

## POLICY DIALOGUE ON ENVIRONMENT AND CLIMATE CHANGE | Odisha Chapter |

Sustainable development and climate protection are high up on the political agenda in India. Climate change has become an important policy concern as citizens show significant awareness about it. Further, India declared its NDC goals for 2030 in COP 2015 meeting and ratified the same in October 2016. Policy measures at state level are critical for India to attain its NDC targets. Most of the states in India have defined their state action plan for climate change between years 2011 to 2015. If the states rely only on old style Command and Control (C&C) policies, targets may not be reached in time.

IRADe is currently working on a project funded by MacArthur Foundation to formulate and suggest market based solutions and business models for state level implementation to reduce CO2 emissions and increase the share of renewables. Many energy intensive sectors viz. power, agriculture, and transport require state level measures. Effective state actions consistent with national plan are needed particularly in sectors which are likely to grow rapidly by 2030.

IRADe has been actively working in the areas of Climate Change and Health, Disaster Resilience and Sustainable Urban Development. IRADe is conducting a project support by IDRC Canada for Bhubaneswar city in close collaboration with Orissa State Disaster Management Authority (OSDMA) and Indian Institute of Public Health (IIPH) Bhubaneswar to develop Heat Stress Action Plan for Bhubaneswar city to support medium-term development planning on adaptive resilience for the agenda of climate resilient smart cities.

IRADe is about to complete a study title “Assessment of food security and livelihood due to climate change in Uttar Pradesh, Himachal Pradesh and Odisha” a contribution to preparation of India’s “Third National Communication” (TNC) and other new information to the UNFCCC by Ministry of Environment Forest and Climate Change (MoEFCC). The study assesses the impacts of climate change at regional level for the short (2030), medium (2050) and long term (2080) on India’s food security and livelihoods.

IRADe entered its 15th year in 2018. IRADe in its journey has actively conducted research and policy analysis for the state of Odisha in the face of Climate Change, Energy & Environment, and Resilient Urban Development & Agriculture in collaboration involving varied stakeholders; state institutions, urban local bodies, NGOs and research institutions. To commemorate 15 years of our achievement we would like to hold a two-day workshop entitled “**Policy Dialogue on Environment and Climate Change**” in **Bhubaneswar, Odisha** on **29<sup>th</sup> January-30<sup>th</sup> January**. The workshop will gather stakeholders view on the ongoing study and showcase the result of past studies carried out for Odisha. The workshop will facilitate broader discussion and engage diversified groups into important aspects of the findings and to understand their experience and point of view. This will bring new dimensions and help to strengthen the strategic framework to formulate business models to achieve India’s NDCs.

The agenda for the Policy Dialogue follows:

<b>Policy Dialogue on Environment and Climate Change Odisha Chapter</b>	
<b>Agenda Day 1: MOBILISING ODISHA FOR ACHIEVING NDC</b>	
<b>9:45 – 11:00 AM</b>	Session I: Inaugural
<b>11:00 -12:45 PM</b>	Session II: Innovations and Interventions in Energy and Power sector to meet NDC’s target
<b>13:45-15:25 PM</b>	Session III: Energy efficient transport system to reduce emission
<b>15:25-17:05 PM</b>	Session IV: Promoting use of solar water pump in agriculture sector
<b>Agenda Day 2: IMPACT OF CLIMATE CHANGE IN ODISHA</b>	
<b>9:45-11:00 AM</b>	Session V: Climate Change and Human Health
<b>11:00-12:45 PM</b>	Session VI: Building Urban Disaster and Climate Resilience
<b>13:45-15:25 PM</b>	Session VII: Climate Change Impacts, Vulnerability and Adaptation: Food security and livelihood

## About IRADe

IRADe is an independent advanced research institute and a think tank which conducts research and policy analysis in different thematic areas including; energy, climate change, urban development, poverty, gender equity, agriculture and food security. For more information please refer to the link <http://www.irade.org/IRADeBrochure.pdf>

IRADe has completed 15 years. Through this journey, while handling numerous projects, contributing to a variety of publications and engagements with stakeholders, we have seen an overwhelming growth as an organization. Since inception we have provided decision support to eleven ministries in India and have concluded 110 plus projects that span from research projects to preparation of policy briefs. We have successfully increased our geographical footprints in India and the South-Asian region: 32 cities across 19 Indian states including the state of Odisha (refer to the below list of projects in to know more about our work in the state), Nepal, Bhutan, Bangladesh and Sri Lanka (for more information please refer the link; <http://www.irade.org/IRADe%20Highlights.pdf>). IRADe's Asia Centre for Sustainable Development has carried out policy research for enabling socio-economic growth and charting pathways for sustainable development in South-Asia.

