire and rescue department etc. and tried to assess the vulnerability and suggest adaptive measures.

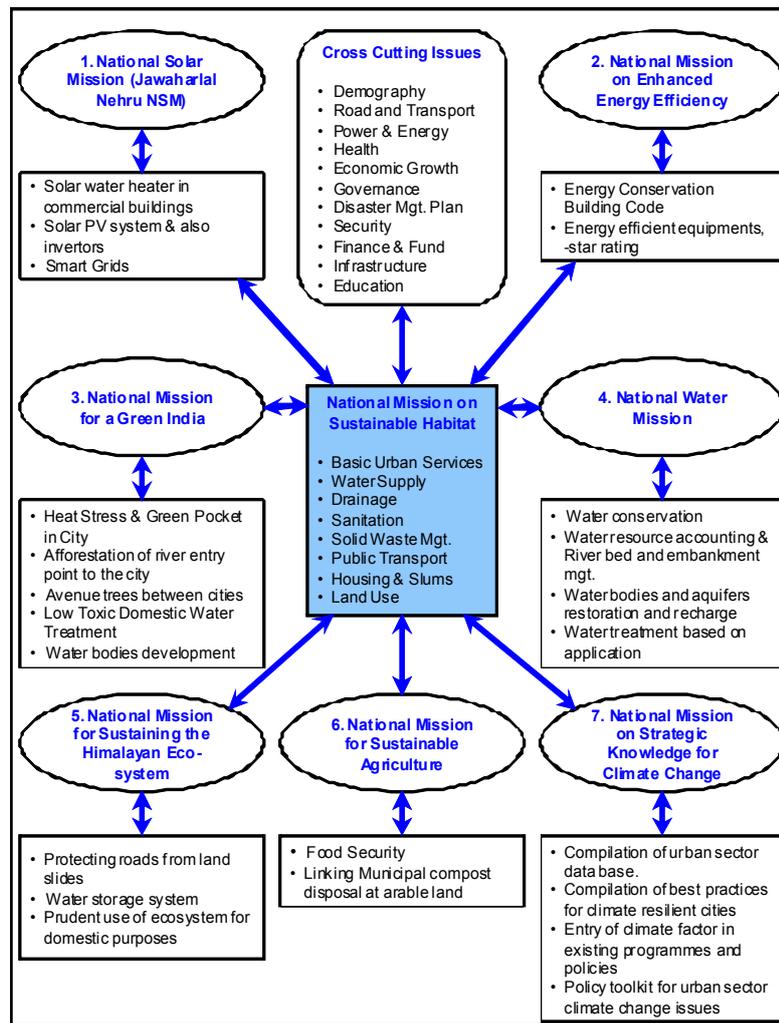
**Haridwar** is situated in the Himalayan zone, hence vulnerable to both natural as well as manmade disasters. Landslides and floods are common. The city caters to large no. of floating population which is larger than the population of inhabitants visiting for religious tourism and business reasons. They create pressure on city infrastructure.. Thus, it is not a surprise that environmental problems have emerged in the Himalayan region, including the Haridwar

city. The required data and basic information about the city of Haridwar have been collected from the city development plan revised under Jawaharlal Nehru National Urban Renewal Mission (JNNURM), 2007. A field survey was also conducted to assess the development programmes, major disaster prone areas and ground realities of vulnerable areas i.e. slums.

### Asian Cities Climate Change Resilience Network (ACCCRN)

The Asian Cities Climate Change Resilience Network aims to draw attention to invite funding, and action on building climate change resilience for poor and vulnerable people by creating robust models and methodologies to address risk through active engagement and analysis of various cities. IRADe is a part of the network that consists of well known institutions such as TERI, TARU etc.

IRADe is part of the network along with TARU and IRADe’s job is to do policy analysis.



A policy paper is prepared on ‘mainstreaming climate change resilience in urban policy framework: Linkages with policies, programs and missions’ to mainstream climate concerns at national level

The paper deals with National Urban Sanitation Policy, National Urban Transport Policy and Disaster Management policies with its adaptation and mainstreaming measures. One of the prominent examples, where the city has accepted to live with floods and similar initiatives have also been done in Gorakhpur and Indore cities by ACCCRN.

The vulnerability assessment and resilience planning approach evolved in ACCCRN programme can be adopted by other cities to deal with climate uncertainty. The assessment mainly identifies current

vulnerabilities and capacities. Vulnerability analysis through indices in a GIS platform opens up avenue for spatial analysis.

## 3. ENERGY SYSTEMS AND TECHNOLOGY ASSESSMENT

### 3.1 Indian perspectives on global energy scenarios till 2050 - TIFAC

#### 8 Background of the project:

This project was awarded by TIFAC (Technology Information, Forecasting and Assessment

Council) for a collaborative project with IIASA (International Institute for Applied Systems Analysis, Laxenburg Austria) under the TIFAC-IIASA programme was to carry forward.

- Study existing IIASA global regional energy scenarios from India's perspectives.
- Suggest new scenarios suitable for India and reflect India's viewpoints.
- Extend the time horizon for India's energy projections up to 2050
- Get familiarized with the process of developing energy scenarios for other world regions. This will help us to address Energy security issues.
- Understand Energy transitions needed in the future that is consistent with global perceptions and Research and Development.

The inputs from the IIASA model were used in IRADe model, especially the new and current technologies as provided in the IIASA model included in the IRADe model altogether e.g. Coal, Natural gas, Hydro, Nuclear, Carbon Capture and Storage (CCS) coal, nuclear, solar PV, off shore wind on shore wind, Solar thermal with storage, Solar thermal without storage, Advanced nuclear, CHP, Energy efficiency, bio fuels and others will be included. These technologies are proposed to be incorporated into the IRADe model and construct India specific energy scenarios till 2050.

A comparative analysis was conducted among four projections viz. Shell 2050, World Energy Technology Outlook (WETO (H2), International energy technology outlook (IEO) World Energy Outlook-2010, and Greenpeace energy revolution. They give international, national, industrial and NGO perspectives respectively. All the projections take a look at the increase in the share of clean energy but the range of percentage varies significantly.

### 3.2 Access to Energy and Gender:

IRADe is the National Focal Point (NFP) for India ENERGIA, an international network for Gender and Energy professionals where members share and exchange information, knowledge, about best practices and views on gender and energy issues ranging from technological to social to political level.

A common platform was created of a group of professionals from gender, energy and poverty on certain identified issues to share best practices and to develop ideas for gender-energy-poverty related research and knowledge sharing, activities. The network group consisted of representatives from Ministries, State level representatives, gender experts, academic experts, gender related NGOs, public and private sectors, research institutions, etc.

