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Envisioning Resilience
Towards Climate Compatible Development

Photo: AIDMI

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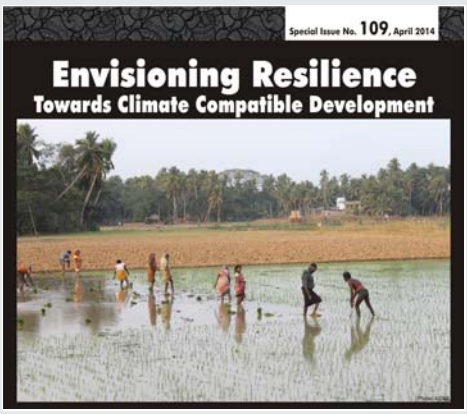
About this issue



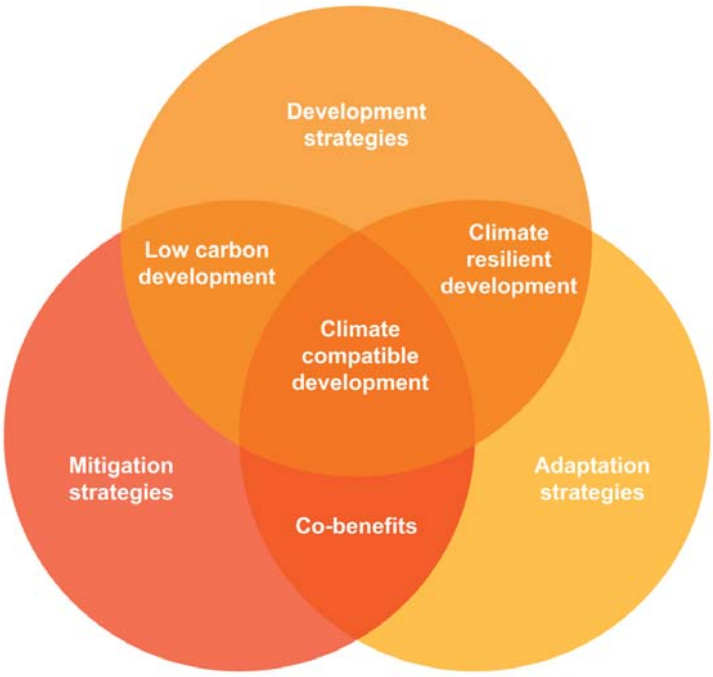
Since time immemorial the risk from natural hazards has been one of the most predominant risks faced by human communities worldwide. Such risks have dictated the evolution of numerous aspects of human civilization like settlement patterns, dwelling structures, mass transportation, etc. However, due to the interplay of a variety of factors such as climate change, burgeoning population, etc. the risks of natural hazards have enhanced and continue with an upward trajectory. But with advances in technology and technical knowledge, novel approaches have also been devised to counteract the emerging risks.

One such approach is the Climate Compatible Development approach. Such an approach tries to address the overlap between climate change adaptation (CCA) and disaster risk reduction (DRR) for the achievement of broad development goals. This issue of Southasiadisasters.net entails an overview of the climate compatible development approach. The main purpose of this issue is to highlight the existing and evolving systems of knowledge that can help in tackling these emerging risks.

This issue contains a rich repository of contributions from highly reputed experts, practitioners and academics from the field of disaster risk reduction and climate change adaptation. It provides a peek into the major currents that would shape the agendas of the field of disaster risk reduction, making it an indispensable advocacy tool to shape the HFA 2 process. ■

INTRODUCTION

Defining Climate Compatible Development



Climate compatible development is development that minimises the harm caused by climate impacts, while maximising the many human development opportunities presented by a low emissions, more resilient, future. Climate change and responses to it are changing patterns of innovation, trade, production, population distribution and risk in complex ways. This is creating a new development landscape for policy makers, who need to nurture and sustain economic growth and social development in the face of multiple threats and uncertainties while also cutting emissions or keeping them low.

In tackling the challenges, climate compatible development moves beyond the traditional separation of adaptation, mitigation and development strategies. Instead it emphasises climate strategies that embrace development goals and development strategies that integrate the threats and opportunities of a changing climate. As a result, it heralds a new generation of development processes that safeguard development from climate impacts (climate resilient development) and reduce or keep emissions low without compromising development goals (low emissions development). Climate compatible development goes one step further by asking policy makers to consider 'triple win' strategies that result in low emissions, build resilience and promote development simultaneously. ■

Source: CDKN Policy Brief, *Defining Climate Compatible Development*, http://r4d.dfid.gov.uk/PDF/Outputs/CDKN/CDKN-CCD-DIGI-MASTER-19NOV.pdf

Addressing Loss and Damage with Micro-insurance

Loss and Damage refers to adverse effects of climate variability and climate change that occur despite global mitigation and local adaptation efforts. In 2012-2013, UNU-EHS coordinated nine case studies that assessed loss and damage in vulnerable communities. This was the first-ever multi-country study of its kind, and included three South Asian case studies (Bangladesh, Bhutan and Nepal, see www.lossanddamage.net). The project yielded important insights in local communities' efforts to avoid climate-related losses and damages, and it showed how and why people's coping and adaptation measures fall short (see Warner and van der Geest, 2013). Below, findings from Bangladesh are summarized. Across the region, micro-insurance could play an important role in making rural households less vulnerable to loss and damage. Timely payouts after hazards strike can prevent people from entering a vicious circle of poverty and increased vulnerability.

Satkhira is a coastal district in Bangladesh. It faces the double threat of sea level rise and cyclones. Both result in saltwater intrusion, which has severe impacts on rice cultivation, the mainstay of the local economy and the principal source of food for the majority of the population. Salinity in soils has increased sharply. Eighty-one per cent of the survey respondents reported high salinity levels in their soils, compared to just two per cent 20 years ago. To adapt to higher salinity, farmers planted new, saline tolerant-rice varieties. This strategy worked reasonably well until 2009, when cyclone Aila hit the area and caused a sudden and drastic increase of salt content in the soil. Almost all farmers in the area lost their complete harvest that year. In the two subsequent years, salinity levels were still too high and rice yields were extremely low (more details in Rabbani et al., 2013). Complete harvest losses and poor yields in three consecutive years were clearly beyond people's capacity to absorb, and this pushed them deeper into poverty, making their livelihoods even more vulnerable than they already were.

Rural households in Nepal experienced similar losses due to flooding (Bauer, 2013), and in Bhutan, farmers were affected by changing monsoon patterns that reduced water availability for rice cultivation (Kusters and Wangdi, 2013). If farmers in these vulnerable communities had access to affordable insurance solutions, some of the most erosive effects on livelihood sustainability could be avoided.

