

IPCC SREX Regional Outreach Meeting Delhi, 2nd – 3rd May 2012

Meeting Report

1. Introduction

This event in Delhi, India was the 3rd in a series of regional outreach events for the IPCC Special Report on *Managing the Risks of Extreme Events and Disasters to Advance Climate Change Adaptation* (IPCC SREX Report), which was published in March 2012. The event sought to inform stakeholders in South Asia about the possible impacts of, and options for managing, changing risk patterns of climate extremes and disasters as assessed in the IPCC SREX Report. It was organised by the Intergovernmental Panel on Climate Change (IPCC), the Overseas Development Institute (ODI), the Norwegian Climate and Pollution Agency, the Norwegian Ministry of Foreign Affairs and the Climate and Development Knowledge Network (CDKN).

Held at Le Meridien Hotel in New Delhi, the event attracted almost 150 participants. This included representation from over 23 different NGOs, 15 universities and research institutions, and 10 international bodies, including participants from India, Pakistan, Bangladesh and Nepal. Over 10 media groups attended and reported on the session. The event opened with key speeches by Dr Rajendra Pachauri, IPCC Chairman, the Hon. Mr M Shashidhar Reddy, Vice Chairman of India's National Disaster Management Authority, Dr Tishyarakshit Chatterjee, Secretary of India's Ministry of Environment and Forests, and Mr Krishna Gyawali, Secretary of Nepal's Ministry of Environment. In the sessions that followed, participants heard insights on disaster risk and climate change from a variety of backgrounds, sectors and perspectives from speakers across the South Asia region, which sparked informed and challenging questions and stimulating debate.

This short meeting report provides a summary of the presentations and discussions at the sessions throughout the event.



2. Key messages

2.1 Day 1, Wednesday 2nd May

2.1.1 Welcome Session, 9:30 – 10:30

This IPCC SREX Outreach Event for South Asia was opened by Dr. Rajendra Pachauri, IPCC Chairman, who reflected that the size and diversity of the audience present is a sign that climate change is of concern to all societies and countries.

The IPCC's Fourth Assessment Report clearly highlighted the importance of looking more closely at extreme events. By working in partnership, Dr. Pachauri said, IPCC Working Groups 1 and 2 have together successfully met this need. The report has not only interpreted the science behind extreme events, but also presented a selection of case studies. It is clear that governments and institutions need to be prepared for increased intensity and frequency of extreme events; according to the report, increases in the frequency and intensity of heat waves and extreme precipitation events will be two significant impacts of climate change in Asia. It is vital that societies in Asia build on their existing capacities to deal with these extreme events.

The Honourable Mr. Shashidhar Reddy, Vice Chairman of India's National Disaster Management Authority (NDMA), highlighted that the SREX Report provides important lessons for policymakers, especially in Asia where vulnerability is high. The 2004 tsunami was a catalyst in the establishment of the NDMA in India, and Mr Reddy has noticed a shift in approach from a focus on response to risk reduction and early action. However, Mr Reddy's perception is that there has not been enough change in the attitudes of key decision makers, including in governments and communities; change needs to be hastened. The impacts of today's action or lack of action need to be better understood.

Mr. Reddy highlighted that urban centres, in particular, need to be better prepared for dealing with extreme events and pointed to the Mumbai floods in 2005 as an example of inadequate disaster mitigation. In India, improvements in disaster management have been occurring in small, incremental changes but there is a need for transformational change to achieve the necessary level of risk reduction. Positively, NDMA has recently issued guidelines to relevant ministries on urban flooding, but there are many challenges ahead. For instance, access to and use of real-time weather information needs to be improved, and the lack of local information and data to aid risk management is another hurdle. The recent experiences of Bangladesh and Myanmar in dealing with cyclones reflect the importance of access to weather information for saving lives. In India, access to and use of weather information is improving, for example as seen in Andhra Pradesh which recently saw the biggest evacuation on record in preparation for a coming cyclone, but there is a long way to go. A change in mindset at all levels is called for. Mr Reddy suggested that local networks of rainfall gauges would be a low-cost and valuable step toward better flood preparedness. In addition, improved risk transfer mechanisms and insurance are vital.

Dr. Tishyarakshit Chatterjee, Secretary of the Indian Ministry of Environment and Forests, described SREX as a scientific validation for taking disaster risk management and climate change adaptation seriously, particularly in Asia where vulnerability to disaster events is high. There is high confidence that the global climate will warm, extreme events will increase in frequency and severity, and sea levels will rise.

Appropriate action needs to be taken. SREX has shown that impacts on mountain ecosystems will be significant. However, a key challenge in Asia is the lack of sub-regional data, a sentiment which was highlighted a number of times throughout this SREX Outreach Event. Dr. Chatterjee outlined a number of measures which he felt should be prioritised to better prepare for extreme events, including: the use of wireless radios to relay information to farmers and fishermen; development of insurance products for droughts and floods in developing countries, as these are cyclic events and insurance companies need to respond to these needs; internalising of climate change into action plans at state and national level; and long term, systematic monitoring of bio-physical systems to improve data availability.

Mr. Krishna Gyawali, Secretary of the Ministry of Environment in Nepal, introduced the IPCC SREX Report as a user friendly report which is useful to developing countries and responds well the information needs of decision makers. The report's conclusions, said Mr. Gyawali, have been drawn with a degree of caution.

Mr. Gyawali told the audience that policy makers often view environment and development as distinct fields of work, but that the IPCC SREX report supports the notion that this needs to give way in favour of a holistic approach. The existing conflicts which often exist between ministries and entities dealing with environment and development issues need to be overcome, and a re-conceptualization of 'disasters' is required given that, in the South Asia region, they are often considered to be in 'destiny's hands.'

In his presentation Mr. Gyawali outlined the extent of challenges faced in mountainous countries such as Nepal, where mountain ecosystems, biodiversity, water supply, food security stand to experience significant climate change impacts. He closed the Welcome Session by summarising three key issues which require attention: dedicated funding arrangements to help developing countries tackle climate change (climate finance); appropriate technology for mountain countries; capacity development at all levels.

2.1.2 Panel Discussion of Major Findings, 11:00 – 12:30

The panel discussion was initiated by Dr. Claire Goodess, who introduced the IPCC SREX Report findings on climate change specific to the South Asia Region. Dr. Goodess also described how, under IPCC guidelines, confidence levels attributed to predictions and specific words used have been chosen with care and precision.