- a) IRADe informs Energia network partners about important articles, announcements, events, policies and so on. We have two networks one for ENERGIA activities and another of Gender experts in India. Most institutes are going to both the networks.
- b) IRADe gave a detailed response from the gender perspective to draft the Green India Mission. IRADe reviewed the mission from Gender and Energy perspective. The note was sent to the concerned officers of Minister of Environment and Forests. Some suggestions have been taken on board.
- c) A journal article titled "Hardships and health impacts on women due to traditional cooking fuels: A case study of Himachal Pradesh, India" is accepted in Energy Policy.
- d) Article on "Gender Audit of the National Energy Policy in India" is published/submitted to the newsletter by Practical Action.
- e) A gender related article in UNDP monograph was written and is also available on IRADe website.

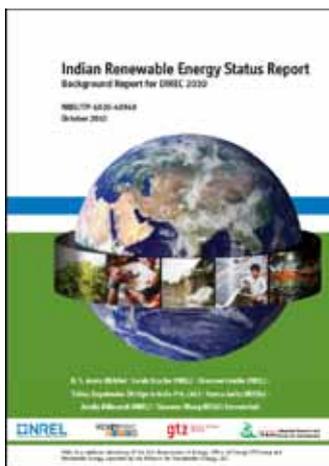
### 3.3 Indian Renewable Energy Status Report - Background Report for DIREC 2010

The “Indian Renewable Energy Status Report” was prepared as a background report for the DIREC (Delhi International Renewable Energy Conference) 2010 on behalf of the “Renewable Energy Policy Network for the 21st Century - REN21”. Basis of this report was a study from the Deutsche Gesellschaft fuer Internationale Zusammenarbeit (GIZ) for the German Federal Ministry for Environment, Natural Conservation and Nuclear Safety (BMU). In addition to the financial and technical support by the GIZ the report was produced with the collaboration of experts from the U.S. Department of Energy’s National Renewable Energy Laboratory (NREL), REN21 and Bridge To India Pvt. Ltd.

The report gives a comprehensive review of the Indian Energy and the Renewable Energy Status. On the one hand in 2008 approx. 400 million people (including 47.5% of these living in rural areas) still did not have access to electricity and on the other hand, Indian’s remarkable economy growth requires energy in the light of sufficient quality and access. To fulfill this power demand India has to increase more than double the total installed capacity, which was 159 GW in March 2010, by 2017. Renewable Energy is playing a very important role in addressing this gap between energy demand and supply. Renewable Energy has the capability in improving the energy security and reducing the dependence on fossil fuels.

The report discusses how India already has boosted the growth of renewable energy and gives an extensive look into the renewable energy sources like wind, solar, small hydro and biomass. These chapters include topics on estimated resource potential, existing installation rate, policies, investment flows and industrial trends in India. Furthermore the report covers the potentials of renewable energy for India to provide access to remote, un-electrified populations and ended with the discussion of technology transfer and the status of financing of renewable energy technologies in India.

Comprehensive overview of renewable energy and its tremendous opportunity for India was attempted. The result is a unique and informative report which attracted interest at Indian policy makers, participants of the DIREC conference and stakeholders worldwide, who are interested in renewable energy development in India.



#### 3.4 Report on Gender and Renewable Energy in India

IRADe has completed the “Gender Analysis and Renewable Energy Scenario in India” project in collaboration with the Deutsche Gesellschaft fuer Internationale Zusammenarbeit (GIZ), India. Recognizing the potential of renewable energy in India, the prime objective of the study was to suggest policy measures and applicable business models for harnessing this potential for gender empowerment towards the construction of egalitarian and just society.

Nearly 625 million people in India still have no access to modern cooking fuels; nearly 300 million people do not have access to electricity. Almost 70% of the energy used in poor Indian households, comes from non-commercial fuels such as fuel wood, agricultural wastes and animal dung that are primarily managed by women. It observed that firewood and chips continued to be main source of energy used for cooking in rural India, with 75 % of the rural household’s dependent upon it. At national level traditional energy sources provided 32 % of primary energy consumption in 2003-04.

IRADe suggested measures for policy adjustments in favour of more use of renewable at the national as well as state level and involving women by suggesting business models to promote

village level entrepreneurs besides being beneficiary, women need to be involved in process of the decision making and implementation. The study notes that identification and clear articulation of gender goals in the preparation of energy programmes using explicit and measurable variables and indicators, investment, monitoring, inter-ministerial coordination and gender budgeting are critical at the policy level while fuel-wood plantation, financial and technical support to SHG, promotion of energy appliances such as solar lanterns, eco-cookers, and improved cooking stoves, etc with suitable business models and public-private partnership are the significant steps that should be taken into consideration at the implementation level. In addition, the study recommends that capacity building at various levels, gradually increasing the village level infrastructure, raising the awareness and corporate social responsibility are essential.

#### 4. FOOD SECURITY AND AGRICULTURE POLICY

##### Modeling for the Indian Agriculture study

###### Objectives:

IRADe developed a multi sectoral inter temporal activity analysis model appropriate to study Indian Agriculture and used it to generate scenarios that help arrive at policy conclusions. The main objectives of the project were:

- 1) Modeling agricultural outputs and productivity
- 2) Impact of irrigation and technology agriculture
- 3) Impact of migration of labor from agriculture to non-agriculture sector
- 4) Factor markets and their impact on agriculture
- 5) Impact of climate change and climate mitigation policies on agriculture
- 6) Policy options to Improve agricultural output and productivity

###### Progress so far:

The IRADe team has updated the linear expenditure based demand system for 5 consumer classes each to 10 classes each for rural and urban sectors. The rural and urban populations which were earlier exogenous to the model have now been made endogenous. This has provided for migration of population from rural to urban areas. The sectoral aggregation in the IRADe model has been changed to a more disaggregation for agricultural sectors. Currently there are 15 agricultural sectors compared to four initially. Land and irrigation are introduced into the model as explicit constraints. Various taxes like income tax and produces tax, export subsidy and import tariffs are introduced. The exports and imports specifications have been made more rational. Sector specific Total factor productivity and commodity specific usage efficiency parameters have been provided. (Currently this is only for the energy inputs). With this updated model a base run for projecting aggregate economic performance and the performance of the agricultural sector up to 2039 has been obtained. These have been compared to seven additional scenarios involving higher productivity growths, lower irrigational potential and lower imports possibility.

A preliminary report was presented to the Planning Commission in early March on the structural transformation of the Indian Economy and its long term agricultural future. On structural change, the key finding was that the productivity gap between agriculture and non-agriculture is still widening rapidly. Urban areas have primarily absorbed high skilled workers, making it difficult for most rural people to take advantage of the urban economy. Because of the slow agricultural growth and a slowdown in agricultural productivity growth,

agriculture has also not been able to increase its labor productivity much or absorb more labor. Therefore most rural employment is generated in the rural non-farm economy. While supporting rural income growth, the rural non-farm sector is not a sector that can lead the structural change between agriculture and non-agriculture.

