Climate and Development Outlook

Stories of change from CDKN

India Special Edition

PARIS TO MARRAKECH AND BEYOND VIA DELHI

By **Mihir R. Bhatt**, Senior Strategic Advisor, CDKN India, and Director, All India Disaster Mitigation Institute (AIDMI)

It is time to reflect on where we are now, regarding climate compatible development in India. Most roads from Paris to Marrakech and beyond go through Delhi, as India offers practical experience in climate compatible development, as well as knowledge management solutions.

In global terms, India has the highest number of people likely to be living in poverty in 2030, and some of the highest exposure to climate and weather-related hazards, yet also some of the greatest capacity to cope (ODI, 2013)*.

CDKN's work in India since the Paris climate summit (December 2015) includes initiating climate compatible development thinking among districts and city officials, as well as the media. Our programme has focused on effective options to tackle heat waves, finance for a mixed grid, weather attribution for business and science, and planning for the integration of climate concerns in disaster risk reduction. The latter involved a major CDKN presence at the Asian Ministerial Conference on disaster risk reduction, hosted in Delhi in November 2016.

There is growing donor interest in CDKN's work that bolsters the Government of India's initiatives in expanding the use of solar energy; in increased knowledge exchange for implementing Nationally Determined Contributions (NDCs); and in making women central to climate compatible development.

In India, CDKN has worked across wide-ranging and diverse geographies. We have worked with high-altitude communities on climate vulnerability assessment; with small businesses in coastal towns on disaster risk insurance; with district authorities in flood zones on integrating disaster risk reduction in planning; and with city authorities to prepare for life-saving measures during heat waves.

Our achievements so far leads us to ask: what does larger-scale transformation to climate compatible development involve? CDKN in India is currently answering this question with concrete economic, financial and governance-specific knowledge solutions as its work in India expands. It is this knowledge that CDKN India has taken to Bonn, Quito and Marrakech in the past year. Delhi is becoming an important stop for those taking the transformational journey to climate compatible development from Paris to Marrakech and beyond.

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Climate and Development Knowledge Network
Helping developing countries to design and deliver climate compatible development

India's climate and development

The scale of climate compatible development challenges in India is huge as poverty is still widespread. Nonetheless, India has shown a strong belief and commitment in inclusive, greener and resilient growth, as acknowledged in the country's NDC. Together with development programmes, with an emphasis on sectoral actions, this national pledge signals India's sincerity about addressing global climate change issues while confronting the substantial development challenges that lie ahead for the country.

CDKN has been working for India since 2010, creating space for demand-led climate compatible development. We started with action-based research that addressed issues of climate change integration into disaster risk management and development plans. Today, we are recognised for our work in moving from plans to implementation and knowledge networking. We aim to keep our efforts practical and scalable while responding strategically to India's pro-poor and resilience-creating growth scenarios.

With this document, we share and celebrate success stories from our seven-year journey. They include: applying co-benefits approaches in decision-making; piloting business solutions for decentralised rural electrification; future proofing blue-green city infrastructure from extreme heat and other climate-related calamities; integrating gender approaches into climate planning; brokering knowledge and raising risk awareness; and capability development at subnational level for evidence-based resilience planning.

We have also translated some shortcomings into learning experiences. Please explore our extensive resources:
www.cdkn.org/regions/india

"CDKN's work demonstrates that climate compatible development offers great potential for strategic action by governments, civil society and the private sector. There are many win-win benefits as new technologies are disseminated and as new investments are made to boost resilience."

SIMON MAXWELL,
CDKN EXECUTIVE CHAIR

Consultations on India's climate action commitment

The Government of India has decided to implement the Paris Agreement as its development agenda and lead its implementation by example. In response, CDKN India held strategic consultations on implementing Nationally Determined Contributions (NDCs) and opportunities ahead. The consultations focused on: the Himalayan region; coastal India; urban and district planning activities; women's economic empowerment; the green skills agenda; and corporate participation in NDC implementation. The consultations revealed that a wide range of actions are already being taken by Indian citizens, local authorities and civil society organisations. Key opportunities are in the areas where there are co-benefits: including urban water sector; community forestry; energy efficiency in small businesses; construction technology in low income settlements; and renewable energy. This is one of the first wide-ranging consultations that will feed in to national and subnational actions.