The Munich Climate Insurance Initiative (MCII), hosted at UNU-EHS, studies the potential of micro-insurance to prevent people from falling into extreme poverty when they are hit by climate hazards. MCII initiated a project in the Caribbean piloting insurance solutions for low-income households against excess rainfall and high wind speed. Recently, MCII extended its activities to Pakistan, where it collaborates with the Pakistan National Disaster Risk Authority and the Climate and Development Knowledge Network (CDKN) to explore design options for a disaster risk insurance framework for vulnerable communities (http://www.climate-insurance.org).

Insurance can help manage loss and damage from weather extremes in ways that bolster efforts to achieve climate resilient development. Risk assessment, which is at the core of any insurance solution, can help identify climate stressors, exposures and

Photo: Golam Rabbani

Focus group discussion in Bangladesh.

thresholds and strengthen preparedness. Prudently employing a combination of insurance approaches with risk reduction measures, such as early warning, education, disaster-proof infrastructure and investment in more sustainable livelihoods, reduces societal disruption when extreme weather events happen. Approaches that manage impacts of unexpected extremes can help developing countries and communities create necessary buffers, for example by providing financial liquidity through fast payouts immediately after an event. Further, such approaches can help the international community better plan financial needs for adaptation and managing loss and damage (Warner et al., 2012). ■

Kees van der Geest, Michael Zissener, *and* **Koko Warner**
United Nations University Institute for Environment and Human Security (UNU-EHS)

References (all open access):

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INFORMATION SHARING

Aiding Typhoon Haiyan Victims in Philippines

The American Jewish Joint Distribution Committee (JDC) – which teamed up with the All India Disaster Mitigation Institute to help victims of the 2004 Indian Ocean Tsunami – is aiding survivors of a natural disaster in the region. The world's largest Jewish humanitarian group has so far raised over two million dollars in donations aimed at assisting the Philippines recover from the devastating Typhoon Haiyan, which struck the island nation late last year.

Days after the disaster, JDC provided relief and aid to survivors with fresh water, shelter and medical assistance. In recent months, JDC has begun a long-term rehabilitation phase rebuilding schools, helping individuals return to their livelihoods, and providing targeted Disaster Risk Reduction assistance in regions where few international organizations are operating such as Panay. In line with JDC's global mission, it is reaching out primarily to vulnerable populations impacted by the disaster – women, elderly, children, poor, and people with disabilities.

"We are proud to continue our work in the region ensuring a sense of normalcy and stability in the lives of Typhoon Haiyan survivors," said Judy Amit, Global Director of JDC's International Development Program. "Drawing on our extensive experience working in disaster zones in South Asia, Haiti, Japan, and Turkey, we understand that this is paramount to long-term recovery."

JDC's work focuses on helping locals overcome the psychological trauma they sustained during the disaster. It has deployed a delegation of post-trauma experts from the Israel Trauma Coalition to help locals come to terms with their loss and over the coming months will be working with local agencies and municipalities to train and develop local capacity to help students grapple with trauma.

JDC's work in the Philippines has been part of an international and interfaith effort carried out in cooperation with its partners, including: the IDF Field Hospital, Afya Foundation, Catholic Relief Services, UNICEF, Magen David Adom (MDA), the International Medical Corps (IMC) the Ramon Aboitiz Foundation (RAFI), and Israeli Trauma Coalition, the International Institute for Rural Reconstruction, the Center for Disaster Preparedness.

JDC works in more than 70 nations around the world including India where it supports Jewish life and provides social services to communities in Mumbai, Delhi, Thane, Pune, Kerala, Calcutta, and Ahmedabad. India was a hub of operations for JDC during its response to the 2004 Southeast Asian tsunami when it cooperated with the All India Disaster Mitigation Institute to respond to the needs of those affected by the massive tidal waves. ■

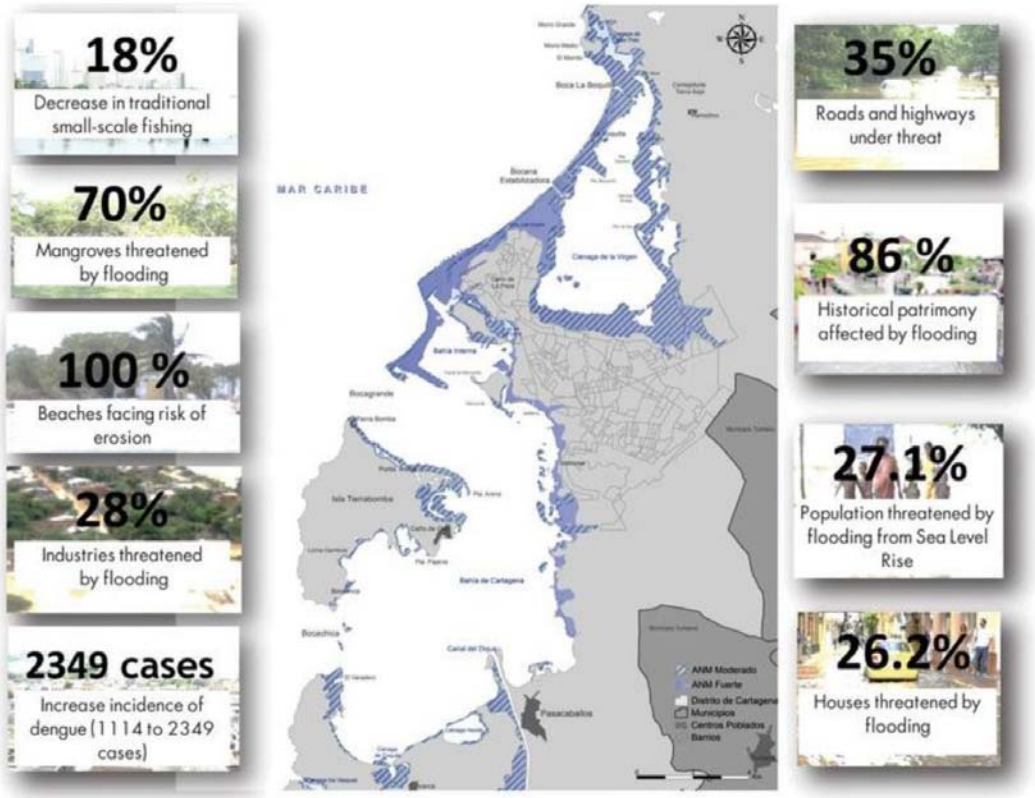
– American Jewish Joint Distribution Committee

Cartagena de Indias: A Pioneer in Becoming a Climate Compatible City

Cartagena de Indias is an iconic Latin American city. It sits on the Caribbean coast of Colombia and has a population of 978,600 people. Cartagena is an important market in the Colombian economy, and stands out for its vitality, driven by tourism, industry and its port, which moves 77.4% of Colombia's maritime cargo. When you visit Cartagena, a city that has been classified as a World Heritage Site, you will step into the Spanish Colonial era and taste the culture of the Caribbean coast; you will also be able to experience the rapture of beautiful beaches and colourful ocean of the surrounding islands.