With total factor productivity growth in the Indian economy of 1.5 percent, and some improvements in energy efficiency, the model of the Indian economy discussed above generates economic growth over the next thirty years at close to 8.5 percent. Despite declining income elasticity for food, the demand for food keeps rising rapidly because of population growth and the rapid income growth. Given that cultivable area is constant and irrigation cannot grow very fast, the model tries to import the additional food requirements, which, if unconstrained would rise to levels that would jeopardize India's food sovereignty and food security, and would perhaps be beyond the capacity of the global markets to supply. The combined constraints on imports and growth of land and irrigation will be so severe that economy-wide growth would have to slow down. Such a slowdown could only be averted under much more rapid growth of total factor in Agriculture, at the rate of Chinese total factor productivity growth. The interesting feature of the model is that it traces the joint implications of rapid increase in food demand, constraints on food imports, and limited land and water resources and was therefore able to analyze the interactions of the constraints.

## 5. OTHER ACTIVITIES

### **Preparation of Master Plan of Jodhpur city as development of solar city under Solar cities development program of Ministry of New and Renewable Energy (MNRE) Government of India.:-**

Ministry of New and Renewable Energy Government of India sponsored a project to prepare Master Plan with detailed action Plan during 11th plan period for development of Jodhpur as solar city as per the specification, guidelines, term & condition of MNRE. The objective of the Master Plan is to set a goal of minimum 10% reduction in projected total demand of conventional energy at the end of five years from energy efficiency measures and generation from renewable energy installations.

The activity-wise tasks that will be undertaken are described below:-

1. Prepare Energy base line for the Jodhpur:-The baseline was prepared
  - Sector wise (residential, commercial and institutional, industrial and municipal) data collection on energy consumption (electricity, petroleum products, coal, biomass, etc).
  - Surveys for understanding Energy use patterns and efficiency
  - Preparation of energy baseline report is a detailed documentation of the existing energy demand and supply scenario for the city. Among other things, it consists of sector-wise energy consumption matrix and energy supply-mix for the base year.
2. Activities of the project forecast the energy demand for 5 year and 10 year periods. Develop a sector wise strategy to carry out techno-economic feasibility of different renewable energy and energy efficiency options of each sector and prioritize options.

Carry out Renewable energy resource assessment to identify the potential renewable energy sources for the city.

3. Conduct stakeholder's consultation to discuss the Draft Master Plan and the sector-specific strategies to determine and to identify the viability/practicability of the recommended sector-specific strategies for attaining the objective of 10% reduction in energy consumption from conventional sources at the end of five years.

4. Prepare master plan, the Draft Solar City Master Plan for each city, namely Jodhpur will be finalized based on the inputs received in the Stakeholder Consultation process.

### Internships at IRADe

Depending on ongoing research, IRADe regularly undertakes capacity building programmes, dealing with research on climate change, vulnerabilities and hazard analysis.

Centre of Excellence welcomed 8-students from Center for Environmental Planning and Technology University (CEPT), Ahmdabad came to IRADe. They worked on climate change and urban vulnerabilities projects for 2 months. Each student took up a different city and highlighted climate vulnerability.

CEPT interns that worked for 2-months in IRADe are:-

Ms. Geeta Sandal

Ms. Ramaya Malladi

Ms. Sukanya Bhaumik

Ms. Sonal

Ms. Gargi Anand Joshi

Mr. Parekh Shah

Mr. Kunal Vatsyayan

Mr. Sagar Chidanand Asapur

## 6. EVENTS / SEMINARS / WORKSHOPS

### 6.1 Internatwional Workshop on "Sustainable and Climate Resilient Urban Development" 8-9 September, 2010

The International Workshop on "Sustainable and Climate Resilient Urban Development" was organized by the Asian Cities Climate Change resilience Network (ACCCRN) India, Integrated Research for Action awnd Development (IRADe) and Institute for Social and Environmental Transition (ISET) on 8-9 September 2010, with active support from other ACCCRN India partner organizations - TARU, GEAG and TERI. The two day workshop was jointly supported by the UK Department for International Development (Dfid) and the Rockefeller Foundation, US.

The international workshop witnessed the gathering of a unique combination of decision makers, city mayors and local government representatives, local NGOs and international research experts. The intensive discussions and presentations held over a two-day period generated a wide array of conceptually grounded and highly practical insights and guidance on how India can begin to address urban challenges in the context of climate change. The agenda of the workshop was to identify the most suitable practices of climate resilience and low-carbon- high growth processes for urban development.



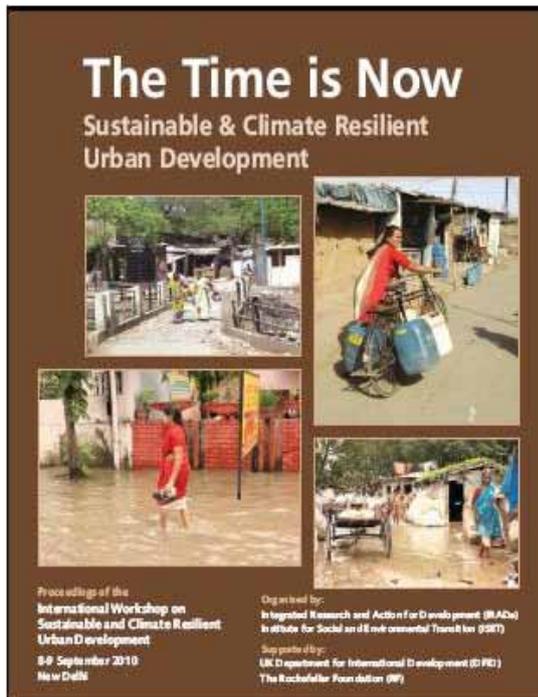
Interns at IRADe

The workshop was attended by eminent panelists and speakers including Mr A. K. Maira (Member, Planning Commission, GoI), His Excellency Sir Richard Stagg (British High Commissioner to India), Honourable (Mrs.) Anju Chowdhary (Mayor, Gorakhpur), Mr. Navin Kumar (Secretary, MoUD, GoI), Dr. Shailesh Nayak (Secretary, MoES, GoI), Dr. Kirit Parikh (Chairman, Expert group on Strategy for a Low Carbon Economy, Planning Commission), Mr. Mike Keegan (Transport Commissioner, London), Dr. Cristina Rumbaitis Del Rio (Associate Director, Rockefeller Foundation), Dr. Marcus Moench (Director, ISET), Dr. Noor Mohammad (Chairman, AMDA & Member Secretary, NCR Planning Board), Mr. Sridhar Chiruvolu (IAS, Commissioner, PMC, Government of Bihar).



Practical steps and points of entry where action can now contribute to urban resilience and low carbon growth were highlighted. The discussions provided substantial direction on courses of action for responding to three major challenges; climate change, urbanization and poverty through their linkages. A workshop report containing proceedings of the workshop, titled "Time Is Now", was prepared which is available on IRADE's website:

[http://irade.org/ISET\\_Reort.pdf](http://irade.org/ISET_Reort.pdf)



## 6.2 International Conference on "A Global Green New Deal? - Towards Green Energy Policies for Sustainable Development" September 24-25, 2010.