TOWARDS INCLUSIVE, GREENER AND RESILIENT GROWTH THROUGH A CO-BENEFITS APPROACH

By **Aditi Paul,** Country Programme Manager, CDKN India

The core values of CDKN India's country programme have always involved mainstreaming climate change into planning and actions, and discovering innovative ways to do so. One methodology, which is gaining increasing acceptance as a means to mainstream climate change and operationalise co-benefits, is multi-criteria decision analysis (MCDA). MCDA refers to a suite of tools or methodologies that can be used to identify and assess multiple benefits and trade-offs during various stages of policy selection by bringing relevant stakeholders on board to rank these objectives and thereby policy solutions.

Intended NDCs provide an opportunity to examine and enhance such approaches towards a climate compatible development transition in India. CDKN commissioned research, carried out by the Centre for Policy Research, India, in partnership with the International Institute for Applied Systems Analysis, the Energy Research Centre, and Prayas (Energy Group), to investigate how India's NDC can meet its sustainable development objectives while contributing meaningfully to climate change mitigation. The team developed a framework using the MCDA approach to find solutions in the energy sector, and tested the approach in the household cooking and building sectors. Learning from this exercise is now being expanded with support from other development partners.

The policy lessons from the research suggest that "while energy use and emissions will invariably grow (for India), they will do so at a decreasing rate as we 'bend the curve' of emissions by focusing on actions in specific sectors" say Radhika Khosla and her fellow authors in their research briefing. "The MCDA approach is not just relevant for energy planning and mitigation, but climate adaptation actions as well, and if applied consistently could strengthen coherence between India's domestic and international position on climate change which rests on the principle of not compromising development needs."

Applying a similar approach, CDKN commissioned Acclimatise to produce a guidance note on "Selecting and prioritising climate action in Uttarakhand using a multiple-objectives based approach". Based on an evaluation of a number of MCDA approaches that have been developed and tested in specific state and country settings, the guidance can be applied not only by the State of Uttarakhand, but also by other state partners, sectoral and planning departments, and development partners supporting India's climate policies and initiatives.

"There is strong evidence of impressive work done by CDKN in India, and stakeholders consider these results to be important and significant for India to move from plans towards implementation [of climate compatible development]."

INDEPENDENT REVIEW OF CDKN'S INDIA PROGRAMME

POTENTIAL OF THE PRIVATE SECTOR IN CLIMATE COMPATIBLE DEVELOPMENT

CDKN's business partnership initiatives seek to encourage and facilitate business-to-business partnerships that increase the knowledge, skills and networks needed for climate compatible goods and services. In India, we have been working to establish the creditworthiness of rural markets that have immense green growth potential. The private sector has tremendous potential to improve the living conditions of the rural poor by creating sources of income at scale. Our experience suggests that there is no single, potent formula for success – the solution needs to be carefully crafted to the context and the opportunity. The following story describes a new breed of entrepreneurs who are set to transform the rural landscape.

Micro-franchising for Sustainable Rural Electrification (M-SuRE)

Even as India continues to intensify its efforts towards energy access, around 240 million people in the country still lack access to reliable electricity, resulting in local entrepreneurs operating diesel generators and rudimentary micro-grids.

The M-SuRe project, launched as a pilot programme in 2014, was the brainchild of TARA and cKinetics (collectively operating as the franchisor). They developed a franchising approach that simultaneously addressed two problems – ensuring a consistent conduit between rural renewable energy operators and lenders from the market, and supporting sustainable livelihoods for rural entrepreneurs. The franchisors established four such renewable energy pilot projects, which now light 500 homes. Three different business and engagement models were tested in unelectrified villages of Bihar and Uttar Pradesh, and tailored to the needs of rural entrepreneurs and the realities of users' situations.

Sixty tons of CO_2 emissions are being avoided annually from four of the pilot sites, which provides a strong link to India's NDC and supports the country's target of 200 gigawatts of new renewable power capacity by 2030.

Scaling up private sector financing for energy access

While demonstrating successful business models, we also learned that the lack of capital, particularly the lack of credit, is seen as a key barrier to scaling up these proven models. We launched a strategic investigation to determine the bottlenecks to lending, involving dialogues with key informants from the economic sector, financial institutions and international development partners. We looked at the nature and cost of credit; the stringent conditions for borrowing in the absence of credit history; and lenders' perceptions of high risk.

The stakeholders agreed that the potential for loan guarantees plays an 'unlocking' role and increases lenders' participation and confidence customers seeking loans for renewable energy technologies. However, such guarantees need to be structured flexibly to allow borrowers' credit ratings to be enhanced by removing undiscovered or perceived risks and making their profiles more acceptable to lenders. Learning suggests this can be done through peer-to-peer exchanges and shared-learning dialogues between project developers and investors.

"The prerequisite conditions for loan guarantees to see uptake, be it renewable deployment or energy efficiency, are awareness-building among lenders regarding avenues for de-risking across the value chain of the sector; and continuous monitoring and reflecting on results achieved."