Presenting results on climate changes observed in recent decades, Dr. Goodess said it was very likely that extreme hot days and heavy precipitation days have become more common in South Asia, and that there is medium confidence that human activities have been a key factor in this change. There is thought to have been an increase in the occurrence of heat waves, though due to a weaker published evidence base there is lower confidence in this assessment. Overall decreases in rainfall in Western Asia, and a decrease in dry days in India, have been also observed.

Dr. Goodess described that the predictions for the coming decades present a mixed picture depending on the scenario used; however, greenhouse gas (GHG) emissions in the last 20-30 years indicate a trend towards the A2 and A1b scenarios. These are the scenarios in which human activities continue to emit relatively high levels of GHGs, and therefore result in higher levels of climate change. It is predicted with high confidence that temperature extremes will increase, as temperatures and occurrences of warm days and warm nights will increase and cold days and cold nights will decrease. However, there is low confidence in predictions relating to dryness and the monsoons due to inconsistencies in the results of

climate models; it is therefore not clear how rainfall volumes and patterns will change as a result of climate change in the coming decades.

Dr. Apurva Sanghi presented the SREX Report's findings on the impacts of climate change in South Asia, stressing that no one is immune to these impacts. Three messages Dr. Apurva put forward were that: a) there are large differences in economic losses between regions; b) the most vulnerable have suffered greatest, as fatalities are higher in developing countries; and c) increasing exposure of people and assets are major cause of losses. Frequency and intensity of extreme events are expected to increase in the future, and disaster risk will also therefore continue to increase without disaster risk management measures. For example, exposure to tropical cyclones and floods in Asia will increase. Sea level rise has taken place and will continue to increase disaster risk for coastal centres and communities. Dr. Sanghi added that the impacts would be most severe on climate dependent sectors and infrastructure.

Mr. Mihir Bhatt concluded the presentation of major findings with case studies from Chapter 9 of the IPCC SREX Report. Mr. Bhatt gave case study examples from the field on the measures that need to be taken to mitigate disaster risk. Mr. Bhatt highlighted the case of Mumbai as a coastal megacity, where many lives and homes were lost in recent floods as a result of very high rainfall and underlying vulnerability. In addition, he discussed the challenges for small island developing states; these countries have small economies which are often dependent upon their natural capital for their income from agriculture and tourism, and are likely to experience increasing water resource problems in coming decades. The audience was reminded that the need to mitigate and adapt to disaster events is especially acute in Asia, which is expected to be home to 14 of the top 20 most exposed 20 urban areas in terms of assets by 2070. Mr. Bhatt also discussed the need for risk transfer and education, training and public awareness. Innovation is needed to develop risk transfer mechanisms which are adequate for dealing with large scale disasters, and to better incentivise disaster risk reduction measures of the population. Raising awareness of disaster risk reduction at during primary and higher education has also been shown to be a simple and effective means of promoting better risk reduction.

Questions were raised from the audience about weather index insurance which, according to several practitioners working at community level in rural areas, is perceived to be too expensive. According to Mihir Bhatt, there needs to be more competition among insurance providers to better meet the needs of users and to bring down the cost of insurance premiums, though it was also pointed out that in some cases premiums should be high to discourage people from living in high exposure areas; insurance should not subsidise unnecessary risk-taking. Questions around risk transfer and insurance continued to arise throughout this SREX Outreach event in Delhi.

Dr. Pachauri, who had not presented in this session but was present on the panel to answer questions, responded to a question regarding a lack of information on the economic benefits of investing in disaster risk management by highlighting that many disaster impacts such as loss of young lives, cultural heritage and ecosystem services are difficult to value and monitor. Given this reality it is difficult to come up with a precise number in terms of costs and benefits of disaster risk reduction; the loss estimates provided are lower bound estimates. Dr. Pachauri told the audience that decision making on disaster risk necessarily involves making subjective judgements, as perfect data is not available.

Participant Mr. Ray Kancharla of Save the Children drew attention to the lack of child centred case studies in the SREX Report. In response, Dr. Pachauri suggested that there were other specific groups and issues which have not been dealt with specifically in the report, such as gender, which need further investigation.

The scope of this IPCC SREX Report did not extend to looking at specific impacts of each individual group in detail.

2.1.3 Policy and Practice Forum, 14:00 – 15:30

Mr. Ravi Agarwal, Director of Toxic Links, opened the session by highlighting the vulnerability of the South Asian region to extreme events, and the need to better understand the linkages between exposure, vulnerability and development in the region. He stressed upon the need for transformational change in the ways in which policy makers consider disaster risks when planning for the future; this needs to become routinely and systematically incorporated into planning processes.

Mr. Ritesh Kumar, of the Wetlands International South Asia, began by introducing the Partners in Resilience Programme on which he also works. The programme brings together agencies with experience in disaster risk management, and promotes understanding of risks. Mr. Kumar highlighted the importance of wetland ecosystems to livelihoods and as natural buffer for hazard events. However, wetland ecosystems are rapidly disappearing. Mr. Kumar stressed that ecosystem management is an important disaster risk management tool; there is a need for greater awareness of the value of wetland ecosystems and governments need to conserve them accordingly.

Dr. Satendra, Director of SAARC Disaster Management Centre, acknowledged that the impacts of climate change are very evident in the South Asian region. South Asian countries are vulnerable to changing climates and to disaster risk due to socio-economic conditions, geo-climatic conditions and high population density among other contributing factors. As a result, the region is prone to frequent disaster events which impact upon food security and livelihoods. In addition, the region needs to be aware that climate change adversely impacts water resources and health, and can contribute to migration. In light of these challenges, there is a need to strike a new balance between measures to prepare for, manage and transfer disaster risks in developing countries.

Dr. Satendra finished his presentation by highlighting the SAARC's climate change and disaster risk management, and SAARC's commitment to promoting regional cooperation for holistic disaster risk management in South Asia. Initiatives include a Digital Vulnerability Atlas for South Asia, and a Knowledge Portal for South Asia on disaster risk management and climate change adaptation. Climate change adaptation and disaster risk management have been identified as critical areas by SAARC in context of climate change.

Dr. Thirumalachari Ramasamy, Secretary of India's Department of Science & Technology, emphasized that although climate change is a global concern, extreme weather events are realities felt at local level. Extreme events are local events with knock-on impacts on households and communities. Dealing with extreme events at local level requires many things including: better governance for enhancing preparedness; better availability of and access to information on potential hazards; public and political understanding of hazard risks; and empowerment of society to respond by means of local action. A relative lack of data and research on weather patterns and hazards in Asia is a key challenge, and there is a need to further study the role of Himalayas in influencing weather patterns.