But beyond the idyllic tourist attractions and its dynamic economy, Cartagena is characterized as one of the most socially unequal cities in Colombia and is marked by high indices of poverty. It is also one of the coastal cities that are most vulnerable to climate risk.[1] In recent years, extreme climate events have brought heavy flooding, coastal erosion, sea level rise, storm surges, and the proliferation of diseases like dengue. These new circumstances have had significant repercussions not only among the most socio-economically vulnerable people who live in high risk areas, but also on the most important economic sectors of the city. Just as an example, during the phenomenon known as La Niña, or the Winter Wave (2010-2011), the port and industrial sectors reported unprecedented losses in earnings and infrastructure. The tourism sector that has been booming in recent years experienced a decline in activities. Climate projections made by INVEMAR in the framework of the Cartagena Vulnerability Assessment, show the tendencies that will become increasingly pronounced from now until 2040, with substantial impacts on the development of the city, competetivity of the economic sector and the capacity to reduce poverty.

As a consequence, climate change and its incumbent risks today and in the near future pose fundamental questions: How can we reduce risks and vulnerability to climate and generate resilience in the city? How can we guarantee that Cartagena



Forecast of climate change impacts in Cartagena (Credit: Vulnerability Assessment of Cartagena, 2012)

1 INVEMAR Study financed by CDKN: "Policy Guidelines for Adaptation to Climate Change", 2012.

Vulnerable small-scale fishermen on the island of Tierra Bomba, Cartagena.

continues to be attractive to investors and remains competitive? More generally, how can we conceive of the advancement of a city that is compatible with the climate realities of the future? In other words, how can we turn a climate threat into an opportunity for development and poverty reduction?

To respond to these questions, the City Hall of Cartagena, in partnership with the Colombian Ministry of the Environment and Sustainable Development, Cartagena's Chamber of Commerce, INVEMAR and the Climate and Development Knowledge Network (CDKN), carried out a study of vulnerability to climate change. The results were published in a Document of Guidelines for Adaptation in 2012, which gave a precise image of current and projected climate risks, and the social, economic and institutional ramifications, based on solid scientific evidence. The study considered climate factors and related elements that interact with climate, such as soil use, urban, demographic and eco-system dynamics, among others. Some of the results were incorporated into the City's Territorial Zoning Plan.

Most importantly, local authorities gained an awareness and understanding of the vulnerabilities, added to their previous experiences with the 'winter wave' and the incumbent risks to competetiviy. It unleashed a participatory and multi-sector process to create an Adaptation Plan with sights set on preparing the city, its surrounding islands and its different economic sectors to face climate change and future climate risks. The Adaptation Plan with its management of climate risks was incorporated as one of the pillars into the new Municipal Development Plan for 2013-2015. The current Mayor of Cartagena has also developed a discourse to give direction to the efforts of different sectors and to make Cartagena a model climate-compatible city. The future development of Cartagena is seen as closely linked to its success in preparing and adapting the city. In the Plan's framework, public-private alliances work to demonstrate early victories and concrete initiatives that are demonstrative and replicable. The city government, with support of CDKN and private investors, is creating a model of a neighbourhood adapted to climate change that seeks to reduce the vulnerability of the poorest communities by promoting resilience and creating new economic opportunities.

Visionaries of Cartagena de Indias have clearly opted to become a climate compatible city, prepared to sustain its level of competetivity in the future, to mitigate climate risks and create innovative solutions to alleviate poverty. ■

– Mathieu Lacoste,
CDKN Communication and Knowledge Management Coordinator for Colombia

Boston neighbourhood where the design and intervention to create the first Adapted Neighbourhood in Colombia will take place.

The Need for a New Cadre of Leaders in the Face of Climate Change

The dramatic images of Typhoon Haiyan and its devastating trail of destruction in the Philippines and parts of South East Asia were a wakeup call. We witnessed human suffering and destruction caused by a climate phenomenon of unprecedented scale.

Typhoon Haiyan was the strongest storm ever to make landfall. Record breaking winds in excess of 300 km/h destroyed 1.2 million homes. Thousands of people perished and millions more lost their livelihoods.[1] In a striking coincidence in Poland, we simultaneously witnessed the failure of another fruitless UN climate change meeting. In spite of the emotional pleas from Naderev Saño, the climate change commissioner for the Philippines, for action to be taken.

Our global society is at a critical junction. The window of opportunity is narrow and time is unfortunately not on our side. While no individual weather event can be blamed with certainty on climate change, each is part of an alarming trend that will only grow worse unless and until we tackle global greenhouse gas emissions and recognise that vulnerable countries such as the Philippines cannot cope with the overwhelming impacts of climate change alone.

Despite all our economic and technological advances in recent years, our economic and political processes are struggling to cope with the magnitude and complexity of the threats posed by climate change. No country, rich or poor, and no economic sector is immune to the effects of climate change and therefore nobody can afford to be complacent. Yet we have been unable to achieve a much needed breakthrough in climate talks and to produce the critical mass of actions that are required to curb the worst impacts of climate change.

We urgently require decisive action and only leadership can get us there. All too often, national interests and short-term economic, political and commercial considerations have stood in the way of urgent and necessary action. Differences in mindset, culture and approaches have seemingly blocked us from developing and acting upon a common vision that addresses the threat, and harnesses the transformative potential of action on climate change.

More than US$ 1 trillion dollars have been invested in clean technologies, with thousands of jobs created in recent years, and this can only be good for our global society. The production of solar panels has decreased by 80 per cent since 2008[2] with the technology becoming increasingly mainstream in many developing nations. In spite of all of its negative effects, climate change is an opportunity for us to reassess our fundamental assumptions about the world we want to live in and how we want to build our future.