IRADe has provided inputs using an activity analysis model for alternative low carbon pathways until 2030 and 2050 that helped in formulating India's nationally determined contributions (NDCs) and Climate Policies. Through our analytical reports, inputs on negotiating positions, arguments and policy suggestions to ensure equity principles, we have successfully created a niche in South-Asia think tanks on climate issues. IRADe is recognized by the Ministry of Housing and Urban Affairs as a 'Centre of Excellence (CoE) for urban development and climate change' and has been working in the areas of climate resilient urban development, disaster risk reduction, health impacts and urban infrastructure.

S.No	Project Title	Supported By	Duration
1.	Enabling state level strategic actions for India's NDC – study for Assam, Gujarat and Odisha	MacArthur Foundation, USA	2018-21
2	Climate Adaptive Action plans to manage Heat Stress in Indian cities - Bhubaneswar	International Development Research Centre (IDRC), Canada	2017-20
3	Assessment of food security and livelihoods due to climate change in Uttar Pradesh, Himachal Pradesh and Odisha	Ministry of Environment and Forests and Climate Change, GoI	2016-18
4	Sustainable and Disaster resilience of 10 cities – Bhubaneswar	Ministry of Housing and Urban Affairs (MoHUA), GoI	2013-14
5	City Disaster Management Plans of Six Cities – Bhubaneswar	United Nations Development Program	2013
6	Climate Resilient Urban Development: Vulnerability Profiles of 20 Indian Cities- Bhubaneswar and Puri City	Rockefeller Foundation, US	2011-12

## Draft Agenda

### Policy Dialogue on Environment and Climate Change

#### | Odisha Chapter|

on

29th – 30th January, 2019

at Swosti Grand, 103, Janpath, Bhubaneswar

DAY 1 : MOBILISING ODISHA FOR ACHIEVING NDC		
9:00 -9:45 AM	Registration	
9:45 – 11:00	Session I – Inaugural	
9:45 - 10:00	Welcome Address	Prof. Jyoti K Parikh, Executive Director, IRADe
10:00 – 10:15	Special Address	Padmja Mishra –Vice- Chancellor, Rama Devi University, Bhubaneswar
10:15 -10:30	Special Address	Dr. Saurabh Garg- Principle Secretary- Department of Agriculture, Government of Odisha
10:30- 10:45	Key Note Address	Mr. Hemant Sharma, Commissioner Cum Secretary, Department of Energy, Odisha
10:45- 11:00	Special Remarks	MacArthur Foundation
11:00 – 11:15	Group Photograph & Tea Break	
11:15 – 12:45	<p><b>Session II- Mobilising Energy and Power sector to meet NDCs (Nationally Determined Contributions) targets</b></p> <p>To meet the NDCs target a rapid reduction in emissions from the consumption and production of energy will be necessary. To transition to low-carbon energy systems, renewable energy sources need to replace carbon-intensive sources, alongside improved efficiency in the consumption and production of energy.</p> <p>Renewable Purchase Obligation (RPO) a Central government led C&amp;C not working. Lack of reliability of grid based power supplies in many parts also lead to use of other polluting energy sources. Given this background this session aims to discuss and deliberate on:</p> <ul style="list-style-type: none"> <li>• Increasing share of Renewable (RE) in generation mix by examining the current and immediate future energy mix up to 2030</li> <li>• Comprehensive analysis of Energy Efficiency (EE) in power systems</li> <li>• Reducing T &amp; D and Auxiliary losses, incentive for modernization</li> <li>• Analysis of RPO targets met by DISCOMs in the past and reasons for their non-performance in meeting targets</li> <li>• Increasing reliability of the power system to eliminate use of diesel based generator backups</li> </ul> <p>Sectoral power demand and growth pattern</p>	
	<b>Session Chair</b>	<b>Mr. Siba Prasad Das</b> Deputy Secretary Energy, Govt. of Odisha
	<b>Theme Context ( 10-15 Minutes)</b>	<ul style="list-style-type: none"> <li>• IRADe presentation on “Mobilising Energy and Power sector to meet NDC’s target”</li> </ul>