IRADE organized the International conference "A Global Green New Deal?- Towards Green Energy Policies for Sustainable Development" on September 24-25, 2010 at Hotel Claridges, New Delhi. The conference was supported by Friedrich Ebert Stiftung (Foundation). The prominent participants include Mr. Deepak Gupta, Mr. Rajani Ranjan Rashmi, Dr. Felix Schmidt, Dr. Alejandro Chanona Burguete, Mr. Robert Donkers, Dr. T Ramasami, Dr. Pronab Sen, Mr. Mani S. Muthukumara and Dr. Nina Netzer and many others.

The Green New Deal should stimulate economic recovery and ensure sustainable development, create employment opportunities, enhance income

of the world's poor to ensure decent minimum living standard, reduce carbon dependency, and arrest environmental degradation.

This conference was held to discuss, debate, and explore the emerging opportunities for sustainable socio-economic development in the context of energy security, recent economic crisis. China, Germany, USA, Korea, EU, IMF, and UNCTAD shared their concepts on policy issues and strategies on nationally appropriate new green technologies, prudent and proven

renewable energy technologies, and impact of climate change for holistic global development. The leading experts from India discussed upon low emission technologies, technology transfer, role for Multilateral Agencies, Clean Energy investment framework, policy and regulatory challenges, and enabling mechanism, etc. The participants included public and private sector executives, officials from Ministries of Central and State governments, National and International experts, Energy Suppliers, Energy Consumers of various sectors, Banks and Financial Institutions, Legal and Management Consultants, Environmental Scientists, R&D Institutions and NGOs.

### Conclusions:

- Interaction between energy, environment and economy is to be understood better in the national context but there is also a need for a global consensus.
- Green development should also include optimum natural resource consumption. There is need for a green industrial policy and global action plan which promote renewable energy and green energy which can replace fossil fuels.
- Bye laws are needed so that all new building should be compliant with 3-4 star rating.
- Some countries have obligations to mitigate emissions, but all UN countries should also accept part mitigation obligation.
- The government of the countries should pay for the damages they have inflicted on the atmosphere say since year 1990.
- The new “New Deal” will require technical development globally. The capacity building aspect has addressed.
- On a global level, an estimated US\$ 100 billion per annum is needed in for the UN driven Green fund from year 2012 to 2020. A fast track financing system has to be created.



### 6.3 Public lecture by Lord Professor Nicholas Stern, 21st October, 2010

IRADE and World Energy Council- Indian Member Committee (WEC-IMC) organized a public lecture by Lord Professor Nicholas Stern, on “Economics, Ethics and Climate Change” on 21st October, 2010 with active support from LSE India Observatory, India Energy forum and Petrofed. The lecture also involved comments by Shri Montek Singh Ahluwalia and Dr. Kirit Parikh with initial comments by Dr. Jyoti Parikh.

Professor Stern focused on the economics of climate change, economic development and growth, economic theory, tax reform, public policy and the role of the state and economies in transition. He addressed vital issues of externalities and spoke on right to compensations for damage, Intergenerational, Inter country sharing of burden of adaptation, equal per capita allocation in the world. He spoke of problems of risk and uncertainty, welfarism and the challenge of bringing down emissions of CO<sub>2</sub>. He discussed the potential role of permits for emissions and co-benefits of low carbon growth. He concluded the talk by quoting that climate change is inequitable in its causes and impacts. According to Stern there is nothing more iniquitous than equal per capita, as the developing countries should have higher rights

to account for historical burden imposed by the develop countries. He felt that utilitarianism is not the only way to look at the problem. Other disciplines provide more options and solutions such as rights, duty, moral, justice and so on. He does not believe that any one has the right to pollute, and we need to change the semantics. Instead of per capita allocation, we need to talk about right to develop which may result in higher emissions. Quota is also the word used for allocation of carbon space, rather than permits.

Shri Montek Singh Ahluwalia gave valuable insights on reducing emissions by determination of equal per capita limit of emissions which needs study of historical emissions or past records of emissions from the country. Dr. Kirit Parikh was of the view that t discounting is not a right way as for the future and sustainability; he also spoke about levying charge on stocks of carbon. He emphasized on the importance of residence time of CO<sub>2</sub> equivalent in atmosphere and the importance of recognition of co-benefits and identification of alternatives.

The talk provided substantial understanding about connection of Ethics and Economics with climate change and mitigation.

#### 6.4 Workshop on Conservation of Marine National Park (MNP), Gandhinagar, Gujarat, 12th November 2010

The third and final workshop for the Ministry of Environment and Forests project “Analysis, Strategies, Action Plan & Implementation of Policy for the Ecosystem of Marine National Park, Gujarat in harmony with industrial development” supported by Gujarat Forest Department was held in Gandhinagar on the 12th of November, 2010. The first two workshops held at Gandhinagar and Jamnagar respectively provided the basis of developing a more coherent programme in the MNP based on the assessments of industrialization and ports /shipping activities and helped to, disseminate information related to the conservation of the MNP, the mangroves, the coral reefs and to develop a conservation approach for MNP, including mangroves and Khijadia Bird Sanctuary.

The final workshop aimed at collaborative action in the management of MNP. The backdrop of it was discussion of recommendations suggested for the conservation of MNP. It was felt by all, that while there had been many workshops and meetings earlier among mainly ecologists, environmentalists, foresters, NGO’s and social scientists there was a need for bringing the officials from other departments and representatives from other sectors such as pollution control, industries departments, coastal guards, ports and shipping, private sector and Jamnagar city representatives.

**Dr. Jyoti Parikh**, Executive Director, IRADe, welcomed the delegates and emphasized the importance of management for the conservation of the ecozone in Jamnagar district comprising of the three ecosystems viz. the MNP, mangroves and the adjacent KBS. Shri. S. K. Nanda (Principal Secretary, Forest Department) spoke about regular monitoring of the air and water pollution generated by industries and monitoring of all activities around MNP. He felt tourism brings a brand value but did not favor



excessive physical infrastructure that might create adverse ecological impacts, involvement of stakeholders (local people), need to develop a crisis or core management group across states which shall also give guidance to industries. He spoke about looking at existing successful case studies to replicate in areas that require development alternatives. Coordination is necessary among the development efforts taking in various places.

The other members present were Mr. S. S. Tyagi (Air Comm, retd), Mr. Sata, DCF (Marine National Park), Amita Shah, Director (GIDR), Dr Bharat Jethva (Wetlands International), Dr. S. J. Pathak (Saurashtra University), Mr. R. V. Asari (PCCF, Forest Department), Mr. Kannan (Head, Environment Division, Reliance). The valedictory session comprised of notable people like Dr. Kirit Parikh (Former Member, Planning Commission, GOI), Mr. E. Balagurusamy (Member Secretary, Gujarat Ecology Commission), Shri. R. D. Kamboj (Director, CCF, MNP), Dr. Indira Hirway (Director, CFDA), Dr. Kartikeya V. Sarabhai (Director, CEE).