Mr. Mohammad Didarul Ahsan, Additional Secretary of the Bangladesh Ministry of Environment and Forests, gave insights from Bangladesh on disaster related policies and practices. Bangladesh is one of the

most vulnerable countries in the world to hazard events, as highlighted in a case study in the IPCC SREX Report, and is often affected by floods and periodic cyclones. In recent years Bangladesh has seen a paradigm shift from disaster response and recovery to disaster management and risk reduction. This is reflected by several disaster management initiatives currently being designed and implemented by the Government of Bangladesh, and highlighted by Mr. Ashan. Disaster risk reduction is now a strategic part of national policies and programs in Bangladesh and the government is engaging extensively with NGOs and international organisations in order to better manage disaster risk. The Bangladeshi example is one to watch in terms of best practice in disaster risk management.

2.1.4 SREX Hard Talk, 16:00 – 17:30

The speakers were introduced by Mr. Manu Gupta, who asked panellists to reflect on the central messages they take from the report.

Dr. Prodipto Ghosh, a Member of the Prime Minister's Council on Climate Change in India, identified differences in peoples' understanding of probabilities as an important problem with regards to risk management for extreme events. Different policy makers can judge the implications of probabilities differently, and therefore perceive the need to act differently. It is therefore difficult to ensure that all decision makers take 'appropriate' action on disaster risk, given that they may perceive the risk to be greater or lesser than reality. This comes back to Dr. Pachauri's comment during the Panel Discussion on major finding about the subjective nature of decision making on disaster risk management. In his final comments, Dr. Ghosh raised the need for more examples to show how development initiatives could better incorporate disaster risk management or climate change adaptation practices, as the IPCC SREX Report is relatively weak on this.

According to Dr. Zafar Iqbal Qadir, Chairman of Pakistan's National Disaster Management Authority, the SREX Report is timely and relevant for Pakistan as the country is currently developing a national risk management plan. Communities in Pakistan are very vulnerable to extreme events, and therefore risk reduction and disaster preparedness are important at all levels. Mechanisms need to be put in place to ensure that all communities benefit from government initiatives on climate change, and that risk management becomes routine. Dr. Qadir described a government plan for each state in Pakistan to develop and run index-based insurance scheme, as a bid to improve access to insurance as a risk transfer mechanism. Under the scheme, the ratio of citizen to government contributions would increase with income; contributions for the poorest Pakistani citizens would be made entirely by the government, while wealthier Pakistanis would pay more for their insurance. These state-level insurance institutions would be supported by a newly created risk financing fund, and run by state governments.

Mr. Mihir Bhatt, IPCC SREX Coordinating Lead Author and Founder of the All India Disaster Mitigation Institute, highlighted 4 key messages from the IPCC SREX Report: 1) the need for early warning systems at local level; 2) improved risk transfer mechanisms that better identify and fund disaster risk; 3) education on disaster risk reduction, from primary through to higher level; and 4) greater emphasis on disaster risk management in urban areas, and particularly urban areas in coastal zones. Regarding risk transfer, Mihir suggested that India should learn from the Pakistani example outlined by Dr. Qadir.

Reflecting on the content of the IPCC SREX Report, Mr. Bhatt acknowledged that examples of appropriate action to be taken, and how policy makers and practitioners can make use of the findings, are lacking in the report. Further work is needed on this.

Professor Alimullah Miyan, Chairman of the South Asian Disaster Management Centre and Founder of the International University of Business Agriculture and Technology in Bangladesh, summarised a number of criticisms of the IPCC SREX Report and the current state of research. He suggested that processes such as that used for this report need to do more to capture local knowledge and that held by developing countries, as western science is dominant in the report. He highlighted the need for further information on the economics of adaptation and disaster risk management, to better understand and publicise the cost implications of taking or not taking adaptation and risk reduction measures. Finally, Prof. Miyan repeated a phrase heard a number of times throughout this SREX Outreach Event in Delhi: “The report is not operational enough”.

Following the presentations a lively discussion was initiated by Professor Joyashree Roy, a Professor of Economics at the Global Change Programme, Jadavpur University in India. Prof. Roy raised concerns about the ability of insurance schemes to adequately cover disaster losses. In his response, Mr. Bhatt agreed that the insurance industry in its current form is not adequate, adding that governments and the insurance industry need to be more inventive in creating insurance mechanisms to transfer risk. This sentiment was echoed by Dr. Qadir, who alleged that insurance as it stands today doesn’t work for disasters. Insurance needs to be tailored to local contexts, utilise relevant local knowledge, and promote risk reduction while respecting the choices of communities.

In response to a several comments regarding the cautiousness of the IPCC SREX Report and the usefulness of findings given uncertainty surrounding the long-term implications of climate change on disaster events, Dr. Clare Goodess, IPCC SREX Lead Author, explained that the level of certainty of projections depends on the performance of models and relevant, peer-reviewed literature. Dr Goodess outlined the process through which given levels of certainty are decided – low confidence, medium confidence and high confidence – to help the audience to understand why the statements are on the cautious side.

Mr. Ray Kancharla of Save the Children again asked the panel why some aspects such as the impacts of climate change and disaster events on specific groups such as children or climate refugees are missing in the IPCC SREX Report. In response Mr. Bhatt highlighted that there are many issues which are not specifically mentioned in the report, such as gender biases. However, he said, practitioners and policy makers should focus on what the report *does* talk about and consider how the information can be best put to use, how it can be applied to different groups and contexts. Prof. Alimullah Miyan added that the report did deal with different parameters of inequality and future generations.

Dr. Ramesh Vaidya, Senior Advisor at the International Centre for Integrated Mountain Development (ICIMOD) in Nepal, told the audience that it can be very difficult to find resources for disaster risk reduction, particularly for non-structural measures. Positively, Dr. Vaidya believes that the SREX Report has helped to provide the justification for why funds and resources for mitigating disaster risk are required. However, Dr. Vaidya stressed that further economic analysis is needed to better understand the value of disaster risk reduction. The need for more research on the economic benefits of adaptation and disaster risk management was echoed by Dr. Prodipto Ghosh and Mr. Mihir Bhatt, who emphasised that there has been very little economics work done for disaster risk reduction.

Ulka Kelkar, Fellow at TERI and event host, questioned why the SREX Report is silent on the role of the private sector, other than with regards to insurance. Ms. Kelkar asked the panel how governments can work with the private sector on disaster risk management issues. Dr. Alimullah Miyan described disaster risk management as an opportunity for entrepreneurship, stressing that public-private partnerships are important for reducing disaster risk. Mr. Mihir Bhatt pointed out that there is very little data available on the private sector, which makes analysis of private sector involvement in disaster risk management difficult. Gehendra Gurung of Practical Action in Nepal added to the discussion to suggest that in terms of early warning, telephone companies can aid the flow of information to people, and improve access to mobile connectivity in disaster prone areas.