	<p><b>Remarks by Panelists (About 7-10 Minutes Each)</b></p> <ul style="list-style-type: none"> <li>• Er. Purnendu Sekhar Sahu <b>Chief Load Despatcher, SLDC Orissa</b></li> <li>• Dr. Subhransu Ranjan Samantaray <b>IIT, Bhubaneswar</b></li> <li>• Sri Ashok Kumar Samantaray <b>Sr. GM (RA &amp; T, Research, Policy), GRIDCO</b></li> </ul>
	<b>Open Discussion (10-15 min)</b>
<b>12:45- 13:30</b>	<b>Lunch</b>
<b>13:30: 15:00</b>	<p><b>Session III- Energy efficient transport systems to reduce emissions</b> Transport demand in India has been growing rapidly. To reduce emission intensity, use of non-motorized and public transport (buses, metros) needs to be promoted at state and city level. Also with economic growth, ownership of motorized vehicles grows within an economy.</p> <p>The falling cost of batteries is expected to reduce the cost difference between a BEV (Battery Electric Vehicle) and an equivalent conventional subcompact car will embolden BEV adoption. A suitable market based strategy and an incentive program design support to achieve desired mix of conventional vs BE vehicle. Given this background this session aims to discuss and deliberate on:</p> <ul style="list-style-type: none"> <li>• Transport sector policy: penetration of Mass Transit in cities such as Metro, Bus etc.</li> <li>• Current fleet performance and future growth of the transport fleet by 2030</li> <li>• Transport scenario of conventional vs BEV mix upto 2030</li> <li>• Market based strategy for reducing the cost of EV through business models such as battery ownership by third parties, battery swapping options, etc.</li> </ul>
	<p><b>Session Chair</b></p> <ul style="list-style-type: none"> <li>• <b>Mr. C. R Rao</b> OTES-I, Joint Comm. Transport, Odisha Motor Vehicle Department</li> </ul>
	<p><b>Theme Context (10-15 min)</b></p> <ul style="list-style-type: none"> <li>• IRADe presentation on <b>“Energy efficient transport system to reduce emission”</b></li> </ul>
	<p><b>Remarks by Panelist (7-10 mins. each)</b></p> <ul style="list-style-type: none"> <li>• <b>Shri D.K. Upadhyaya</b> Manager Technical, Urban Transport (CRUT), Bhubaneswar.</li> <li>• <b>Prof. Mayank Dubey,</b> Assistant Professor, Urban Management &amp; Governance</li> <li>• <b>Nihar Ranjan Sahoo</b> Sr. Env. Engineer, L-I, State Pollution Control Board</li> <li>• <b>Amir Kumar Pattanaik,</b> DGM(T), I/C, Odisha State Road Transportation</li> </ul>
	<b>Open Discussion (10-15 minutes)</b>
<b>15:00 : 16:30</b>	<p><b>Session IV- Promoting use of solar water pump in agriculture sector</b> The majority of water pumps used today are either grid-connected or run on diesel. However, remote, off-grid areas, the rising prices of diesel, as well as the environmental implications of its usage, raise several questions over the efficacy of these traditionally-powered pumps. As investment costs for solar powered irrigation pump (SPIP) are coming down and subsidy schemes for SPIS are being rolled out, solar technologies are becoming a viable option for both large and small-scale farmers.</p>

	<p>SPIP will make farmers independent of grid supply and also enable them to sell surplus solar power generated to DISCOM and get extra income. Given this background this session aims to discuss and deliberate on:</p> <ul style="list-style-type: none"> <li>• Cropping patterns and irrigation pumps by types to assess the potential of solar pumps</li> <li>• Adoption of solar irrigation by farmers and the amount of surplus power that would be available to sell</li> <li>• Price for electricity sale that would make solar pumping an attractive proposition to farmers</li> <li>• Financial mechanism that will provide capital to farmers and subsidy to DISCOMs</li> </ul>	
	<b>Session Chair</b>	<b>Prof M.K. Mohanty</b> College of Agricultural Engineering and Technology
	<b>Theme Context ( 10-15 Minutes)</b>	<ul style="list-style-type: none"> <li>• Mr. Chandrashekhar Singh Sr. Research Analyst, IRADe</li> </ul>
	Remarks by Panelists ( About 7-10 Minutes Each)	<ul style="list-style-type: none"> <li>• <b>NABARD, Bhubaneswar</b></li> <li>• <b>Dr Srijit Mishra</b> Director, Nabakrushna Choudhury Centre for Development Studies, Bhubaneswar</li> <li>• <b>Er. K. P. Koner</b> Deputy Director (Tech.), Odisha Renewable Energy Development Agency</li> </ul>
	<b>Open Discussion_(10-15 minutes)</b>	
<b>16:30 : 16:45</b>	<b>Closing Remarks</b>	<b>Prof. Kirit Parikh, Chairman, IRADe</b>