The highlight of the workshop was the need for an overall authority in Gulf of Kachchh with representatives from industry/community/govt. etc. to make valuation of ecosystems along with data integration. Coastal Zone Management Authority can be set up with coastal zone monitoring stations. According to

Environment Protection Act the eco-sensitive zone requires a buffer zone. Buffer zone need not be of a specific size. It should be based on identifiable rational regime based on biological parameters and sound research. Awareness of communities on the value of their surrounding natural environment and community participation is necessary. The MoEF can choose independent agencies to conduct EIAs for accuracy and transparency. Whether tourism should be prohibited can be decided on the basis of the carrying capacity of the particular place. Conduct Environment Impact Assessment (EIA) to capture the positive and negative impacts of tourism. There can be independent agencies to conduct EIAs for accuracy and transparency. Capacity building and awareness is also needed for small and medium scale industries such as brass making, salt making and recovery, community based activities such as fishing, waste recycling, mangrove planting etc.

#### **6.5 International Workshop on “Prospects of Indian Agriculture and Rural Poverty Reduction” 27th- 29th April, 2011**

The international workshop on “Prospects of Indian Agriculture and Rural Poverty Reduction” was organized by Centennial Group. This study has been managed by the Centennial Group, Washington DC with financing from the Syngenta Foundation for Sustainable Agriculture. It is a follow up study to their recently released study of the Centennial Group “India 2039: An affluent society in one generation.”

The objective of the study is (1) to evaluate the medium and long term consequences for agriculture and rural poverty reduction of rapid economic growth, and in a rapid growth context; and (2) to evaluate the contribution of agriculture to economic growth and rural poverty reduction and prospects in this regard. The study is being coordinated by well known economists, Dr. Hans P. Binswanger-Mkhize, Consultant, South Africa, and Prof. Kirit Parikh, Chairman, Integrated Research and Action for Development (IRADE). NCAER and ICRISAT

were an integral part in this project. This is expected to provide valuable insights to the policy makers, including Planning Commission and the concerned Ministries of the Government of India and State Governments.

On 27th, A Researcher's Review meeting was held in Indian Habitat Centre. The review meeting was graced by eminent panelists and speakers including Suman Bery (Economic Advisory Council to P.M), Prof. Kirit Parikh (Chairman IRADe), Prof. Jyoti Parikh (Executive Director, IRADe), Prof. Han. Binswanger (Consultant, South Africa), B. B. Bhattacharya (Former Vice Chancellor, JNU), V. K. Chadha (CEO, South Asian University), Bina Agarwal (Director, Institute of Economic Growth), Ramesh Chand (Director, NCAP), Shasanka Bindhe (Senior Fellow, NCAER), S. Mahendra Dev (Vice Chancellor, IGIDR), Cynthia Bantilan (Principal Scientist, ICRISAT), Hari Narrajan (Senior Fellow, NCAER).

On 28th and 29th, Workshop witnessed a unique combination of decision makers, corporate and NGO representatives, economists, agronomists, researchers and respective stakeholders and generated a wide array of conceptually grounded and highly practical insights and guidance on how India can attain double digit growth in agriculture. Few of the topics discussed included: Food Grains policy, Connecting farmers to the market, Agricultural Research and Agricultural Extension, Water and Irrigation policy, Popular participation and decentralization, implementation of agricultural and rural programs and new approaches. The few chair persons and the discussants include Abhijit Sen (Member, Planning Commission), Mihir Shah (Member, Planning Commission), C. H. Hanumantha Rao (Honorary Senior fellow, CESS), Praful Patel (Centennial Group), Harinder Kohli (Centennial Group), V. S. Vyas (Economic Advisory Council to the P. M), Ashok Gulati (Chairman, CACP), Saumita Chaudhuri (Member, Planning Commission), Suman Bery (Economic Advisory Council to P.M), P. K. Basu (Secretary Agriculture), P. K. Mishra (Former Secretary, Agriculture), T. Nanda Kumar (Former Secretary, Agriculture), P. K. Joshi (NAARM), Vivek Bharti (Pepsi. Co), Sanjay Nandrajog (Field Fresh), Arun Uppal (Haryali), Parvesh Sharma (Small Farmers Agribusiness Consortium), M. E. Ha2que (Member, Central Water Commission), B. K. Sinha (Secretary, Ministry of Rural Development).

## 7. PROFESSIONAL ACTIVITIES OF MEMBERS

Dr. Kirit Parikh, Chairman, IRADe and Member, Planning Commission, Govt. of India, New Delhi has been involved in number of high level policy committees of the Government. He has also been the member of governing bodies of many academic institutions and chaired some of them.

He was awarded "Padma Bushan" by the president of India in March 2009.

### Selected list of seminars, workshops and meetings attended

- Chaired session on "Interaction on power & Infrastructure Sections at Vigyan Bhavan, New Delhi. Organized by SCOPE with Deptt. of Public Enterprises (DPE) (10th April, 2010)
- Delivered Keynote Address on "Land use Planning for Sustainable Agriculture in the Age of Climate Change" at TIFAC-IIASA-MSE Modeling Workshop at Madras School of Economics, Chennai (15th April, 2010)
- Delivered Keynote Address on "Viabiles and Sustainable Pricing of Petroleum Products at Inaugural Session at 2nd India Oil & Gas Summit, 2010 at Hotel Hyatt Regency, New Delhi. Organized by Indian Chamber of Commerce with MoPNG. (16th April, 2010)
- Delivered talk on Panel Discussion on "Future of Carbon Market - Post Kyoto at Carbon

Bazar 2010. Organized by GTZ at Taj Mahal Hotel, New Delhi (11.05.2010)