Mr. Ali Sheikh of Lead Pakistan and CDKN asked if there should be greater cooperation among different countries and improved space for collaborative research, for example research on more resilient crop varieties. The answer from the panel was that, yes, there is a need for collaborative research as many countries in the region face similar problems. Taking the crop varieties example, Mr. Mihir Bhatt briefly discussed the implications of reliance on GDP as a measure of development success; crop varieties which are adapted to local climates are often replaced to increase output, and therefore we need to move beyond economic measures of development to improve incentive structures.

The main conclusions and discussion points of this lively session were summarised by Manu Gupta. These included questions about the extent to which the IPCC SREX Report supports greater investment in disaster risk reduction and adaptation, the economic implications of disaster risk reduction, and the need for further research to make explicit those conclusions which are implicit in the report.

2.2 Day 2, Thursday 3rd May

2.2.1 Welcome and Introduction to Day 2, 9:30 – 10:00

A recap of the previous day's discussion was given by Ms. Ulka Kelkar, who outlined the key points. Ms. Kelkar said that there is a need to publish more research on extreme events in South East Asia, improve cooperation on research and disaster risk management in the region, and ensure that children are educated on disaster risk reduction throughout their schooling. Education and raising awareness are key to shifting mindsets in the future generation and for achieving transitional change in disaster risk management. In addition, attitudes toward insurance need to change, and access to insurance improved across the region. Regarding the usefulness of the IPCC SREX Report, Ms. Kelkar summarised the feeling of the previous day: the report spotlight on and supports greater funding of disaster risk management activities, but the report is lacking in some areas including in gender and child centric elements, examples of measures to be taken, and documentation of private sector initiatives.

Dr. Arabinda Mishra, Director of TERI's Earth Science and Climate Change Division, introduced the structure and expectations of the Day 2 Break-Out Groups. There are, said Dr. Mishra, complexities around actions required to adapt to extreme events which need to be considered at all scales. Break-Out Group should begin by considering the implications of extreme events at community, national and regional levels, and should also discuss what is needed to bridge the gaps between scales. Discussions should also consider that we are not starting from a vacuum, as a complex policy landscape already exists; understanding the political landscape is crucial in order to take the right actions to cope with extreme events.

As starting points, Dr. Mishra encouraged the Break-Out Groups to consider:

- 1) The implications of extreme events across political boundaries.
- 2) How to bridge gaps with already existing policies.
- 3) Challenges arising when dealing with extreme events.
- 4) Examples of best practices.

2.2.2. Parallel Break-Out Sessions, 10:00 – 12:00

2.2.2a. Regional Action

Chairman of the Regional Break-Out Group Dhar Chakravarty, of the Ministry of Home Affairs in India, kicked off the session by reminding the group that South Asia is home to more than 24% of the world's population. The region is highly vulnerable to climate change, and all types of climate change impacts are visible and felt here. The IPCC SREX Report provides a valuable analysis of past and predicted climate extremes, though landslides and glacial lake outburst floods, which are an important problem for Nepal and Bhutan, are not dealt with in depth.

To date, regional cooperation in the South Asia region has not been as successful as it could and should be. Positively, at the behest of SAARC, an action plan on climate change has been accepted, and the Thimphu action plan has been adopted for disaster risk reduction and climate change adaptation. However, Mr. Chakravarty said that there is a long way to go, and that there is a still a lack of adequate, local level

information on disaster risk. Gaps in science need to be filled and information downscaled to more operational levels.

Dr. R Krishnan, Executive Director of the Indian Institute of Tropical Meteorology, began by highlighting the need for a climate change and disaster risk management action plan at the regional scale. In addition, he said, regional cooperation in climate modelling is needed. In the South Asia region, the monsoon is a particularly important and challenging component of the climate to model. After outlining a selection of models used for climate modelling in the region, Dr Krishnan explained that future projections are indicating a warning trend in South Asia, but are inconclusive regarding the impact of climate change on regional monsoons. Observations have shown a mixed picture across the region for changing rainfall patterns; for instance, it appears that the number of days with high rainfall is increasing at the regional scale, while in central India there has been a slight decrease in total precipitation. In addition, both floods and droughts have become more frequent, though the extent to which this is a result of climate change, rather than El Nino or other sources of variability, is uncertain.

The audience questioned Dr. Krishnan on a number of technical issues, such as the extent to which rainfall projections vary from model to model, and the implications of South Asia's low density meteorological observation network. Dr. Krishnan explained that while more data is needed, particularly for upper atmosphere interactions, there are some good datasets in the region which are supplemented by satellite data sets. To improve access to data, Dr. Krishnan suggested that data centres be developed, along with training workshops to familiarize analysts.

Dr. Ramesh Vaidya, a Senior Advisor at ICIMOD, followed with less technical discussion points. Dr. Vaidya stressed that the current strategy for disaster risk reduction will not work without integrating climate change adaptation considerations, and without developing longer term vision. This is one of the major messages coming from the IPCC SREX Report. Some countries have developed good strategies for disaster risk reduction, such as Bangladesh, but the strategies need to be adapted to accommodate climate change. In addition, strategies need to accommodate new institutions which have emerged, and put governments and institutions in strong positions for accessing gradually improving funding for climate change measures.

To reduce flood risk specifically, improved regional cooperation and integrated flood risk management is needed, as most river systems are transboundary. Management strategies should include both structural and non-structural measures. As part of this, improved information systems for flood risk management and early warning systems, which better utilize hydro-meteorological data, ICT and satellite technology, are needed to better deal with the increasing incidence of flood events. The 'last mile' of connectivity and filling of gaps is needed. Currently, ICIMOD is upgrading 25 hydro-meteorological stations for sharing real time data, and developing 15 additional stations in Nepal and approximately 200 stations across the region.

One member of the group questioned how communities can access centralised data to help themselves. Dr. Vaidya suggested that communities designate one member to act as a point person for this information.

Sujit Mohanty of the UNISDR told the audience that the science and disaster risk reduction communities are collaborating more than they used to. However, risk management measures need to improve. Economic losses due to disasters have increased in recent decades, as shown in this IPCC SREX Report and

also elsewhere. There are gaps in the Hyogo Framework for Action, which is not sufficiently inclusive of climate change. The question is, exactly where are the gaps and how can they be filled?