**DAY 2: IMPACT OF CLIMATE CHANGE IN ODISHA**

<b>9:45 : 11:00</b>	<p><b>Session V- Climate Change and Human Health</b></p> <p>The changing climate affects social and environmental factors of health like clean air, safe drinking water, sufficient food and secured shelter. As per WHO assessment Climate Change is expected to cause approximately 2,50,000 additional deaths per year between 2030 and 2050, from malnutrition, malaria, diarrhea and heat stress.</p> <p>India has experienced heat wave incidences, since 2006, 2017 witnessed the 4th consecutive heat wave in India out of which the year 2016 had the deadliest heatwave. Heatwaves in India took a large number of deaths in 4 years (2014-2017) experiencing a loss of 4,500 lives. Of the various natural disasters unleashed on Bhubaneswar, heat waves have emerged as recurring threat, which is getting exacerbated due to increasing urbanization. In 2016, India Meteorological Department (IMD) had issued severe heat wave warning in coastal Odisha. Bhubaneswar was recorded as one of the hottest places in the state with temperature rising to 45.3°C.</p> <p>IRADe is conducting a study in Bhubaneswar city in close collaboration with OSDMA and IIPH-Bhubaneswar to assess the impact of heat stress on the health, livelihood and productivity of the people. The study aims to improve people’s resilience to heat stress, reduce cost of adaptation and impacts on the health of women and men and develop city level Heat Stress Action Plans that are gender sensitive and support medium-term development planning on adaptive resilience for climate resilient smart cities agenda. This session aims to discuss and deliberate on:</p> <ul style="list-style-type: none"> <li>• Impact of Heat on health &amp; productivity of vulnerable populations</li> <li>• Findings from the surveys conducted in Heat stressed hot-spots of Bhubaneswar City</li> <li>• Framework for gender sensitive Heat Stress Action Plan for Odisha</li> </ul>	
	<p><b>Session chair</b></p>	<p><b>Dr. Kirit Parikh,</b>  <b>Chairman, IRADe</b></p>
	<p><b>Theme Context (10-15 min)</b></p>	<p><b>Mr. Rohit Magotra, Deputy Director, IRADe</b>  <b>Dr. Bhupatra Panda, Associate Professor, IIPH-B</b></p> <ul style="list-style-type: none"> <li>• <i>Heat Stress Impacts and Adaptation policies</i></li> </ul>
	<p><b>Remarks by Panelist (7-10 mins. each)</b></p>	<ul style="list-style-type: none"> <li>• <b>Dr. Ajit Tyagi</b>            Senior Advisor IRADe</li> <li>• <b>Mr. Ramesh Chandra Panda</b>            Director, Vital Statistics, Odisha</li> <li>• <b>Dr. Pradeep K Nayak</b>            Chief General Manager, OSDMA</li> <li>• <b>Mr. Sudarsan Das,</b>            Managing Trustee, HDF-cDAR</li> <li>• <b>Dr. S C Sahoo</b>            Director Centre for Environment &amp; Climate, SOA University</li> </ul>
	<p><b>Open Discussion (10-15 minutes)</b></p>	
	<p><b>Closing remarks by Session Co-Chair</b></p>	<p><b>Dr. Anindya Chatterjee</b>            Regional Director, Asia Regional Office, IDRC</p>
<b>11:00 : 12:45</b>	<p><b>Session VI: Building Urban Disaster and Climate Resilience</b></p>	