Our global society will be transformed by climate change and by the measures taken to deal with it, as well as the mammoth task we face to reduce world poverty and promote human development. Leadership will be, with no doubt, a decisive factor. The new emerging context calls for a new cadre of leaders with a new set of abilities and ways of thinking, from a multitude of fields and at all levels in our society, to respond to those challenges and build the resilience of our natural, economic and political ecosystem that is needed to cope with them.

Back in 1992, my organisation Lead and our global Fellowship programme were established to address the deficit of leaders who could advocate and deliver change across the spectrum of sustainable development. For over 20 years, we built a global a network of change agents which today is active in more than 90 countries worldwide. We've witnessed how individuals are able to challenge conventional ways of creating, learning and being, in order to become major catalysts for change, crossing traditional organisational and industry boundaries.

Decisive action on climate change will require us to recognise our inter-dependency; no country, sector or leader can meet these challenges alone. Over the coming years, we want to use our considerable experience in this vital area to develop the type of leaders who will help us to break down the current silos and barriers and prepare our global society for a rapidly changing world. ■

– Williams Johnson,
Chief Executive Officer,
Lead International, UK

1 MercyCorps: www.mercycorps.org.uk
2 How to win the argument on climate change: a five-point plan. Simon Maxwell, Executive Chair, CDKN. Mar 2014

Education and Research at the Nexus of Disaster Resilience and Climate Adaptation

For many local governments around the world, the ability to adequately address climate change and natural disaster impacts is critical for the continued development of the city. Since most localities are resource and capacity constrained, many international actors have stepped in to offer support for risk and vulnerability assessments, adaptation and resilience planning, project implementation, and programmatic development. In South Asia, notable externally sourced programs include the Rockefeller Foundation's Asian Cities Climate Change Resilience Network (ACCCRN), different initiatives spearheaded by ICLEI-Local Governments for Sustainability, and the Disaster Risk Reduction and Climate Risk Management partnership between the Government of India and the United Nations Development Programme (UNDP). Although these external interventions have provided much needed additional capacities for municipal governments, local economic, political, and social contexts will inevitably shape the effectiveness, sustainability, and equity of these resilience-building interventions. Therefore, as a prerequisite to improving resilience interventions on the ground, one must first understand the theoretical and practical implications of climate and disasters on city planning processes, local political institutions, and urban spatial form.

Education and research at the nexus of climate adaptation, disaster risk management, and urban planning and policymaking are emerging fields of interest across many universities and research institutions. The Massachusetts Institute of Technology (MIT) has been at the forefront of assessing the local impacts of climate change and disasters and designing suitable institutional and spatial strategies for building urban resilience. Within MIT's Department of Urban Studies and Planning (DUSP), a number of students and professors have been engaged in researching climate adaptation and disaster resilience in both developed and developing country contexts.

In particular, DUSP at MIT has a long history of working with a number of North American cities with rehabilitating urban buildings, infrastructures, and institutions after disaster events. These projects include redevelopment and reconstruction in the City of New Orleans after Hurricane Katrina, resilient design and landscape redevelopment initiatives in New York City after Hurricane Sandy, climate change risk and vulnerability assessment processes in the Northeastern U.S. through the New England Climate Adaptation Project (NECAP), and other community resilience development projects through the Resilient Cities Housing Initiative (RCHI).

Elsewhere in the world, DUSP at MIT has engagements in Haiti, where faculty and students are involved in helping the country develop resilient housing and economic infrastructures after the devastating earthquake in 2010, in Malaysia, where a Sustainable Cities Partnership with the Universiti Teknologi Malaysia (UTM) was recently inaugurated, and in Bangladesh, India, and Pakistan, where there are ongoing student-led research projects on building urban resilience. Also, DUSP at MIT has developed long-standing partnerships with transnational networks involved in climate adaptation and disaster resilience. For example, DUSP at MIT partnered with ICLEI—Local Governments for Sustainability to produce a global survey assessing the process of adaptation planning and implementation in nearly 500 cities across the world. Lastly, through the Comprehensive Initiative on Technology Evaluation (CITE) project being supported by U.S. Agency for International Development (USAID), different departments across MIT in addition to DUSP have been tasked to evaluate indigenous and community-based technologies for supporting local livelihoods and resilience.

In terms of curriculum development, DUSP at MIT has introduced courses in urban climate adaptation, disaster resilient design, and housing and economic development for resilient cities. The adaptation course provides students with critical analyses of the concepts of risk, vulnerability, and climate impacts, and delves into particular local sectoral, economic, and social equity planning and decision-making tools. The disaster resilient design course is offered in conjunction with the Department of Architecture, and focuses on understanding and generating specific proposals for disaster resilience through combinations of retrofit, reconstruction, resettlement, commemorative, and anticipatory design.

On top of these many courses, both undergraduate and graduate students have opted to participate in the many research and coursework

opportunities across different departments at MIT, such as through the Department of Architecture, the Technology and Policy Program (TPP), MIT Center for International Studies, and other engineering and natural sciences divisions. Students have also received funding support for international research and project implementation through the MIT International Science and Technology Initiatives (MISTI), MIT Global Education and Career Development (GECD), through the Aga Khan Program for Islamic Architecture, and others.

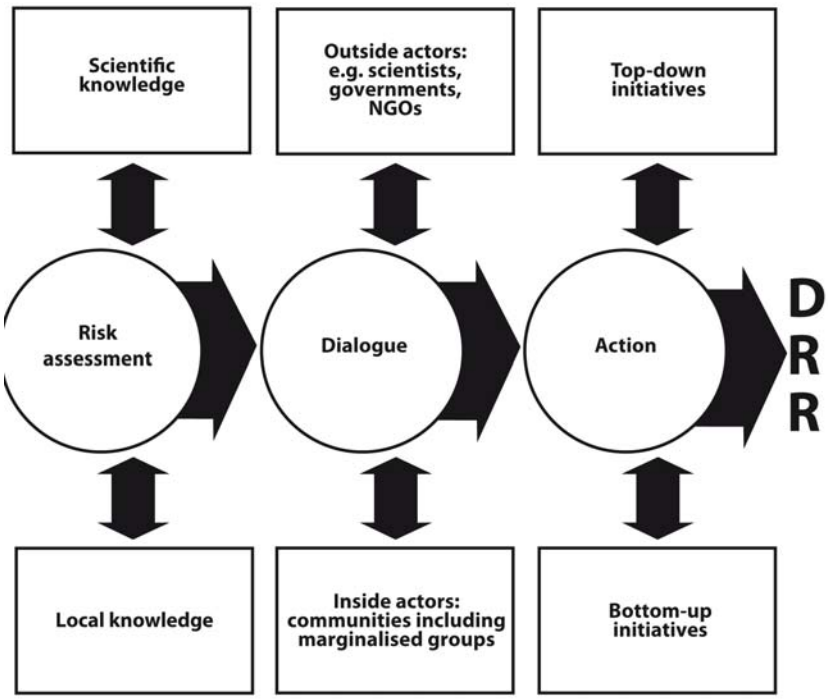
Climate change adaptation and disaster risk reduction are emerging concerns for academics and practitioners alike. The Department of Urban Studies and Planning at MIT has been at the forefront of training researchers and practitioners to address these challenges through the lens of public policy, urban design, and socioeconomic development. The aim is to produce scholar-practitioners who are exceptionally trained in the theories of urban climate and disaster resilience and who are also able to enact meaningful and effective interventions toward adapting to climate impacts and managing disaster risks at the local level. *For more information, visit http://www.dusp.mit.edu.* ■

