

# Climate and Development Outlook

Stories of change from CDKN



August 2015

**Climate and Development Knowledge Network**

Helping developing countries to design and deliver climate compatible development

## Welcome to the Pakistan Special Edition of Outlook

Pakistan is among the lowest emitters of greenhouse gases in the world, but ranks among the highest in terms of vulnerability to climate change. Its high dependency on the Indus River system makes it particularly vulnerable to the increasing rate of glacial melt and erratic monsoon patterns. The 2010 floods affected 20 million people and caused extensive damage to infrastructure, services and livelihoods. This was repeated to a lesser extent in 2011, 2013, 2014 and 2015.

Major disasters such as these have spurred government interest in implementing disaster risk reduction (DRR) and climate change adaptation measures. National and Provincial Disaster Management Authorities have been set up, in addition to the federal Ministry of Climate Change. The National Climate Change Policy was approved in 2012.

Since 2013, there has been a greater emphasis at the national level on climate change mitigation, with the Ministry of Climate Change actively pursuing the development of Nationally Appropriate Mitigation Actions (NAMAs) across the energy, transport and waste sectors.

CDKN's goal in Pakistan is to achieve proactive and inclusive policy action on low-carbon and climate-resilient development that reduces long-term risk from climate change to human security and economic growth in the country.

## Pakistan Special Edition

### BRINGING INSURANCE TO THE MOST VULNERABLE, DISASTER-PRONE COMMUNITIES

Bilal Ashiq, a father of three and owner of two fish farms located on the outskirts of Multan in Southern Punjab, sits hunched, braced against uncharacteristic, howling winds in the month of July. "We have such winds in August normally," he says, "but these are happening earlier than usual. It is worrying because we might get floods earlier, too."

With his farms lying close to the flood-prone River Chenab, Bilal talks calmly about the phenomenon. He remarks how his closest friend lost his house, children and his booming fish farm business to the devastating floods in 2010.

"He did not have anything left to go back to. The authorities provided help initially, gave him food and clothes, but that did not help him recover his business. Four years after the flood, my friend who once had his own business, and was richer than all of us, now looks for work every day, offering his services as wage labour and

earning a fraction of what he used to. No one will give him loan because he cannot put up any collateral. We offer him help, but my own farm faces the threat of floods every year."

Bilal worries about the future: "Last year I lost one third of the farm to the floods when the recently-constructed bridge broke down and let in water from the River Chenab to flood the area. Despite building expensive 'bunds' [flood protection walls] around the farm, the water still got through. I lost 4 of my 11 fish ponds to the raging waters; I only recovered one pond this year because I had lost more than I could save."

The predicament of Bilal and his friend is not uncommon in Pakistan. Floods hit the provinces of Punjab and Sindh almost every year, resulting in damage to villages located in low lying areas along the rivers.

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But nothing on the scale of the 2010 floods, when Pakistan witnessed an immense calamity; the 'super-flood' waters from the River Indus spread extensively, submerging large cities in the process, displacing 20 million people across the country and destroying large areas of agricultural land, hitting the economic backbone of the country. Most recently, intense torrential rains have been wreaking havoc in the mountainous northern parts of the country with flash floods washing away entire villages, such as that in Chitral in the Hindukush Range. Experts predict such events will become more frequent and intense in the future.

The response to natural disasters in Pakistan is on a case-by-case basis, relying on domestic budgets, including diversion of resources from other projects. Though providing some initial relief, this does not really help the people affected to rebuild their lives. Hazard coverage, where it exists, is usually limited to major industrial and commercial properties. The poor, with little or no access to formal insurance mechanisms for disasters, are forced to 'self-insure', relying on their savings when disasters strike.

Policy-makers in Pakistan could learn from global experience, which shows that risk transfer instruments, like insurance, deployed well in advance of a natural disaster, prove to be efficient tools for providing timely assistance to the affected populations. Micro-insurance can help low-income households, farmers and businesses rapidly access liquidity after disasters, protecting their livelihoods and helping them reconstruct.

The National Disaster Management Authority (NDMA) of the Government of Pakistan has asked CDKN to support its cause to develop a risk transfer mechanism to protect the lower income population group against extreme events that are expected to increase in frequency due to climate change impacts. The first phase of this project provided a set of design options for a national disaster insurance fund to the Government of Pakistan. The project consortium, of Munich Climate Insurance Initiative, DHI and a number of experienced international experts on insurance, risk management and fund design, reviewed some of the most successful models in the world and applied lessons learned from international best practices.