The UNISDR is helping countries to monitor and review their disaster risk management strategies. In addition, local governments in parts of South Asia have begun assessing their own strategies for disaster risk reduction. Assessments have shown that there are gaps in risk identification, early warning, and in decision makers' understanding of disaster risk. Knowledge gaps have been known to halt political action on risk management issues. In addition, it has been shown that initiatives for disaster risk management have a relatively low implementation rate. A poor record for implementation is likely due to capacity constraints, and therefore capacity building is key to disaster risk management in South Asia.

To improve disaster risk management in the region, national and state action plans need to become more integrated, and greater cohesion is required between the public and private sectors. To date, South Asia's private sector has been divorced from disaster risk management processes but could contribute significantly to meeting risk reduction goals. Communication, collaboration and cohesion also needs to improve between agencies with overlapping mandates, as there is often duplication of work between agencies in different countries and sectors.

Mr. Mohanty described knowledge in the South Asia region on climate change and disaster risk as multidimensional. There is a wealth of knowledge in the region, which needs to be documented and mapped; institutions such as SAARC are already working on this. Local knowledge also needs to be captured and translated into scientific information more effectively and routinely.

2.2.2b. National Action

In his opening remarks, the National Action Break-Out Group chair Mr. Bittu Sehgal of Sanctuary Asia and the National Wildlife Board emphasised the importance of precautionary approaches in policy design. Mr. Sehgal encouraged the group to discuss, in the context of South Asia: a) the implications of the SREX Report's findings; b) the recommendations and action points; and c) the gaps or shortcomings in policy and institutions.

Dr. Jyoti Parikh, director of Integrated Research and Action for Development (IRADe) and the session's first speaker, spoke to the group about urban vulnerability to climate change and adaptation planning. In recent decades there has been some progress in developing information systems for disaster management India, but data on the vulnerability of Indian cities to climate induced disasters is still lacking. To address this gap, and based on their research, IRADe has developed a framework to assess the vulnerability of cities which incorporates factors including infrastructure, governance structures, socio-economic conditions.

Using this framework, vulnerability studies have already been undertaken for cities including Delhi and Surat. As Dr. Parikh explained, the research has shown that management of water and solid waste, storm water drainage and urban governance are major issues facing Delhi in combating flooding and drought. In addition it has shown that the population of Surat is highly vulnerable to extreme climate and weather events, due in part to socio-economic issues stemming from its large migrant population and governance structure. Using this framework IRADe has demonstrated that vulnerability of cities can be reduced with adequate infrastructure and appropriate institutional mechanisms to manage risk; the research suggests

that remodelling drainage systems, enhancing water storage capacities and developing improved disaster management plans are key.

Prof. Santosh Kumar, from India's National Institute for Disaster Management, focused on India's Disaster Risk Reduction (DRR) planning. India has made significant progress in this regard, which is evident from averted loss of life and property from cyclones and floods. The National Disaster Management Act of 2005 was a significant step forward in addressing disaster risk, and a paradigm shift has taken place in Indian disaster management from response to risk management approaches. Risk reduction planning and mainstreaming, better school safety initiatives, early warning and disaster information systems, and national and state level disaster response funds are thought to have played key roles in India's improved disaster preparedness. However, it is clear that further improvement is needed in India as, on the whole, incidences of disaster events have increased in frequency and severity in recent decades. There is a need to devise institutional mechanisms to draw learning from communities and local government planners to better inform disaster risk management, and to improve the link between development and DRR planning. Dr. Kumar suggested that integrated disaster impact assessments for development projects similar to Environmental Impact Assessment (EIA) would be a good model for making this link.

Mr. Abu Mostafa Kamal Uddin of UNDP highlighted the case of Bangladesh, where coastal regions in particular are becoming increasingly difficult places to live and work. Mr. Uddin felt that the SREX Report findings suggest low confidence in the scenarios relevant to Bangladesh, but that this should not be interpreted as low disaster risk. More research is required to assess the vulnerability of communities in Bangladesh to extreme events. In addition to research, action points for reducing disaster risk include capacity building at all levels of government and community, implementation of no regrets interventions such as raised housing and rainwater harvesting, and policy coherence and coordination among related agencies. Improvements in both vertical and horizontal coordination are needed. Greater regional cooperation for river basin and ecosystem management is also important.

In spite of shortcomings there are some good practices in Bangladesh to be shared. Mr. Uddin described how a proactive stance to disaster risk management in Bangladesh has resulted in a significant reduction in casualties, and highlighted that financial backing for disaster management activities has been increased. Efforts have been made to develop a vulnerability index for different regions in Bangladesh, and to integrate disaster risk reduction, climate change adaptation and development. Mr. Uddin highlighted the Bangladesh Green Development Programme as an example of this; the Programme is an initiative designed to improve community level resilience.

To close the presentations, Mr. Bittu Sehgal emphasized the problem of communicating information about risk at community level. Mr. Sehgal suggested that political leaders should take a greater role in raising awareness of disaster risk by addressing communities directly. Finally, he stressed that: disaster risk reduction should not be seen as an impediment to development; international and inter-regional cooperation is key to dealing with extreme events; and measures to address inequity need to be integrated into national development plans.

In the ensuing discussion, participants from across the South Asia region raised a number of points and concerns. These included one participant from Nepal who felt a larger and stronger research base in developing countries is important for policy makers to make informed decisions and to design effective strategies, and that greater support should be provided to developing countries to achieve this. Another, from India, voiced frustration that too much public money is spent on 'beautifying' cities, instead of

activities to reduce vulnerability of urban communities; to address this, it was suggested that mainstreaming of climate change concerns into development needs to be pursued more seriously. A media representative from India Today told the group that developing an accessible vulnerability index for cities would help the media to highlight areas with high vulnerability, which in turn would help to mobilize public opinion and to encourage policy makers to take action. Dr. Arabinda Mishra, Director of TERI's Earth Science and Climate Change Division, highlighted that the business community has an important role to play in furthering disaster risk management efforts. In addition, as businesses have assets which are potentially at risk from disaster events, they can also play a role as a source of demand for data on disaster risk and can drive improvements in data infrastructure.

In response to these points, the panel stressed the importance of improved regional cooperation and coordination between countries and agencies, and suggested there be joint exercises in disaster management involving countries across the region. Mr. Uddin suggested that international bodies should provide support for country level data generation and research, to help address information gaps in South Asia. Another important issue, they agreed, is the need for improved data management and transfer of knowledge to audiences from government decision makers to the community level. Prof. Kumar suggested that large scale awareness initiatives are needed to communicate knowledge about disaster risk. Finally, Mr. Uddin called for country level dissemination events for the SREX Report, a sentiment which was echoed by others throughout the conference.