- Delivered talk on “Carbon Finance Forum on India’s Low Carbon Growth Strategy.” At Seoul. Organized by Busan Intl. Financial Center, Seoul.(15th November, 2010)
- Chaired the session “CEO’s Round Table on Power Development-Challenges & Imperatives.” At Le Meridien Hotel, New Delhi. Organized by India Energy Forum. (25th November, 2010)
- Delivered Valedictory Address at the Regional Conference on “The Environment of the Poor in the context of Climate Change & the Green Economy.” At Taj Palace Hotel, New Delhi. Organized by Asian Development Bank (ADB). (26th November, 2010)
- Chief Guest and delivered keynote address at National Conference on Advances in Nuclear Technology (ADNUTECH) at NPCIL Auditorium, Mumbai. Organized by Indian National Academy of Engineering (INAE) (2nd Dec. 2010)
- Chaired a session at Conference on Environment and Development in South Asia in Kathmandu, Nepal. Organized by SANDEE (5th December, 2010)
- Delivered Keynote Address at Round Table Session on “Overseas Energy Acquisition to Ensure India’s Energy Security” at Le-Meridien Hotel, New Delhi. Organized by CII. (22nd December, 2010)
- Chaired the Technical Advisory Committee meeting awarded to CESS by Ministry of Statistics & Programme Implementation at CSO, New Delhi. ( 22nd December, 2010)
- Chief Guest to inaugurate Conference on “Scoping Study on the Impact of Climate Change and Food Insecurity on Poverty” at India Habitat Centre, New Delhi. Organized by CUTS (11th January, 2011)
- Chaired a Session II at India Habitat Centre. Organized by Ministry of Water Resource. (11th January, 2011)
- Attended High Level external experts consultation on the interaction between Agriculture and the Environment at USA. Organized by Bill & Melinda Gates Foundation, USA (18th January, 2011)
- Delivered Keynote Address at inaugural session of Conference on “A call to Low Carbon Economy at Le Meridien Hotel, New Delhi. Organized by ASSOCHAM. (16th February, 2011)
- Delivered Keynote Address on Investing in Climate Change Solutions at Conclave on Business & Climate Change at Le Meridien Hotel, New Delhi. Organized by CII-ITC. (15th March, 2011)

#### **Selected list of seminars, conferences, workshops and meetings attended by Dr. K. Parikh**

#### **Dr. Jyoti Parikh, Executive Director IRADe; selected list of seminars, workshops and meetings attended**

- Panelist at 6th World Islamic Economic Forum in Kuala Lumpur. Organized by World Islamic Economic Forum, Malaysia (19th May, 2010)
- Panelist at Urban Development & Sustainable Habitat at IHC, New Delhi. Organized by CNFC Media. (20th September, 2010)
- Panelist at Session on “Renewable Energy in India at Delhi International Renewable Energy Conference (DIREC) 2010 at NOIDA. Organized by MNRE. (28th October, 2010)

- Chaired session-II “Greening the Hydrocarbon Value Chain” at Vigyan Bhavan, New Delhi. Organized by ONGC. (2nd November, 2010)
- Keynote Speaker on Energy at Symposium on “Climate Change – Research, Awareness and Capacity Building.” At Jajpur National University, Jaipur. Organized National Academy of Sciences (NASI). 2nd December, 2010)
- Panelist at Conference on Environment & Development in South Asia. Organized by SANDEE, Kathmandu, Nepal. (6th December, 2010)
- Chaired session “RE Technologies National Mission on Strategic Knowledge on Climate Change” at 10th Green Energy Summit at Hotel Lalit, New Delhi. Organized by India Energy Forum. (15th December, 2010).
- Panelist at seminar on Socio Economic implications of Climate Change at Hyderabad. Organized by GIS Development. (19th January, 2011).
- Chaired a session at conference of TIFAC-IIASA at Gandhinagar. (19th January, 2011).
- Chaired Session “Critical Issues of Climate Change and Solution at Seminar “Climate Change & Markets: Opportunities, Challenges & Policy Concerns” at TERI University, New Delhi. Organized by TAER & INSEE (11th February, 2011).
- Attended Conference on “Unconventional Sources of Fossil Fuel & Carbon Management” at Gandhinagar. Organized by Gujarat Energy Research & Management Institute (GERMI), Gandhinagar, Gujarat.(21st February, 2011).
- Attended Expert Consultation and Round Table Workshop on Gender & Adaptation to Climate & Socio-cultural Change at Kathmandu, Nepal. Organized by ICIMOD, Nepal. (8th March, 2011).
- Speaker at Inaugural Session and Chaired a Seminar on ‘Data on pollution: availability and gaps’” Organized by CSO in Jaipur. (24th March, 2011)

#### **Mr. C.R.D. Biswas**

##### Participation of Workshops

- Sustainable and Climate Resilient Urban Development; September 8-9, 2010; Indian Habitat Centre, New Delhi;
- Conference on Global Green New Deal, September 23-24, 2010, Hotel Claridges, New Delhi;
- Lecture of Lord Professor Nicholas Stern on “Ethics, Economics, and Climate Change” October 21, 2010; Scope Complex, New Delhi;
- Workshop on “Consultation / Review of Recommendations on Industrial Development and Conservation of Marine National Park”, Jamnagar, Gujarat on November 12, 2010 at Cambay Resort, Gandhi Nagar, Gujarat
- Presentation at JNU (National Programme on Carbon Sequestration) DST Project on CCS in Power Sector, November 11, 2010
- “The Road-Map towards a Flood Resilient Urban Environment in India” on the 19th October 2010, UNDMT, New Delhi
- 16th Technology Summit & Technology Platform, 7- 9 December 2010, New Delhi, Organized by CII, New Delhi

**Mr. Probal Ghosh****Workshop, tours and meetings**

- Visited IIASA as a guest research scholar for 6 weeks to study the GEA scenario implication for India
- Meeting in planning commission to present the IRADe model results for Agriculture Workshop and Review conference for the centennial group
- Meeting on the sub group for projection of demand for crude, petroleum products and natural gas

**Conference Papers**

- A paper on IRADe model results for Agriculture Meeting in planning commission and Workshop and Review conference for the centennial group
- Presented results of the analysis of the GEA scenario implication for India at a seminar in IIASA

**Mr. Nirbhay Srivastava****Mr. D. K. Upadhyay**

- ICT and Democracy: Changing Social and Political Dynamics in India, International conference, "Information Society and Globalisation: Transformation of Politics", Dubrovnik, Croatia, 23-24 October, 2010
- Research Paper, Climate Change Induced Migration in South Asia: A Case Study of Bangladeshi Migration to India, International Conference on Climate Change, Migration and Human Security, 1-2 July, 2010, International Institute of Social Science, Erasmus University Rotterdam, the Hague, the Netherlands
- Research paper, "Information and Communication Technologies for Rural Development in India: Initiatives, Challenges and Prospects", International Conference on Globalizing South Asia, 27-29th May, 2010, University of Helsinki, Finland
- Research Paper, European Engagement in Reconstruction and Development in Afghanistan, International conference, "European Engagement in Afghanistan" held at School of International Studies, Jawaharlal Nehru University, New Delhi, 22-23 November 2010
- Participated in Panel Discussion, "A Framework to Grow: Finance, Infrastructure and Entrepreneurship for Liveable Cities", organized by Harvard Business School (India Research Center) and MIRABILIS, India Habitat Center, 2nd June 2010
- Certificate Course in Perspectives on Environment and Development: Concepts and Debates, Academy for Conservation Science and Sustainability Studies, Ashoka Trust for Research in Ecology and the Environment (ATREE), Bangalore, 9-16 March 2011

**Mr. Alwin Dsouza**

- Attended Vision 2020 Conference on "Leveraging Agriculture for Improving Nutrition and Health" organized by IFPRI, February 10-12, 2011, New Delhi, India
- Attended the "Prospects of Indian Agriculture and Rural Poverty Reduction" organized by centennial group and Centennial Group, Syngenta Foundation for Sustainable Agriculture, and Integrated Research and Action for Development, 27th-29th April, 2011, New Delhi.