Drawing upon these examples, the consortium recommended the most suitable options for Pakistan in line with the Government's objectives, capacity and needs. Analysis of these options took into account the country's diverse climatic, topographic and cropping systems; risk exposure; and its socioeconomic, cultural, political and geographical factors. The main purpose of developing a National Disaster Insurance Fund would be to set up an effective and transparent mechanism with streamlined distribution channels and adequate funds, in place before the disaster strikes, so that the money reaches the beneficiaries in the shortest possible time.

***"Through the work with CDKN, we have just started moving towards introducing disaster risk insurance in Pakistan. The project has the potential to have an immense positive impact on the most vulnerable populations."***

**AHMAD KAMAL**, NATIONAL DISASTER MANAGEMENT AUTHORITY (NDMA), PAKISTAN

## GUEST COLUMN

# Low-carbon scenario analysis: an essential building block for Pakistan

**PETER WOODERS, GROUP DIRECTOR – ENERGY, INTERNATIONAL INSTITUTE FOR SUSTAINABLE DEVELOPMENT (IISD)**

Although a relatively low global greenhouse gas emitter at present, Pakistan's carbon footprint is expected to grow exponentially with increasing economic development and rapid population expansion. Appropriate low-carbon interventions taken now can help to ensure that Pakistan remains a low emitter as the country develops, without hampering its growth potential.

There is an urgent need to improve the evidence base surrounding greenhouse gas emissions and mitigation options in Pakistan. In common with other developing countries, Pakistan is on a journey to assess and select options that could be taken up to lower greenhouse gas emissions across sectors of its economy. This process, which includes quantifying reductions and investment needs and assessing options against national development criteria, is the building block for a low-carbon development strategy. Implementation may be partly realised through international support, for example through NAMAs or other mechanisms.

Previous CDKN support for Pakistan has helped to establish the priority sectors where emissions can be reduced (energy, including transport, represents approximately 50% of national emissions and agriculture a further 40%); to identify priority actions for climate compatible development; and to determine generic and specific opportunities in key technologies, such as renewable energy, and key areas, such as small and medium-sized enterprises (SMEs).

To further develop a low-carbon outlook for Pakistan, a good

understanding of the current situation in Pakistan and how this could be expected to change under business-as-usual growth is needed. This requires an updated reliable greenhouse gas emissions inventory – the last complete emissions inventory for Pakistan was for 1993–94 – as well as reliable projections of emissions for each sector without intervention; a so-called reference case. This reference case is the starting point for options analysis; assessing different technologies/ options and their contribution to both mitigating climate change and achieving Pakistan's broader development priorities.

In conjunction with Pakistani partners, the Centre for Climate Research and Development at COMSATS and PITCO, the International Institute for Sustainable Development, and the Energy Research Centre of the Netherlands (ECN) are establishing sector baselines and low-carbon scenarios for Pakistan, for each of

the six sectors under United Nation Framework Convention on Climate Change (UNFCCC) inventories, i.e. energy, transport, industry, agriculture, forestry and waste. Starting in February 2015 and over a 15-month period, the CDKN-supported initiative has developed draft baselines for the energy and transport sectors and an initial list of mitigation options for the energy sector.

Pakistan's Vision 2025 policy outlines the low-carbon development journey. The next stage in the process is the Intended Nationally Determined Contribution (INDC) that Pakistan will submit to the UNFCCC before the 21st Conference of the Parties (COP21) in Paris. The low-carbon scenario analysis represents an essential building block for Pakistan's INDC, and provides a way for information to be collected and to stimulate debate on the low-carbon future. But the INDCs are just a first step; in common with countries around the world, Pakistan will be broadening and implementing its low-carbon development strategy and implementing options to 2025 and beyond.

Separate CDKN-supported assistance to Pakistan, which also began in February 2015 and is being delivered by a similar team, has outlined a roadmap for the development of Pakistan's INDC for consideration by Pakistan's Ministry of Climate Change, and will support the development of an INDC for the energy sector and at least one other sector, likely to be mitigation from agriculture. That said, Pakistan is not a large emitter, and its vulnerability to floods and disasters mean a large part of its INDC will focus on adaptation.