2.2.2c. Community Action

In the Community Action Break-Out Group, the panel encouraged to think about the humanitarian consequences of the SREX Report's findings. The SREX Report has reemphasised the problems associated with disasters at community level. There is a clear need for risk reduction mechanisms to reach the most vulnerable people, and to seize every available opportunity to address disaster risk at community level.

However, the group felt that the report had not sufficiently emphasised the inequalities of disaster risk and vulnerability found at community level. In particular, the report fails to capture the how the roles of women and children play a part in determining their increased vulnerability to disaster risk, and therefore misses an opportunity to create awareness of these issues. In this vein, Dr. Govinda Basnet, speaking from the Nepali perspective, encouraged the audience not to think of communities as homogenous units but rather to acknowledge social differentials such as ethnicity, gender, age and class, which cause people to experience the same hazard event differently. The group stressed that there is a need to target inequality and other underlying causes of vulnerability.

One important gap at community level is a lack of data. This problem is twofold; national and regional level data needs to be downscaled to be locally relevant, and local knowledge and practices need to be better documented. The panel pointed out that there is a noticeable lack of local knowledge included in the SREX Report, a feeling which was voiced by a number of people throughout the conference. The need to document local knowledge is pertinent to effective climate change adaptation and disaster risk management. In addition, whether due to socio-economic pressures or induced by climate change or disaster events, migration leads to a loss in traditional knowledge and therefore makes the need to document this knowledge particularly urgent. Local knowledge and practices also need to be reflected in State and National level policy documents.

The panel suggested that local institutions are the most significant bodies for managing disaster risks. These bodies are crucial for managing risk, as they are best placed to understand risk management in the local context. However many local institutions lack the capacity to effectively manage disaster risk. Therefore, appropriate political frameworks need to be put in place, capacity built, and relevant information made more locally accessible to allow local authorities to lead on risk management. In addition, the civil society has an important role to play at local level especially in areas where there is a large gap between government and communities.

Finally, the group raised a number of best practices, including examples of ‘wet droughts’ where localised weather stations and early warning systems have played a vital role in saving crops. In the Sunderbans, the use of traditional knowledge in policy, facilitated by civil society organisations, has helped to increase incomes.

2.3 Report Back from Break-Out Groups and Closing Remarks, 12:00 – 13:30

2.3.1 Report Back

This session, Chaired by Dr. Arabinda Mishra of TERI, featured short presentations from each of the break-out groups.

Reporting for the Regional Action break out group, Dr. Ramesh Vaidya highlighted the need to: document knowledge and best practices; integrate disaster risk management, climate change adaptation and development approaches; and to better consider ecosystems in development plans.

Mr. Bittu Sahgal, for the National Action break out group, recommended that disaster risk management strategies of South Asian countries are better aligned with each other, and also highlighted the need for the valuation of ecosystem services. The group stressed that heads of state should take note of the SREX findings and emphasised the need for informed decision making which systematically utilises the evidence base.

The presentation for the Community Action working group was given by Mr. Gaurav Ray of the IFRC. The group recommended that information on disaster risk needs to be better communicated at the community level, and that best practices need to be documented to support broader implementation of community level disaster risk management. Mr. Ray advised decision maker to “listen more” to local communities and to incorporate more local knowledge into policy.

In the discussion which followed, the audience called for more case studies to highlight best practices and to give practical examples of the design and implementation of disaster risk management initiatives. It was also suggested that the IPCC SREX Report, or Summary Report produced by CDKN, should be translated into local languages to encourage take-up by state and local level decision makers.

2.3.2 Closing Remarks

Representing the IPCC, Mr. Mihir Bhatt said that the value of the report will be in its follow up; the actions that are taken as a result of the report. Mr. Bhatt reminded the audience that the issues outlined in the report *can* be addressed, that it is not impossible to mitigate and to adapt to these risks.

In terms of next steps for research, it is clear that we need to have solid, well defined pilot projects to demonstrate how to respond to the report's findings at regional, national and community levels. Mr. Bhatt suggested, based upon AIDMI's experience, that the best level to start from is the district, and the best mechanism to start with is District Disaster Management Plan. There is also a need to track and to support the report's infiltration across geopolitical, sectoral and institutional contexts in South Asia; to look at which recommendations are and are not taken up, why this is, and how different institutions are using the report in their programming, training and networking. Future research should look more closely at the overlap with gender, children, conflict, and the private sector. Finally, a common message coming through discussions at this SREX Outreach event is that ecosystem-based forms of disaster risk reduction, adaptation and development are needed.

Summarising feedback regarding the IPCC SREX Report itself, Mr. Bhatt said we have heard that the report is useful and useable, cautious but accurate and transparent. Positively, this event has opened up the findings of the report to a large and diverse group of people from South Asia, with different perspectives and experience to feed fruitful discussion.

In his closing remarks, Mr. Håvard Hugas said the event had been very useful for promoting the political implications of the SREX Report. The event has provided a bridge between global level, theoretical research and regional level policy and practice; it has reduced the 'distance' between the research and its users. Mr. Hugas reiterated Norway's support for action on climate change and disaster risk reduction in the South Asia region, and confirmed that the SREX report will be used to inform Norway's programmes on these issues. Norway has allocated significant financial resources and supported many initiatives in collaboration with South Asian institutions, for instance to promote energy security and to develop state policy for action on climate change.

The final speaker of this SREX Outreach event was Mr. Ali Sheikh of LEAD Pakistan and CDKN. Mr. Sheikh highlighted that this series of events mark the first time that a knowledge product from the IPCC has come into the public forum in this way. The disaster risk reduction, development and climate change adaptation communities of practice have, he said, "been sleeping in different beds but having the same dreams"; this report and these events have been important steps in bringing them together. Alongside acknowledgements to the CDKN authors and applauding the effort put into the SREX Report and the regional summary produced by CDKN, Mr. Sheikh concluded by reiterating that the CDKN regional summary should not be confused with the IPCC SREX Report itself or the IPCC SREX Summary for policy makers. The CDKN summary version is much shorter and specifically relevant to Asia, while the IPCC SREX Report itself is global in scope.

3. Impacts

The presentations and discussions at this SREX Outreach Event in Delhi have raised many issues relating to disaster risk management in the South Asia region.