## 8. LIST OF RECENT PROJECTS OF IRADe

## Projects Undertaken (2010-2011)

S. No	Title of the Project	Funding Agency
1	Centre of Excellence for Urban Development on 'Climate change Vulnerability and Adaptation'	Ministry of Urban Development
2	Modeling for the Indian Agriculture study	Centennial Group, USA
3	Asian Cities Climate Change Resilience Network	ISET-ACCRN
4	Indian Perspectives on global Energies Scenarios till 2050	TIFAC/IIASA
5	Management of Ecosystem of Marine National park, Gujarat in harmony with industrial development	Ministry of Environment and Forests
6	Indian Renewable Energy Status Report - Background Report for DIREC 2010	Deutsche Gesellschaft fuer Internationale Zusammenarbeit (GIZ)
7	Translation of the National Action Plan on Climate Change for the Urban Sector	GIZ
8	Gender Analysis and Renewable Energy Scenario in India	GIZ
9	Master Plan of Jodhpur city as development of solar city under Solar cities development program of Government of India	Ministry of New and Renewable Energy
<b>IRADe Policy Events</b>		
1	Workshop on Conservation of Marine National Park (MNP), Gandhinagar, Gujarat, 12th November 2010	Ministry of Environment and Forest
2	A public lecture by Lord Professor Nicholas Stern on "Economics, Ethics and Climate Change" 21st October, 2010	LSE, IEF, Petrofed
3	International Conference on "A Global Green New Deal? - Towards Green Energy Policies for Sustainable Development" September 24-25.	FES
4	International Workshop on "Sustainable and Climate Resilient Urban Development" 8-9 September, 2010	ACCRN, ISET, DfID, RF

**Decision Support Provided To Various Ministries By  
Integrated Research and Action for Development (IRADe)**

No.	Name of the Ministry	Projects
1	Delhi State Government	Clean Developed Mechanism Training Program for Delhi State Government Agencies
2	Ministry of Urban Development	Centre of Excellence for Climate Change and Adaptation-Assessing.
3	Ministry of Environment and Forests (MoEF)	GHG Reduction Potential, Sectoral Baselines and Opportunities for CDM Projects.
		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)	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)	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)	Techno-Economic Analysis for Bio-energy Options.
		Indian Perspectives on Global Energy Scenarios till 2050
7	Ministry of External Affairs	Analysis of Alternative Approaches of Climate Negotiations.
8	Central Statistical Office (CSO)	Natural Resource Accounting (NRA) Goa.
9	Ministry of Power	Evaluation of Franchisee system in the selected Districts: Assam, West Bengal, Nagaland and Rajasthan.
10	Rural Electrification Corporation	Evaluation of Franchisee system in II. Additionally Selected Districts: Assam, West Bengal and Rajasthan.
		Evaluation of RGVY Programme in 5 states.

No.	Name of the Ministry	Projects
11	Planning Commission	Grant-in-aid for conducting a research study on Extension of Minimum Support Price (MSP), Fiscal and Welfare Implications.
12	Government of Manipur	Renewable Facility Development at Raj Bhavan, Manipur
13	Ministry of Chemicals & Fertilizers (Department of fertilizers)	Demand, supply and subsidy Analysis for Indian Fertilizer Sector
14	Ministry of Earth Sciences(MoES)	Vulnerability of coastal cities on Rivers to climate change - case study of Surat.

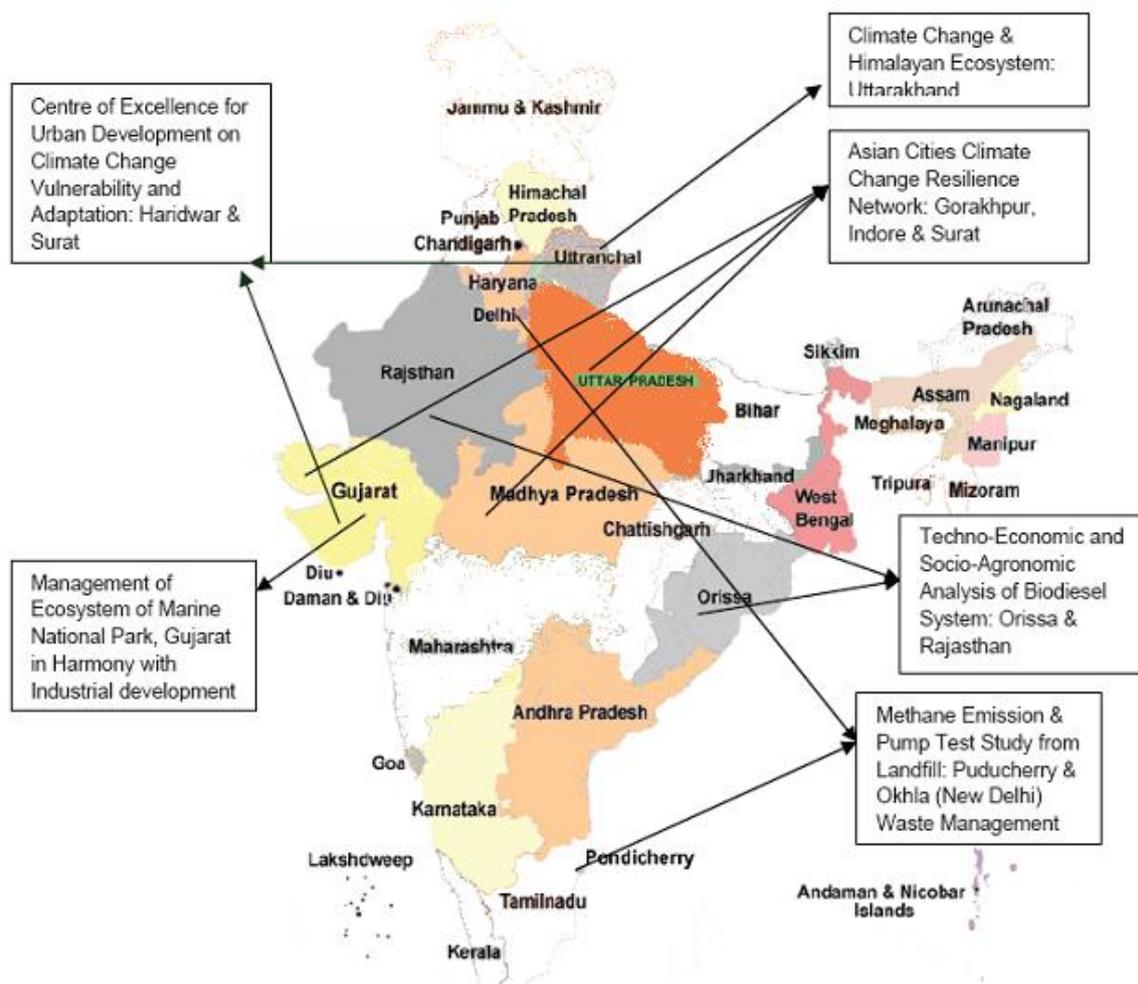
**Decision Support Provided To Various Non Government Organizations/Institutions Integrated Research And Action For Development (IRADe)**