UPENDRA BHATT, CEO, CKINETICS

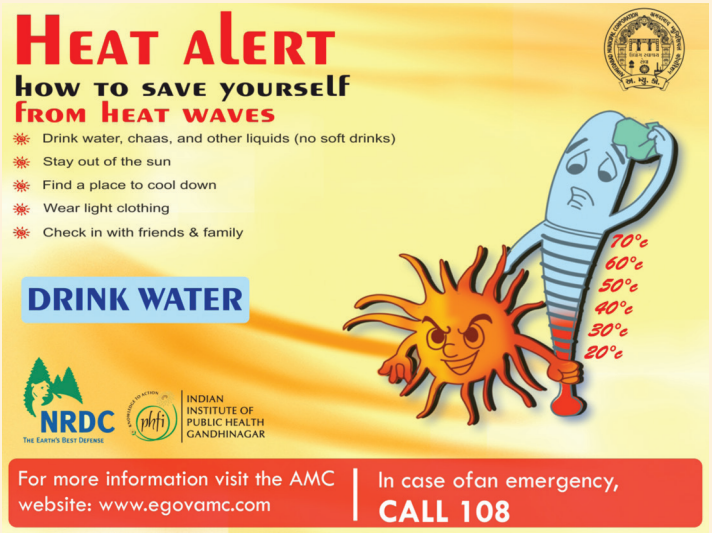
India and France launched an International Solar Alliance at COP21 Paris on 30 November 2015. The alliance includes 120 countries that supported the Declaration on the occasion to launch the international solar alliance of countries dedicated to the promotion of solar energy.

INCREASING RESILIENCE TO EXTREME HEAT ACROSS INDIAN CITIES

Indian cities frequently suffer extreme heat days when the temperature reaches well over 40 degrees Celsius, causing human suffering and too often the loss of life – particularly for young and elderly residents, and workers who toil outdoors. Long-standing support from CDKN has helped a growing number of city administrations to develop effective Heat Action Plans, which are now saving lives.

Following an extreme heat event in May 2010 in Ahmedabad, Gujarat, CDKN invested in research and engagement to put the issue of extreme heat on the agendas of Ahmedabad government leaders; this work was led by the Natural Resources Defense Council in partnership with the Indian Institute of Public Health Gandhinagar and the Public Health Foundation of India. The team demonstrated that a period of high temperatures in the city was correlated with sudden, increased mortality.

By raising wide stakeholder awareness and consulting in an open and participatory way with communities, the team developed an innovative set of risk-reduction strategies, including an early heat-health warning system, set out in the *Ahmedabad Heat Action Plan 2013* (www.nrdc.org/sites/default/files/ahmedabad-heat-action-plan-2016.pdf). It includes such simple but effective measures as alerting vulnerable residents to move from exposed areas during the highest temperatures – such as under tin roofs and in the open sun – to shaded park areas in their cities. Since then, CDKN has been deepening and widening the strategy in other cities and States with India Metrological Department (part of Ministry of Earth Science, India), its chapters and many other development practitioners.



In September 2016, with support from the National Disaster Management Authority (NDMA), the World Health Organization, National Institute of Urban Affairs, and The Rockefeller Foundation, CDKN commissioned TARU Leading Edge to produce a *Roadmap for planning heatwave management in India* (www.preventionweb.net/publications/view/50954), which has the potential to spread successful practices nationwide. During the same period, through the NDMA, the Government of India launched its *Guidelines for preparation of Action Plan – prevention and management of heat-wave* (www.gov.in/images/guidelines/guidelines-heat-wave.pdf), with due recognition of CDKN's work since 2011.

In 2016, CDKN launched the Raising Risk Awareness project with the World Weather Attribution initiative, which aims to discover whether human-induced climate change has contributed to the heat wave events in India. The project uses proven climate modeling methods that can show the role of climate change in specific extreme events. It aims to inform decision-makers whether such heat waves are more likely to happen in the future. The analysis found that:

- consistent with human-caused climate change, annual mean temperatures across India are increasing
- heat waves in a relatively small area of India are becoming more frequent and more intense, but this is not true for most of the country.

More findings from the project are published on the website www.cdkn.org/climaterisk

CDKN and the Natural Resources Defense Council launched a City Resilience Toolkit (www.nrdc.org/sites/default/files/ahmedabad-resilience-toolkit.pdf) at the Paris climate summit in December 2015. The Toolkit includes a how-to manual detailing steps to develop an urban Heat Action Plan based on the Ahmedabad experience.