## **WATER, FOOD AND ENERGY SECURITY – MOVING BEYOND DIALOGUES**

Water, food and energy – often referred to as a ‘nexus’ – are three fundamental ingredients without which a country cannot survive. All three of these elements pose an existential threat for the underdeveloped and developing world. CDKN recognised this when it chose this thematic area for its 2014 global research call.

Pakistan’s rising number of malnourished children illustrates the gravity of food insecurity. About 43% of under-fives suffer from stunted growth (low height for age) and 31.6% of children suffer from low weight for

their age according to WHO statistics (2012–13). Pakistan ranks in the top 10 countries with the most underweight population, which is a sign of widespread malnutrition.

Water is perhaps the most essential commodity for humankind’s existence in all its forms – from clean drinking water to water for agriculture. Fresh water per capita has been depleting as Pakistan’s population rises, and this poses one of the country’s biggest threats. It is estimated that by 2030, if the current trends continue, Pakistan will become a water scarce country; water availability will be less than 500 cubic metres per capita.

Energy seems to be less of a worry for a country that is struggling to feed its population and ensure availability of water. However, energy remains an important factor in the overall progress of the economy. Technological advances in all three sectors of the economy have led to a greater dependence on energy. Energy has become a necessity and people’s livelihoods now depend on it.

The water, food and energy nexus compounds the overall state of insecurity of each of the individual elements that on their own are essential for survival. Recognising the

need to tackle this state of insecurity and move beyond dialogues and statements, CDKN supported the Ministry of Planning, Development and Reform in Pakistan to move towards policy and action at both the national and provincial level. CDKN convened policy-makers, technical experts and civil society to come up with policy recommendations for all three sectors, as well as an engagement plan for the Ministry to follow up with relevant stakeholder groups. Continuing efforts are a must in the development process, including at community scale.

## **ENGAGING SIALKOT’S INDUSTRIAL SECTOR IN RENEWABLE ENERGY SOLUTIONS**

The town of Sialkot – home to the famous Adidas Brazuca, the official football used in the FIFA World Cup 2014 – has an enviable reputation for attracting international business to its sports, leather and surgical industry. It has a long history of manufacturing, and is known for its entrepreneurial spirit; the local chamber of commerce and industry self-financed the construction of an international airport, linking the city directly with international markets. Private industry

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*“I use solar energy to power my own house and want to replicate it in my factory; but it isn’t affordable. I know using renewable energy will not only pay off soon, it will reduce my costs, increase my profits, and open more avenues of international business for me.”*

**IQBAL QAYYUM,**  
LOCAL TANNERY OWNER IN SIALKOT



## Looking ahead: Ali Tauqeer Sheikh, Regional Director CDKN Asia

Over the past 5 years, CDKN has established a solid foundation and we are now ready to build on that and tackle some of the most critical challenges in Pakistan, such as insuring vulnerable people against the costs of recurring climate disasters, and enhancing national leadership in international climate agreements. These are some of the challenges that are threatening economic progress and prosperity. By 2030, we are anticipating a strong growth rate and sustainable development; we are aspiring to lift several million people above the poverty line, make our cities and communities more inhabitable and our societies and economies resilient. This we will do by engaging with policy-makers at provincial and national levels and working with think tanks, the private sector, academia and the media to ensure that our journey to climate compatible development is sustainable.



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in Sialkot is now exploring renewable energy sources to overcome the worsening energy crisis in Pakistan.

With electricity deficits leading to load shedding (electricity blackouts) of 12 to 16 hours, Sialkot's SMEs have struggled to find solutions, whereas the larger industries are using diesel generators as a back-up energy source. Rising energy costs and pressure from international markets for cleaner and greener production have also encouraged SMEs to lessen their electricity difficulties through renewable energy.

CDKN – in collaboration with international experts Ecofys (the Netherlands) and PITCO (Pakistan) – is supporting the Ministry of Climate Change and the Punjab Power Development Board to find renewable energy solutions for Sialkot industry through a Nationally Appropriate Mitigation Action (NAMA). The team is evaluating renewable energy options and ways to address prevailing barriers to renewable energy uptake in industry. This subnational NAMA will provide industries with the chance to obtain a more affordable and reliable source of electricity by channelling technical and financial support to this sector from domestic institutes, local banks, developed countries and multilateral development banks.