<p>The unplanned urbanization in India has been a challenge in itself, increasing the vulnerability of cities to natural disasters and man-made hazards. In absence of appropriate strategies for addressing impacts the suffering of the cities can be colossal, which calls for the need of systemic response that looks at building the resilience of cities through policy, engineering, design and technical solutions.</p> <p>IRADe being a Centre of Excellence on Urban development and Climate Change has been actively working in the areas of Climate Change and Urban Resilience, Disaster Management &amp; Vulnerability Assessment, Smart Cities and Sustainable Urban Development. Through various projects and initiatives IRADe is furthering the agenda of integrating various urban development efforts and documenting best practices and policy level prescriptions that could be understood and adopted by the state and national level decision makers and local administrations to help them link climate and Disaster Risk issues with the existing programmes in urban development. This session aims to discuss and deliberate on:</p> <ul style="list-style-type: none"> <li>• Lessons Learnt by IRADe through various case studies – challenges and solutions</li> <li>• Capacity building initiatives for Urban Local Bodies for preparedness</li> <li>• Way forward and sectoral recommendations for Integrating disaster &amp; climate resilience through city master /smart city development plans</li> </ul>	
<p><b>Session Chair</b></p>	<p><b>Prof. Jyoti Parikh</b> Exe. Director, IRADe</p>
<p><b>Theme Context ( 10-15 Minutes)</b></p>	<p><b>Mr. Rohit Magotra</b>, Deputy Director, IRADe <b>Ms. Asha Kaushik</b>, Sr. Research Associate, IRADe <b>Presentation on:</b></p> <ul style="list-style-type: none"> <li>• <i>Integrating Disaster Resilience in Smart Cities: Case study of Bhubaneshwar city; Supported by Ministry of Housing and Urban Affairs (MoHUA)</i></li> <li>• <i>Urban Climate Vulnerability Index; Supported by Ministry of Environment, Forestry and Climate Change (MoEFCC)</i></li> </ul>
<p>Remarks by Panelists ( About 7-10 Minutes Each)</p>	<ul style="list-style-type: none"> <li>• <b>Prof U C Mohanty</b> IIT Bhubaneshwar</li> <li>• <b>Mr. H R Biswas</b> Sci-E, Head Meteorological Centre Bhubaneswar</li> <li>• <b>Dr. Aurobindo Behera</b> Ex- MD, OSDMA</li> <li>• <b>B. N. Mishra</b> GIS expert &amp; environment specialist, OSDMA</li> <li>• <b>Ms. Abha Mishra</b>, Head of office-Odisha, United Nations Development Programme</li> <li>• <b>Dr. Amarendra Das</b>, Reader F [Economics], National Institute of Science Education and Research</li> </ul>
<p><b>Open Discussion (10-15 minutes)</b></p>	
<p><b>12: 45 : 13:45 Lunch</b></p>	
<p><b>13:45 : 15:25 Session VII - Climate Change Impacts, Vulnerability and Adaptation: Food security and livelihood</b></p>	

The consequences of climate change for agriculture in India is of serious concern. It is generally accepted that climate change will alter the pattern of temperature and water in the country. In addition, these changes will vary across the country and will affect agriculture in different ways from district to district. To understand the spatially disaggregated impact of climate change we need to assess the changes in climate parameters first at districts level and then establish relationship between crop yields and climate parameters.

Given a majority of families, in both the farm and non-farm sectors, derive their livelihoods from agriculture, sustainability of agriculture cannot be discussed or even defined in isolation of the issue of livelihoods. Government is running several programmes for and practices in sync with local needs to reduce rural livelihood vulnerabilities with the changing climate. With this background this session aims to discuss and deliberate on:

- Impacts of climate change at regional level for the period 2030s, 2050s, and 2080s on Food security and Livelihoods
- Vulnerability map and indices for major crops at regional/sub-regional level/state level
- Integrated vulnerability assessment of food security and associated livelihoods
- Existing developmental policies, programs and practices for adaptation in the food and livelihood sector
- Strategies for mainstreaming adaptation in flagship programs of Govt. of India and state governments such as NREGA, Afforestation, Watershed, Irrigation

<b>Session Chair</b>	<ul style="list-style-type: none"> <li>• <b>Shri A Chandrasekhar</b> Chief General Manager, NABARD</li> </ul>
<b>Theme Context (10-15 min)</b>	<ul style="list-style-type: none"> <li>• <b>Mr. Chandrashekhar Singh</b> Sr. Research Analyst, IRADe</li> </ul>
<b>Remarks by Panelist (7-10 mins. each)</b>	<ul style="list-style-type: none"> <li>• <b>Dr. Pratap Bhattacharya</b> Senior Scientist, CRRRI</li> <li>• <b>Prof. Siba Sankar Mohanty</b> Utkal University</li> <li>• <b>Mr. Sridhar Nayak</b> Joint Secretary, Rural works Scheme, Government of Odisha</li> </ul>
<b>Open Discussion (10-15 minutes)</b>	