No.	Name of the Organization	Projects
1.	GIZ- Deutsche Gesellschaft fuer Internationale Zusammenarbeit	Translation of the National Action Plan on Climate Change for the Urban Sector
		Indian Renewable Energy Status Report – Background Report for DIREC 2010
		Gender Analysis and Renewable Energy Scenario in India
2.	Rockefeller Foundation, US/ DFID-Department For International Development	International Workshop on “Sustainable and Climate Resilient Urban Development”.
		Climate vulnerability of Cities.
3.	Friedrich Ebert Stiftung (Foundation) (FES)	International conference “A Global Green New Deal? – Towards Green Energy Policies for Sustainable Development”
4.	World Energy Council- Indian Member Committee (WEC-IMC)	A public lecture by Lord Professor Nicholas Stern on “Economics, Ethics and Climate Change”
5.	The World Bank	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	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)	Pre-feasibility study of integrated waste management, landfill gas recovery and utilization at Puducherry, India
8.	CCAP-Centre for Clean Air Policy, USA	Analysis of GHG Emissions for Major Sectors in India: Opportunities and Strategies for Mitigation
9.	ENERGIA, Netherlands	Gender Audit of National Energy Policy in India
		National Stakeholder Consultation: Gender issues, MDG and Poverty alleviation for CSD 14
10.	Small Grants Project Global Environment Facility, GEF	Long term Sustainability of Biomass based Energy System in Gujarat
11.	Petroleum Federation of India, New Delhi	Integrated Study of Diesel Substitutes from Oil Seeds in India
12.	Stanford University, USA	A political economy analysis of demand for natural gas in the Indian fertilizer sector
		National Consequences of Electricity pricing reforms on agriculture

No.	Name of the Organization	Projects
13.	Price Water House Coopers	Projection for Petroleum Products, Natural Gas and substitutes up to 2030
		ENVISION- Information Systems Reforms at the Ministry of Environment & Forests
14.	Wuppertal Institute for Climate, Environment and Energy (WISIONS), Germany	Rural Micro-Enterprise Model for Bio-fuel Extraction in India at Bawal, Haryana.
15.	Self Employed Women Association (SEWA), Gujarat	Preparation of energy activities and Pilot Demonstration Project on Renewable
16.	United Nations Environmental Programme	Training Session on capacity Building-Environment, Trade & Sustainable Development
17.	Institute of Global Environmental Strategies, Japan	Opportunities for Energy Efficiency and Clean Development Mechanism (CDM) in Cement and Building Materials
18.	Institute for Social and Environmental Transition (ISET)	Asian City Climate Change Resilience Network
19.	Stanford University, California, USA	Energy Policy Reforms on Agriculture in India: A General Equilibrium Approach
20.	Centennial Group, USA	Study on Agriculture 2040
21.	ETC Foundation, Netherlands	Establishing Inter-Ministerial linkages to address energy accessibility to poor woman in rural and urban areas (ENERGIA)
22.	UNDP-United Nations Development Programme	Climate Change and Gender
		International Training Workshop at Colombo, Sri Lanka
23.	Center for European Policy Studies (CEPS)	Role Of Sectoral Approach In Implementing GHG Mitigation Action In India
24.	Practical Action, Nepal	Gender Network - CCA E-learning from Latin America

### MAP OF INDIA WITH SITES OF IRADe PROJECTS

- 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 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



## INTEGRATED RESEARCH AND ACTION FOR DEVELOPMENT (IRADe)

### BACKGROUND AND FOUNDING OF THE SOCIETY

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 of a network among various stakeholders. 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 effectiveness of governance of technological 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 for inclusive developments at the local and global levels.
- To promote research that supports developing countries for development and also to negotiate international agreements in a better way.

### THE KEY PROGRAMME AREAS ARE:

- Energy and Power System (EPS)
- Urban Infrastructure and Services (UIS)
- Climate Change and Environment (CCE)
- Poverty Alleviation and Gender (PAG)
- To link with ground level observations by action research and by monitoring and evaluating development programmes
- Agriculture and Food Security (AFS)

Our activities in the above areas have cross-cutting themes such as technology assessment and policy reforms. The key activities are:

- Action Research, Training, Monitoring and Evaluation

- Research and Analysis for Decision Support
- Action Research in Monitoring and Evaluation
- Training and Capacity Building
- Policy Advocacy and Knowledge Dissemination

### RECOGNITION 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 is designated as the 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**

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 of a network among various stakeholders. IRADe focuses on research and effective action through multi-disciplinary and multi-stakeholder research, which provides implementable solutions for sustainable development and policy research that accounts for the effective governance of techno-economic and socio-cultural issues. IRADe networks with the government, ministries/departments, international organizations, the public and private sectors, 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, Ministry of Earth Sciences, Department of Science and Technology, Central Statistical Organization under Ministry of Statistics and Programme Implementation, TIFAC, etc. for many national level projects. At the international level, IRADe has worked with Stanford University, California and United States Environmental Protection Agency (USEPA), USA; Wuppertal Institute for Climate, Environment and Energy, WISION-Germany, GIZ (Deutsche Gesellschaft fuer Internationale Zusammenarbeit), Germany; UNDP-GEF-SGP; ENERGIA-International Network for Gender and Sustainable Energy, Netherlands; British High Commission; International Institute for Applied Systems Analysis (IIASA), Austria, etc. IRADe has collaborated with private sector and multinational organizations and NGOs such as SEWA, Petroleum Federation of India, PricewaterhouseCoopers, ICF International, Rockefeller Foundation, LSE, IEF, Institute for Social and Environmental Transition

(ISET), Center for Clean Air Policy (CCAP) Shakti Foundation among others.

IRADe carries out monitoring and evaluation work for Rajiv Gandhi Grameen Vidyut Yojana (RGGVY) for rural electrification. It has done pioneering work in the area of Natural Resource Accounting (NRA) in general, and for Goa and Andhra Pradesh, specifically; climate adaptation for Ministry of Earth Sciences; and low carbon strategy for inclusive growth for Department for International Development (DFID),UK.

### **FOUNDING MEMBERS THE GOVERNING COUNCIL**

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Professor Jyoti Parikh (Executive Director) Specialist: Energy & Environment

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Mr. R. A. Mashelkar, Director General, CSIR

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