### PAKISTAN: CATCHING UP FAST IN INTERNATIONAL CLIMATE NEGOTIATIONS

According to the United Nations' Human Development Index, 60 percent of Pakistan's population lives on less than US\$2 a day. What's more, Pakistan is riddled with high population growth, corruption, political instability, terrorism and an unmanageable energy crisis. On

top of this, climate change is affecting the most vulnerable: 500 people, many of them children, recently died in the Thar Desert due to drought, and atypical heat waves killed around 3,000 people in Karachi in July 2015. Previously, these tragic deaths would not have attracted sufficient attention from policy-makers to mobilise an intervention in the global climate debate. However, with the recent reinstatement of the Ministry of Climate Change, large steps forward in both domestic climate action and international climate negotiations are being taken with a renewed vigour.

Pakistan, similar to the other developing countries that make up the non-Annex 1 parties of the Kyoto protocol, has a history of taking a passive stance on climate action, making adaptation to climate impacts its priority by extracting technology and accessing finance from developed countries. However, with the obligation to submit INDCs to address climate change beyond 2020, with the global aim of limiting warming to 2 degrees Celsius, developing world leaders are waking up to the need for collective action on climate mitigation.

Earlier this year, CDKN initiated preparatory work with the Ministry to support the process in developing Pakistan's INDCs. A roadmap was developed by LEAD Pakistan, the International Institute of Sustainable Development, and the Energy Research Centre of the Netherlands (ECN) to guide the Government through the process of planning, developing and submitting



commitments to adaptation and mitigation action in the six sectors identified by the UNFCCC: agriculture, forestry, waste, industry, energy and transport. This assisted the Ministry of Climate Change by painting a clearer picture of the baseline emissions and actions currently being taken versus actions required in the near future. This has led to a request from the Ministry for further support from CDKN in developing the INDCs

for the energy sector. In addition, Pakistan – classified as a water-stressed country – is set to be the first nation to submit an INDC incorporating the water sector.

### RESOURCES

On our website you can read:

- CDKN Asia Brochure
- AR5 toolkit 'What's in it for South Asia'

Written by Areej Riaz, Mehrunisa Malik and Twangar Kazmi, with input from Wasif Rashid and Mairi Dupar  
 Editing, design and layout: Green Ink ([www.greenink.co.uk](http://www.greenink.co.uk))  
 Photos: p. 3: danishkhan/iStock.com; all other images: Development Lens ([www.developmentlens.org](http://www.developmentlens.org))

This document is an output from a project commissioned through the Climate and Development Knowledge Network (CDKN). CDKN is a programme funded by the UK Department for International Development (DFID) and the Netherlands Directorate-General for International Cooperation (DGIS) for the benefit of developing countries. The views expressed and information contained in it are not necessarily those of or endorsed by DFID, DGIS or the entities managing the delivery of CDKN, which can accept no responsibility or liability for such views, completeness or accuracy of the information or for any reliance placed on them. This publication has been prepared for general guidance on matters of interest only, and does not constitute professional advice. You should not act upon the information contained in this publication without obtaining specific professional advice. No representation or warranty (express or implied) is given as to the accuracy or completeness of the information contained in this publication, and, to the extent permitted by law, the entities managing the delivery of CDKN do not accept or assume any liability, responsibility or duty of care for any consequences of you or anyone else acting, or refraining to act, in reliance on the information contained in this publication or for any decision based on it. Management of the delivery of CDKN is undertaken by PricewaterhouseCoopers LLP, and an alliance of organisations including Fundación Futuro Latinoamericano, LEAD Pakistan, the Overseas Development Institute, and SouthSouthNorth.

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**CDKN Asia**  
 LEAD Pakistan  
 LEAD House  
 F-7 Markaz  
 Islamabad - 44000  
 Pakistan  
 +92 51 265 1511

**CDKN Global**  
 7 More London Riverside  
 London  
 SE1 2RT  
 +44 (0) 207 212 4111  
[www.cdkn.org](http://www.cdkn.org)  
[enquiries@cdkn.org](mailto:enquiries@cdkn.org)

**Regional contacts**  
[africa@cdkn.org](mailto:africa@cdkn.org)  
[asia@cdkn.org](mailto:asia@cdkn.org)  
[lac@cdkn.org](mailto:lac@cdkn.org)