A new film commissioned by CDKN – 'Beat the Heat' – takes viewers on a journey to Ahmedabad and the successful Heat Action Plan process. It makes compelling viewing for any decision-maker, programme manager or researcher: find the video listed at www.youtube.com/cdknetwork

"The Ahmedabad Heat Action Plan is a necessary step towards protecting our communities from extreme heat and a beautiful model for future climate adaption efforts."

D. THARA,
AHMEDABAD MUNICIPAL COMMISSIONER

CLIMATE COMPATIBLE DEVELOPMENT IN URBAN INDIA

A CDKN initiative has sought to help 'climate proof' the Indian cities of Bangalore and Madurai with blue-green infrastructure. Blue-green infrastructure refers to the intricately networked water systems, including water tanks, rivers, channels, canals and ground water (i.e. the blue infrastructure); and the fundamental ecological infrastructure, including natural habitats, ecosystems and urban green spaces (i.e. the green infrastructure) on which life depends.

This initiative aims to enable cities to respond to climate risks in resource-constrained environments, in ways that reduce urban poverty and catalyse economic development. We have partnered with Atkins UK, University College London, the Development of Humane Action (DHAN) Foundation and the Indian Institute for Human Settlements (IIHS) for this work.

The future-proofing approach offers excellent prospects for shaping smart cities in India. This approach facilitates integration of many issues and opportunities, which can catalyse economic development and achieve multiple goals. The DHAN Foundation has launched a range of initiatives to present the case for using the future-proofing approach to develop Madurai as a smart city. Read more at **www.cdkn.org/resource/inside-story-future-proofing-madurai**

A key message that evolved from the city engagements is that to create better and more widely owned plans, it is essential to involve local partners early in the process. Intermediary people and organisations can build platforms for stakeholder engagement at local levels.

Striking new paths to finance climate compatible development in Gurugram, Puri and other Indian cities

Identifying and accessing ways of financing action on climate compatible development is a struggle familiar to city authorities around the world. Germanwatch, supported by CDKN, has conducted an analysis of international, national and local financing mechanisms and programmes that are suitable for cities such as Gurugram and Puri.

The research suggests crowdfunding as a new co-funding opportunity that involves encouraging citizens to invest in projects selected by them and/or proposed by the city. This financing model also acts as a reality check to see whether proposed measures actually respond to citizens' needs. This creates ownership and strengthens ties between a local government and its citizens.

Underutilised corporate social responsibility funds in India are another way of funding climate compatible development. Businesses lack ideas on what to invest in, giving local governments the opportunity to negotiate with the local private sector on how they could make a local impact with their efforts. Read more at **www.cdkn.org/2016/02/feature-seeking-out-climate-finance-for-resilient-indian-cities**

Reducing resettlement and relocation risk – Puri, a test case

Cities in India are growing faster than planners can cope with. People move in first, then planning follows, if at all. Research by IIHS, University College London's Bartlett Development Planning Unit and the Latin American Social Science Faculty (Facultad Latinoamericana de Ciencias Sociales; FLACSO) aims to arm planners with the knowledge and tools to secure

the most beneficial outcomes from resettlement and relocation programmes. The ongoing research will help to ensure that resettlement policies and programmes enacted to reduce climate-related disaster risk do not inadvertently undermine development progress for the people they are trying to help.

While there have been many learning outcomes from the project, some of the key ones have been around the difficult question of planning for risk reduction and avoidance, particularly in the context of increasing urbanisation and growing climate risks. Read more at **http://cdkn.org/project/reducing-relocation-risk**

Linking the vulnerability and risk assessment for Uttarakhand with policy

Uttarakhand, home to forests, glaciers and important rivers, is vulnerable to climate impacts including increased risk of extreme weather events such as flash floods, landslides and droughts. In 2013, the Government of Uttarakhand requested support from CDKN to develop a climate vulnerability and risk assessment (VRA) with a community focus, identifying clear links between climate impacts and current policies, to help the state focus on the next steps. The initiative produced:

- a district- and block-level VRA covering five sectors – agriculture, water, forestry, human health, and disaster risk – delivered by Integrated Natural Resources Management (INRM) consultants, the Indian Institute of Science, and Geo Climate Risk Solutions
- preliminary participatory rural appraisals in the district hotspots identified by the VRA – delivered by the Central Himalayan Environment Association
- an Agenda for Climate Action linking the VRA impacts and the participatory appraisals with current sectoral objectives, providing a guide to decision-makers on climate resilient development planning – delivered by Acclimatise.

The project has increased the Government of Uttarakhand's capacity to think through climate vulnerability and risk issues, and ways to integrate these into planning processes. The state has now dedicated 1% of its budget to work on VRA issues identified by the project.