Availability and access to data are two challenges which were highlighted by many people throughout the event. There are many faces to this. For example, more national and sub-national level data is needed, including climate modelling, information on weather patterns and hazards in the region, real-time weather data, and data on the vulnerability of local areas and urban centres to hazards and to climate change. Access to and use of weather information needs to be improved from national through to community level, and more research is needed on the economic benefits of investing in disaster risk management and climate change adaptation. In addition, traditional and local knowledge, and learning from local government planners need to be documented and utilised to better inform disaster risk management.

During this event, speakers and participants often identified greater collaboration, coordination and learning between agencies with overlapping agendas across the region as a crucial measure for improving disaster risk management in South Asia. This includes both vertical and horizontal coordination. Capacity building among these agencies may be needed to achieve this, but doing so would reduce duplication of efforts, improve the spread of best practices, and help policy makers to make informed decisions.

Insurance and risk transfer mechanisms more generally were often brought up during presentations and discussions. The insurance industry in its current form is seen as being inadequate for effective risk transfer in the South Asia region. Especially in rural areas, insurance premiums are considered to be too expensive, and too many people are uninsured. There needs to be more competition among insurance providers, and governments and the insurance industry alike need to be more inventive in creating accessible insurance mechanisms for communities in South Asia. In addition, the need to value and to protect ecosystems was highlighted as a key issue a number of times throughout the event. Ecosystem services are vital especially for rural communities whose livelihoods often depend upon natural systems, and ecosystems such as wetlands are an important buffer against hazards. Many ecosystems in South Asia are deteriorating rapidly and it is seen as crucial that efforts are made to value and to protect these areas.

Regarding opinion on the IPCC SREX Report, participants have found this to be useful, usable and timely, and judge the predictions to be slightly cautious. Participants have reported that the report provides a strong justification for increasing the funding and resources available for disaster risk management practices. However, participants would like to see more practical advice and examples of how to go about dealing with increasing disaster risk. National outreach events are now called for, and indeed several are already planned including an event in Islamabad, Pakistan and another in Odisha State, India.

A number of speakers and participants commented that the event was valuable for improving the accessibility and profile of the IPCC SREX Report findings. The event has helped to reduce the 'distance' between theory and practice, and between the global and the local. Participants commented that the event was very effective in mobilising an informed discussion on critical issues of climate extremes, and in communicating the findings to a diverse group of stakeholders including the media. Others valued the opportunity to meet with IPCC SREX authors to discuss aspects of the report and other issues which were not included, such as the link between disasters and conflict. Participants found the audience to be active and broadly representative, and several individuals expressed pleasure at hearing the desire for action among stakeholders. While it was clear from the discussions that policy makers and practitioners are keen

to see more practical guidance of appropriate action to be taken, several participants found the examples given by speakers and others present to be of value; for example, Dr. Zafar Iqbal Qadir of the National Disaster Management Authority in Pakistan valued the lessons shared about a micro insurance model used in Madhya Pradesh, India. One individual reported that the event had helped to raise awareness of the existing knowledge gaps in the region, and has acted as an inspiration to devote more effort to knowledge generating activities. In addition, one IPCC Coordinating Lead Author felt that the event had been useful for helping to understand what user groups want to see in IPCC reports.

The event was covered by print, video and online media in India and the broader region. This included coverage in the Asian Age newspaper and Reuters Alertnet. Viewpoints about the SREX Delhi Outreach Event and SREX findings appeared online, including a blog by Jyotiraj Patra of Concern International which appeared on orissadiary.com, indiaeducationdiary.in and eindiadiary.com, a blog by Rahul Kumar of OneWorld South Asia on Climate Himalaya (chimalaya.org), and blogs by Mihir Bhatt of AIDMI, and by Elizabeth Colebourn and Amy Kirbyshire of CDKN, on the CDKN website (cdkn.org). In addition, the event was telecast on Indian news channel KANAK TV, and ran on bulletins on CNN-IBN India throughout the day on 2nd May. One media representative told of further plans to write on the IPCC SREX report in local languages so as to make policy makers and others aware of the findings for South Asia.

Annex 1: Agenda

IPCC SREX Regional Outreach Meeting Delhi, 2nd – 3rd May

Agenda, Day 1, Wednesday 2nd May 2012

Desire Hall, Le Meridien Hotel

9.00-9.30 Registration

9:30 – 10:30 Welcome Session

- Dr Rajendra K Pachauri - IPCC Chairman – Welcoming remarks
- Hon'ble M Shashidhar Reddy, Vice Chairman, National Disaster Management Authority, India
- Dr Tishyarakshit Chatterjee - Secretary, Ministry of Environment & Forests, India
- Mr Krishna Gyawali - Secretary, Ministry of Environment, Government of Nepal
- Ms Ulka Kelkar – Fellow, Earth Science and Climate Change, TERI – Vote of thanks

10.30-11.00 Tea/Coffee

11.00 – 12.30 Panel Discussion of Major Findings

- Dr Rajendra K Pachauri - IPCC Chairman, introduction to the key findings
- Dr Clare Goodess – IPCC SREX lead author, trends in climate extremes in South Asia
- Dr Apurva Sanghi – IPCC SREX lead author, impacts in South Asia
- Mr Mihir Bhatt – IPCC SREX co-ordinating lead author, regional case studies

12.30-14.00: Lunch

12.30 – 13.00 Press conference

- Moderator – Mr Robert Donkers, Minister Counsellor for Environment, Delegation of the European Union to India
- Dr Rajendra K Pachauri - IPCC Chairman

14.00 – 15.30 Policy and Practice Forum

Presentation by regional and local policy makers, practitioners, private sector on instructive projects or programmes on related topics, reflecting on implications of the report for existing approaches

- Chair – Mr Ravi Agarwal, Director, Toxic Links
- Mr Ritesh Kumar - Partners for Resilience Programme/ Wetlands International South Asia
- Dr Satendra - Director SAARC Disaster Management Centre
- Dr Thirumalachari Ramasami - Secretary, Department of Science & Technology, India
- Mr Mohammad Didarul Ahsan - Additional Secretary, Ministry of Environment and Forests, Bangladesh

15.30-16.00: Tea/Coffee

16.00 – 17.30 **SREX Hard Talk**

Chaired debate on a key question raised by SREX

- Chair – Dr Manu Gupta – SEEDS
- Dr Zafar Iqbal Qadir - Chairman, National Disaster Management Authority (NDMA), Pakistan
- Mr Mihir Bhatt – IPCC SREX co-ordinating lead author
- Prof. M Alimullah Miyan - Chairperson, South Asian Disaster Management Centre (SADMC) and Founder & Vice-Chancellor of IUBAT—International University of Business Agriculture and Technology, Dhaka, Bangladesh
- Dr Prodipto Ghosh – Member of Prime Minister’s Council on Climate Change, India