– Eric Chu, Department of Urban Studies and Planning, Massachusetts Institute of Technology, USA

DISASTER RISK REDUCTION

A Road Map for Disaster Risk Reduction Post-2015

Current discussions on the future of disaster risk reduction (DRR) after 2015 emphasise a long-standing gap between local and national/global priorities and initiatives. On the one hand, most national risk reduction policies still rely on command-and-control and top-down frameworks, which emphasise scientific knowledge and national government intervention. On the other hand, many non-governmental organisations (NGOs) have been advocating for increased involvement of those affected by disasters in DRR though bottom-up, community-based initiatives stressing the importance of local knowledge and resources. In effect, initiatives from the bottom-up and those from the top down are seldom combined in an integrated approach.



Integrating top-down and bottom-up actions is however essential to address both the root causes of people's vulnerability to disasters and enhancing their capacities. Vulnerability reflects people's inability to access resources and means of protection that are available to those with more power. It is rooted in cultural, social, economic and political structures, which mainly lie beyond the reach of those who are vulnerable. Reducing people's vulnerability thus requires profound structural reforms and political will, i.e. actions from the top down. In parallel, enhancing people's capacities largely depend upon actions from the bottom up. Capacities indeed refer to the sets of mostly endogenous knowledge, skills and resources people utilise in dealing with disasters. To address both the root causes of people's vulnerability and enhance their intrinsic capacities, DRR must be inclusive of a large array of stakeholders, including international organisations, governments, scientists, NGOs, and the diverse members of local communities, in order to integrate top-down and bottom-up actions.

Figure suggests a road map to foster integrated and inclusive DRR. It recognises 1) that different forms of knowledge are valuable in addressing disaster risk, including for assessing vulnerability and capacities, 2) that actions from the top down and from the bottom up are necessary to sustainable DRR through both reducing vulnerability and enhancing capacities, and 3) that both previous points require a large array of stakeholders from inside and outside local communities to collaborate and dialogue.

Implementing this road map entails the use of tools that allow all stakeholders to participate in the same activity, around the same table and at the same time in order to foster a fair dialogue amongst all parties. These tools must be trusted by all actors and make local needs and capacities, including local knowledge, tangible to outsiders as well as scientific knowledge and outsiders' actions tangible to local community members. Such tools need to be integrated into disaster risk assessment and reduction frameworks which consider both the root causes of vulnerability and people's capacities, and allow for the integration of bottom-up and top-down actions. Eventually, these frameworks have to be included in states' policies and receive the support of local governments. The institutionalisation of good practices is indeed the only way to achieve large scale results. In this perspective, the post-2015 international framework for DRR has a crucial role to play as it must encourage national governments to move in the right direction. ■

– JC Gaillard
The University of Auckland,
New Zealand
Jessica Mercer,
Secure Futures, United Kingdom

KNOWLEDGE SHARING

Debris Management: Critical for Disaster Management

Introduction

The world has witnessed some of the worst disasters, in the living memory, in the recent past, which includes the Typhoon Haiyan of November 2013 in Philippines, the Great East Japan Earthquake of 2011 and the Indian Ocean tsunami of 2004. These disasters throw challenges in rescue to relief and in debris management to rebuilding lives and livelihoods. The management of debris, which includes building materials, household furnishings, appliances, vegetation and medical waste is of strategic importance as it can impede response and can also lead to secondary disaster For example, the 2011 earthquake in Japan generated approximately 6.16 million tons of debris in Ishinomaki city, which is equal to the waste generated by the city over 103 years (UNEP, 2012). On the other hand, it provides an opportunity for creating employment as in the post-disaster situation employment generation is very important. Also, the optimum usage of the debris can reduce the cost of recovery and reconstruction.

Management of Debris

There have been successful cases of debris management including in India, which provides a number of key lessons. For example, in the aftermath of the Earthquake of 2001 in Gujarat, the debris disposal was managed through two-pronged strategy. The rural households were provided lump-sum money to clear debris while in the four worst-affected urban centers of Kutch district, contractors were engaged to remove debris considering the volume as well as need for specialized team and equipment. Also, government issued simple guidelines on closure of dumping sites in environment friendly manner, management of debris near water bodies and its reuse. In Haiti after the 2010 earthquake, debris were used as fill material for rehabilitation of routes, creating block paving, gabions, etc. In Philippines, in the aftermath of Typhoon Haiyan (locally known as Yolanda) of November 2013, cash for work program for debris disposal has been undertaken and it proved to be successful in creating short-term employment opportunities. These interventions were planned in the aftermath of disasters and hence it took precious time for planning and setting up systems to execute the plan. Also, there was high level of dependence on external agencies for technical expertise, which may not be available in many post-disaster situations. Hence it is important that countries develop their system for debris management.

Way Forward

India is prone to more than 30 hazards and it has taken a number of steps towards risk reduction in last few decades which includes setting up techno-legal region, dedicated authorities to coordinate disaster management and risk sensitive developments. It is important to build on this momentum and take steps towards debris management plan ex-ante for effective and efficient response and recovery. This includes prior identification of the debris disposal sites, guidelines for disposal of different types of debris, system for executing debris disposal, creating a roaster of trained debris management personnel and financial instruments. These debris management plan need to be integrated into the disaster management plan at appropriate administrative levels from national to district and blocks and lastly, it need to be a live plan. ■

– Sudhir Kumar,
Disaster Risk Reduction Specialist,
UNDP, Philippines

HFA 2 in Nepal: Priorities for Action

From the Seven Priority areas for HFA 2 it was decided to focus on 3 priorities, with women as a general concern to be mainstreamed as a cross cutting area.