STRENGTHENING RESILIENCE THROUGH CLIMATE-RELATED DISASTER RISK MANAGEMENT

Integrating climate change adaptation and climate-related disaster risk reduction into development plans is a 'must'. However, CDKN's seven years of commissioning research on this issue demonstrates that providing decision-makers with written evidence on the need for action is not enough.

In 2011–14, some 15 research teams, funded by a CDKN-START research call, investigated policy innovations, institutional arrangements and governance structures that can promote resilience to disasters. The research investment resulted in significant localised improvements while facilitating communication across administrative scales and local communities, leading to more demand for technical support.

We are currently in a second phase of implementation – scaling-up and deepening our understanding in varied geographical contexts and addressing different learning and capacity needs. For example, the initial investment we made into improving flood risk management in the district of Gorakhpur, Uttar Pradesh, has led to a secondary initiative to spread the Gorakhpur 'shared-learning dialogue' model to 500 district disaster management departments via training modules, some in vernacular languages. The project also produced a roadmap on Prime Minister Narendra Modi's 10 Agenda Points, declared at the Asian Ministerial Conference on disaster risk reduction in November 2016.

In a speech to delegates at that conference, Sam Bickersteth, CDKN's Chief Executive, summarised CDKN's seven years of research and learning. He described the following requirements for climate compatible development and disaster risk reduction to be integrated and progressed effectively:

- We have to build an evidence base and a narrative to [articulate it]. Data can provide a basis for key decision-making.
- What works in practice matters most. Disaster risk reduction is a prosperity and economic issue and hence should be integrated into development.
- Process also matters – in terms of leadership, mandates for action should be co-created with communities. We need to ensure diversity of community, gender issues and marginal groups, and their indigenous knowledge, are well addressed to combat disaster.
- Capability is much needed to cover the deficit of mainstreaming climate change into development planning. We need to change mindsets to integrate climate change and be aware when it gets side-lined.
- The final point is knowledge management – which is a two-way process. Brokering between stakeholders in the right language and in the right context enhances the process.

BUILDING CAPABILITY AND CATALYSING DEBATE

India Film Festival

A 2016 film festival brought climate films and knowledge – with lively facilitated debates about the issues – to different parts of the country. You can find all of these films on CDKN's youtube channel: www.youtube.com/cdknetwork

For a Safer Future

This film documents the "shared learning dialogue" process in Gorakhpur district that has successfully strengthened local communities' resilience to floods and other climatic hazards.

"If a film like this can stimulate an effective discussion, its job is more or less done."

SUNANDAN TIWARI,
ICLEI – LOCAL GOVERNMENTS FOR SUSTAINABILITY

Missing – The forgotten women in India's climate plans

This film shows how women are deeply affected by the impacts of climate change and have great potential to improve their lives and the lives of their families, communities and broader society. Making India's state climate plans more gender sensitive can help women to be more effective agents for positive change.

Beat the heat

Indian cities are suffering increasingly intense heatwaves as a result of climate change: this film traces how heat action plans in Ahmedabad, Gujarat state have paved the way for life-saving approaches to safeguard urban residents, when extreme heat strikes.

The IPCC's Fifth Assessment Report: What's in it for South Asia?

CDKN carried out an outreach programme to bring the findings of the IPCC's Fifth Assessment Report (AR5) to developing country governments and other stakeholders, so that the latest state-of-art climate science could be better incorporated into decision-making. The Knowledge Management team produced a range of guides and communications toolkits for use by stakeholders. The team also organised policy dialogue events with IPCC authors, young scientist meetings and trainings for journalists in India (as well as in Small Island Developing States (SIDS), Africa and Latin America).

READ, VIEW AND SHARE OUR RECENT RESOURCES

The Climate and Development Knowledge Network (CDKN) aims to help decision-makers in developing countries design and deliver climate compatible development. We do this by providing demand-led research and technical assistance, and channeling the best available knowledge on climate change and development to support policy processes at the country and international levels. CDKN is managed by an alliance of five organisations that brings together a wide range of expertise and experience.

RESOURCES ABOUT CLIMATE-RESILIENT DEVELOPMENT POLICIES - AND MORE - ARE ON OUR WEBSITE: WWW.CDKN.ORG

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* A. Shepherd et al. The geography of poverty, disasters and climate extremes in 2030. London: Overseas Development Institute.

CDKN Global
7 More London Riverside
London
SE1 2RT
United Kingdom
+44 (0) 207 212 4111
www.cdkn.org
enquiries@cdkn.org

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