Key area 1: Building Community Resilience

Key Issues of concern

- o Capacity of community to plan for mitigation and to respond to the disaster is minimal
- o Proven concepts, knowledge and tools in urban/rural context are yet to be shared
- o Integration of community based DRM into local government framework is important
- o Mechanism for monitoring DRM activity at the community level needs to be initiated and strengthened
- o Need of an enhanced role of women in DRM
- o Allocation of resources at local level are not yet strategized

Plan of action

- o Effective engagement of Government at all levels and private sector with community groups is needed
- o Documentation and disseminate best community approaches need to integrated and harmonized with local level DM policies
- o Develop/harmonize tools (risk assessment, risk maps, management planning...)
- o Capacity building on identifying risks, response planning, planning for risk management, and local level implementation has to be integrated
- o Harmonize Risk Sensitive Land Use Planning
- o Sustain/upgrade community based Early Warning Systems
- o Integrating indigenous knowledge
- o Promote the role of women in DRM

Targets

- o Risk assessment maps (multi-hazard risks) developed at national and district level
- o Non-life insurance incorporated into DRM
- o Harmonized risk sensitive land use plans agreed among government agencies
- o Harmonized planning guidelines developed at local levels
- o Mechanisms developed for monitoring and knowledge sharing

Key area 2: Sustainable development, climate change and disaster risk reduction integration

Key Issues of concern

- o DRR & CCA issues are yet to be prioritized by the key decision makers
- o Inadequate collaboration among stakeholders (work in isolation)
- o Lack of assessment tools to identify economic impact of Disaster & Climate Change
- o Little progress in institutional and legal reforms
- o Implementation level linkage between CCA and DRR minimal

Plan of Action

- o Align existing planning process to ensure DRR/CCA integration
- o Enact DRM legislation and fast-track institutional reform
- o Engage private sector in DRM/CCA
- o Establish a Climate/Disaster cell in NPC, or central agencies
- o Enhance joint focal point system
- o More joint actions to ensure integrated planning and budget allocation
- o Endorse climate change adaptation and gender strategy

Targets

- o DRR integrated in national/local planning process
- o DRM act in place
- o Sectoral plans have a clear articulation of CCA/DRM related activities
- o Annual plan at national/local level integrate CCA/DRM and receive funding from the treasury
- o Private sector actively participates in Climate Change Adaptation / disaster management

Key area 3: Strengthening Risk Governance and Accountability

Key Issues

- o Lack of mandatory monitoring mechanism
- o Lack of resource tracking and feedback mechanism
- o Limited bylaw in place for the implementation of DRM
- o Actors are focused in sectoral work in isolation (no proper comprehensive risk governance mechanism and accountability framework)

Plan of Action

- o Proposed legislation Incorporates governance/accountability mechanism
- o Use existing mechanism (CNDRC, DDRC) to ensure authorization for implementation and monitoring
- o Strengthen government oversight
- o Strengthen National DRM platform
- o Separate budget heading for DRM

Targets

- o DRM act implemented
- o Strategic action plans based on response framework is in place
- o NPC effectively monitors DRM in Nepal, mainstreaming task completed
- o National DRM platform strengthened in coordination and information sharing
- o Climate and gender strategy and action plan endorsed, disseminated and implemented.

Source: National DRR Platform, Consultative meeting, Kathmandu, Ministry of Home Affairs, March 28th, 2014 ■

– **Megh Ranjani Rai,** Consultant DRR and Emergency Response, Nepal

How Space Watch on Agro Drought Reduces Disaster Risk

The Food and Agriculture Organization of the United Nations (FAO) is developing the Agriculture Stress Index System (ASIS) to detect agricultural areas with a high likelihood of water stress (drought) at the global level. Based on Earth Observations, ASIS will support the vegetation monitoring activities of the FAO-Global Information and Early Warning System (GIEWS). The idea behind ASIS is to mimic the analysis that a remote sensing expert would do and simplify the results for the end-users. ASIS will provide a map every ten days in which the GIEWS officers detect "hot spots" for every region where crops may be affected by drought during the growth season. To ensure that the system will not produce false alerts due to external factors such as atmospheric perturbations, the officers then verify the "hot spots" with auxiliary information, for example by contacting the Ministry of Agriculture of the affected country or by monitoring prices of the commodities.

ASIS uses the Vegetation Health Index (VHI), which is derived from the Normalized Differenced Vegetation Index (NDVI). VHI was developed at the United States National Environmental Satellite, Data and Information Service (NESDIS) and has successfully been applied in many different environmental conditions around the globe, including in Asia, Africa, Europe, North America and South America. The first step in ASIS is to elaborate temporal average of the VHI assessing the intensity and duration of the dry period(s) occurred during the crop cycle at pixel level. ASIS is based on ten-day satellite data of vegetation and land surface temperature from the METOP-AVHRR sensor at 1 km resolution. The second step is the calculation of the percentage of agricultural area affected by drought (pixels with VHI<35- a value identified as critical in previous studies) to assess the extent of the drought. Finally, the whole administrative area is classified according to the percentage of affected area. VHI can detect drought conditions at any time of the year. ASIS assesses the severity (intensity, duration and spatial extent) of the agricultural drought and indicates the final results at administrative level given the possibility to compare it with the agricultural statistics of the country.

The ASIS database thus contains 30 years of agricultural hot spots, starting with the year 1984 when the Sahel was severely affected by drought. Figure 1 shows for the South Asia countries the agricultural areas affected by drought during the years 1987, 1991 and 2002.

From the global version of ASIS, which was designed to detect agricultural hot spots on the globe, standalone versions can be developed to monitor agricultural drought at country or regional level. The standalone versions would be calibrated with local agricultural statistics and they would use specific parameters, coefficients and masks of the main crops of the country or region. This version could be used on risk management by establishing remote sensing based crop insurance. http://www.fao.org/climatechange/asis/en/ ASIS will become operational and accessible on the GIEWS website in April 2014. ■

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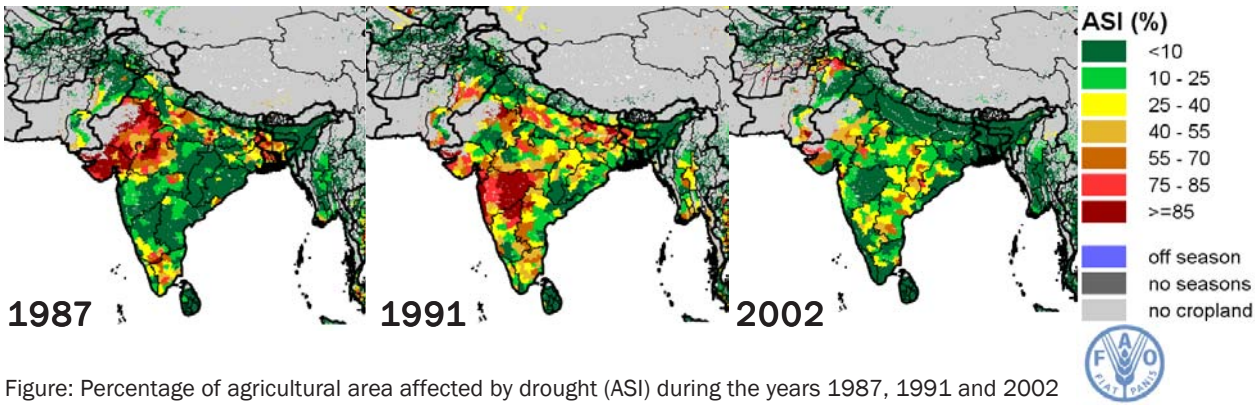

Figure: Percentage of agricultural area affected by drought (ASI) during the years 1987, 1991 and 2002

LEAD Pakistan and Disaster Risk Reduction

Leadership for Environment and Development (LEAD) Pakistan has been active on the environment and climate change agenda since 2005. LEAD's work on this issue, and consultations with multiple stakeholders across the country, led to the identification of the key challenges facing Pakistan in relation to climate change:

- A low knowledge base about climate change;
- Lack of awareness and concern among policy-makers;
- Scattered policy responses by government;
- Weak capacities and resources for implementing climate change adaptation.

The LEAD Climate Action Programme (L-CAP) was developed to address these challenges. The overarching goal of the programme is to enable effective, prioritized, national and international responses to climate change by a cross-section of key Pakistani stakeholders. The focus of L-CAP is at three levels: **a) Macro** (government and decision-makers) - relevant sectoral and cross-sectoral policies, as well as international negotiating positions; **b) Meso** (key stakeholders in the public and private sectors, as well as non-profit entities) – raising awareness of the importance and relevance of climate change, and promoting integration of climate change strategies into mainstream work; and **c) Micro** (local communities) – empowering communities to cope with climate change at grassroots levels.

One of the areas identified under the L-CAP is Disaster Risk Reduction (DRR). Besides the long-term effects of climate change, there has also been a recorded, dramatic increase in the number and scale of extreme, weather-related events. Climate change is resulting in an increase in the frequency and severity of climatic extremes, which increases the frequency of weather-related disasters. Climate change hits the poor hardest and the greatest impacts are likely to be on food security, health, migration, water security and quality. Over the past 10 years, weather-related disasters have affected 2.5 billion people. 98% of those killed in natural disasters across the world are in developing countries, underlining the link between vulnerability to disasters and poverty. Climate change is already amplifying the scope and scale of natural disasters in Pakistan. Disaster risks are posed by the greater chance of flooding, mud slides, avalanches, cyclones and so on. The risks are greatest for vulnerable communities living in coastal areas and along river banks, in mountains, and in arid areas. Recent flood in Pakistan (in 2010 and 2011) has impacted and affected a large population and has damaged (and destroyed) rural as well as urban infrastructure and livelihoods. Recent climate talks in COP19 (November 2013) established the Warsaw international mechanism for loss and damage associated with climate change impacts, as the main vehicle

Source: www.lead.org.pk

under the Convention to promote the implementation of approaches to address loss and damage in a comprehensive, integrated and coherent manner.

Our Focus

There are mainly four streams which make up the parameter of LEADs focus in DRR:

Climate Change and Migration: Exploring the links between climate change and migration – including rural-urban migration – with the latter being resorted to as an adaptation mechanism. Drawing on from relevant documented evidence from both Pakistan as well as globally, building a case for new research and policy engagement in the country.

Community Based Adaptations: Developing a framework for Community Based Adaptations (CBAs) by looking at the CBA practices in Pakistan, some important lessons and attempts to integrate them with the decision making frameworks coming up with policy recommendations towards a coherent strategy.

Disaster Risk Transfer: With Pakistan being increasing vulnerable to some of the most catastrophic impacts of climate change, through extreme events like floods, cyclones, GLOFs etc., there is a need to explore an effective mechanism for transferring this risk, using market instruments such as micro-insurance. This stream looks at the feasibility of such instruments for the most vulnerable and resource strapped segments.

Loss and Damage: This stream looks at the current, fiercely contested debate in the international arena on this salient issue. South Asia is highly vulnerable to climate change impacts and associated loss and damage. However, there is a persistent lack of knowledge of potential future climate change impacts making it difficult for policymakers to introduce policies and programs to address loss and damage. This stream highlights the significance of the debate, with the help of some regional case studies; it proffers policy advice and proposes a national strategy for deriving optimal benefits for the country.

Salient Interventions

Capacity Building

- LEAD has carried out **Capacity Building Workshops on Child Protection in Emergencies** by building the capacity of government officials undertaken to incorporate and implement child protection plans into Punjab Provincial Disaster Management Authority PDMA)'s emergency response and preparedness plans.

- Under the **Climate Leadership For Effective Adaptation And Resilience (CLEAR)** project; a DFID-funded five-year project, 30 local CSOs in Southern Punjab and Sindh have been supported to design and implement locally relevant, community-based adaptation micro-projects leading to enhanced sustainable livelihoods. These are designed to demonstrate how vulnerable communities can respond to the impact of climate change. This project addresses an important L-CAP initiative that addresses lack of capacity, lack of effective models, low and ineffectively articulated public demand for government to act, and a lack of awareness among vulnerable communities as to their rights in relation to climate change.

- **Building Capacity on Climate Change Adaptation in Coastal Areas of Pakistan**, is an European Union funded project aiming to build the capacity of vulnerable coastal communities and government departments to adapt to the particular threats faced by coastal communities in relation to climate change. The coastal belt of Pakistan, spanning an approximate 814 km and encompassing two of the least developed provinces, Sindh and Baluchistan, has already been ravaged by the effects of climate change, ranging from the more apparent natural disasters (such as tsunamis) to more gradual ones such as changing seasonal patterns. Coastal communities are directly reliant on the ecosystem that they live in for their sustenance, the main source of livelihood being fishing. Although communities inhabiting the coastal belt of Pakistan are rich in indigenous knowledge about their surroundings, lack of education, lack of technical knowledge, gender bias and inertia have created a barrier to climate resilience. The overall objective of the project is to ensure that the coastal areas in Pakistan and neighbouring regions have climate resilient ecosystems to support the livelihoods of coastal communities. As well as building climate adaptation capacity among communities and government departments, it seeks to strengthen water governance to improve the climate resilience of Indus Delta ecosystems. These efforts are supported by regional and trans-boundary cooperation on river delta adaptation.

Public Policy Engagement

- LEAD Pakistan (in partnership with CDKN and others) launched the **IPCC Special Report on Managing the Risks of Extreme Events and Disasters to Advance Climate Change Adaptation (SREX)** Report in Pakistan in June 2012. The high profile event in

Islamabad was attended by Dr Rajendra Pachauri, Chairman of the IPCC and winner of the 2007 Nobel Peace Prize, and around a hundred policy makers and experts on both climate change and disaster risk management (DRM). It provided an opportunity for reflection on the report's findings, something that was continued at a related event at the Lahore University of Management Sciences (LUMS). The process of dissemination and debate is on-going through LEAD's website and networks.

- Department of International Development (DFID) initiated a global study to identify the roles and approaches of the private sector in supporting resilience to disasters and climate extremes. LEAD carried out the **Input to Pakistan country case study of 'Stimulating private sector engagement in building disaster risk resilience and climate change adaptation'**. Within this, the study inevitably looked at opportunities and constraints for private sector innovation in disaster risk management and climate change adaptation, and options for addressing these. This study reviewed existing private sector engagements and collect cases of innovative public-private sector partnership approaches to building resilience to disasters and climate extreme. It seeked to understand the scope of activities being undertaken by the private sector in this context, including highlighting examples of innovation and what factors have supported these. It will particularly focus on case studies of where actions by the public sector have helped to create the conditions for private sector leadership and innovation (e.g. through regulation, taxation, risk sharing etc.). Stakeholders included representatives of donors, funds, domestic public sector actors and members of the private sector.

- **Climate and Development Knowledge Network (CDKN),** is a 5 year global initiative DFID funded managed by Price Water house Coopers. CDKN consists of 7 alliance members working in 3 regions namely, Asia, Latin America and Asia. LEAD acts as the Regional Hub for CDKN Asia. CDKN aims to enable developing countries to achieve a low-carbon and climate-resilient future along with poverty reduction and human development. CDKN supports decision-makers in government, the private and non-governmental sectors at national, regional and global level, in designing and delivering climate compatible development (CCD). CDKN Asia currently works in five countries which include Pakistan, India, Bangladesh, Nepal and Indonesia by combining research, advisory services and knowledge sharing in support of locally owned and managed policy processes. CDKN focuses on four strategic themes:
  i. Climate compatible development strategies and plans;
  ii. Strengthening resilience through climate-related disaster risk management;
  iii. Improving developing countries' access to climate finance;
  iv. Supporting climate negotiators from the least developed and most climate vulnerable countries

Research

- LEADs research has an appetite to explore vital areas of sustainable development through different lenses and perspectives. This and the salience of climate change, with its likely impacts on a highly vulnerable Pakistan, have set us to launch a whole series on **Vulnerability and Resilience.** This research series, comprises of prime studies that examine the vulnerability to a host of climate induced hazards and also suggests measures to build resilience against them. Each individual study focuses on the four streams with LEADs DRR focus, while conducted in the Pakistani context, reviews the state-of-the-art, both in terms of the ongoing debate around the issue as well as the global best practices. It also reflects LEAD Pakistan's ambition of carrying them out to the highest international standards. These studies abstract from the lessons learnt globally, and applying them to Pakistan, aim to come up with actionable and meaningful recommendations for the policymakers in the country.
- **Case Study on 'Reducing Risks and Vulnerabilities from Glacier Lake Outburst Floods in Northern Pakistan** was developed to guage how the project carried out in Bagrot Valley in Gilgit Baltistan, and Drongagh in Chitral by UNDP had been able to draw policy recommendations & institutional strengthening, strengthen knowledge and information about Glacial Lake Outburst Floods risks and demonstrate community-based Glacial Lake Outburst Floods risk management. This was essential in developing the achievements and challenges faced during project implementation, as well as lessons learnt. The case study was shared with national and international experts on climate change to ensure the integrity of information provided. ■

– Hina Lotia, Director Programmes, Programme Development Department, LEAD Pakistan

ADVOCACY

Why Advocacy Matters?

The Climate and Development Knowledge Network (CDKN) has been providing support to developing countries in the international climate talks through the Advocacy Fund since September 2011. The world's poorest and most vulnerable countries tend to be the hardest hit by the impacts of climate change, but usually have fewer resources and limited capacity to engage with and influence international climate negotiations. A fair and ambitious global climate agreement, that reflects the interests of the poorest and most vulnerable countries will only be possible in 2015 if these countries make their voices heard in the negotiations. This is the vision for the Advocacy Fund.

The Fund supports a range of projects across Asia, Africa, Latin America, the Caribbean and the Pacific to help negotiators and leaders from these countries to become informed, skilled, active, networked and influential actors in international negotiations. These projects range from providing assistance to these countries to send delegations to the negotiations, to building the technical knowledge and strategic capacity of negotiators engaged in the talks. The fund also provides legal and climate finance advice to developing country negotiators in preparation for and during the negotiations, as well as helping these countries to build alliances and consensus towards ambitious global action on climate change. In Asia specifically we are providing technical assistance to the Chair of the Least Developed Countries Group, which represents the interests of the least developed countries under the United Nations Framework Convention on Climate Change (UNFCCC). The Chair is currently held by Nepal, and we are supporting a range of capacity building initiatives across the country to a build a legacy for Nepal from its leadership of the group.

Whilst monitoring and evaluating advocacy is difficult, evidence suggests the Advocacy Fund has contributed to the rising prominence and influence of developing country groups under the UNFCCC. The negotiators we work with have expressed how CDKN support has allowed them to become key players and engage effectively in the UNFCCC process, and given them the credibility and legitimacy upon which to coordinate with countries from other regions. As we enter a critical period in international climate negotiations, it is imperative that the Advocacy Fund and other actors continue to support the poorest and most vulnerable countries to engage in, and influence, the process. Whilst these countries may have less economic and political influence, they can have a very powerful moral voice when they are well prepared and coordinated. ■

– Kiran Sura, Head of the Advocacy Fund, Climate and Development Knowledge Network (CDKN), London

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