18.00: **Evening Reception, TERI, India Habitat Centre (IHC), Lodhi Road**

Agenda, Day 2, Thursday 3rd May 2012

Desire Hall, Le Meridien Hotel

9:30 – 10.00 **Welcome and Introduction to Day 2**

- Dr Arabinda Mishra - Director, Earth Science and Climate Change Division, TERI

10:00 -12.00 **Parallel Break Out Group**

	Break Out Group 1	Break Out Group 2	Break Out Group 3
Topic	Regional action (Room 2000, 20 th floor)	National action (Desire Hall)	Community action (Room 2010, 20 th floor)
Chair	Mr P G Dhar Chakrabarti, - Additional Secretary, Ministry of Home Affairs, India	Mr Bittu Sahgal - Editor, Sanctuary Asia; Member, National Wildlife Board	Mr Azmat Ulla – International Federation of Red Cross
Speakers	<ul style="list-style-type: none">• Mr Sujit Mohant - UN International Strategy for Disaster Reduction for Asia & the Pacific• Dr Ramesh Vaidya - Senior Advisor, ICIMOD• Dr R Krishnan - Indian Institute of Tropical Meteorology	<ul style="list-style-type: none">• Prof. Jyoti Parikh - IRADe, Member of Prime Minister’s Council on Climate Change, India• Prof. Santosh Kumar - National Institute of Disaster Management, India• Mr Abu Mostafa Kamal Uddin - UNDP, Bangladesh	<ul style="list-style-type: none">• Mr Harjeet Singh – ActionAid International• Mr Ram Kishan - Practical Action, Nepal• Dr Govinda Basnet – DRM Expert, Nepal

12.00 – 12:45 **Report back from Working Sessions**

- Dr Arabinda Mishra, Director of Climate Change Division, TERI
- Representatives from Break Out Groups

12:45 – 13.30 **Closing remarks and thanks**

- Mr Mihir Bhatt – IPCC SREX co-ordinating lead author
- Mr Håvard Hugas, Counsellor, Energy and Climate, Embassy of Norway, India
- Mr Ali T Sheikh, CEO, Lead Pakistan

Annex 2: Participants List

Name	Organisation
Harjeet Singh	ActionAid, India
Mihir Bhatt	All India Disaster Mitigation Institute (IPCC author)
Arun Kumar	Alternate Hydro Energy Centre, Indian Institute of Technology
Aditi Kapoor	Alternative Futures, India
Subodh Kumar Singh	Bharat Media
Rajdeep Chowdhury	Biltech Building Elements Ltd, India
Amy Kirbyshire	CDKN
Elizabeth Colebourne	CDKN
VK Kanjlia	Central Board of Irrigation and Power, India
SC Nakra	Central Board of Irrigation and Power, India
PP Wahi	Central Board of Irrigation and Power, India
D K Sharma	Central Soil Salinity Research Institute, India
Manoj Kumar	Centre for Air Power Studies, India
Anil Arora	Centre for Environment Education, India
Prabhjot Singh Sodhi	Centre for Environment Education, India
Prandip Das	Centre for Environment Education, India
Vidhu Tyagi	Centre for Science and Environment, India
Tirthankar Mandal	Climate Action Network (CAN)-SouthAsia
Christoffer Grønstad	Climate and Pollution Agency, Norway
Juhi Chaudhary	CNN-IBN
Jyotiraj Patra	Concern Worldwide India
Robert Donkers	Delegation of the European Union to India
R.B.Singh	Delhi School of Economics
Krishna Anand	Delhi School of Economics, Dept of Geography
Ajay Kumar	Delhi School of Economics, Dept of Geography
Kamal Prasad Regmi	Department of Water Induced Disaster Prevention, Nepal
Thirumalachari Ramasami	Department Science & Technology, India
Alesandro Mascuzza	DFID India
Clare Shakya	DFID India
Nidhi Sarin	DFID India
Phil Marker	DFID India
Ritu Bharadwaj	DFID India
Oliver Mirza	Dr Oetker India
Govinda Basnet	DRR Expert, Nepal
Doulat Kuanyshev	Embassy of Kazakhstan
Assel Nogaibayeva	Embassy of Kazakhstan
Arati Davis	Embassy of Sweden, India
Gerolf Weigel	Embassy of Switzerland, India
Yashpal Singh	ENV Developmental Assistance Systems, India
Kanwarjit Nagi	Environmental Design Solutions

Swati Shinde	Environmental Management Centre, India
Lokendra Thakkar	Environmental Planning and Coordination Organization, Department of Housing and Environment, India
Ajeya Bandyopadhyay	Ernst & Young, India
Shuvendu Bose	Ernst & Young, India
Ramesh Babu	Evangelical Fellowship of India Commission on Relief, India
Susanne Schwan	GIZ
Joyashree Roy	Global Change Programme, Jadavpur University, India
R S Prasad	Green Rating for Integrated Habitat Assessment, TERI, India
Madan Jaira	Hindustan Media Ventures Ltd
Sunandan Tiwari	ICLEI South Asia - Local Governments for Sustainability
Emani Kumar	ICLEI South Asia - Local Governments for Sustainability
Azmat Ulla	IFRC, India
Gaurav Ray	IFRC, India
Ajit P Tyagi	India Meteorological Department
Tajinder Singh	Indian Council of Forestry Research and Education
Vibha Arora	Indian Institute of Technology, Department of Humanities and Social Sciences
R Krishnan	Indian Institute of Tropical Meteorology
Arvind Gupta	Institute for Defence Studies and Analyses, India
Col Pradeep K Gautam	Institute for Defence Studies and Analyses, India
Shebonti Ray	Institute for Defence Studies and Analyses, India
Priyank Jindal	Integrated Research and Action for Development
Jyoti Parikh	Integrated Research for Action and Development, India
Indrani Phukan	Intercooperation India
Ramesh Vaidya	International Centre for Integrated Mountain Development (ICIMOD)
Rajesh Kumar Miglani	International Finance Corporation, World Bank Group
Harinder Pal Singh Kalra	International Media and Information Literacy Survey, and Punjabi University
Rajendra Pachauri	IPCC Chairman
Mr Bandopadyay	Jasubhai Media
Preeti Singh	Jasubhai Media
Nasser O Okoth	Kenya High Commission
Haleen Haus	LEAD India
Bhawana Luthra	LEAD India
Seema Awasthi	LEAD India
Sunder Subramaniam	LEAD India
Ali Tauqeer Sheikh	LEAD Pakistan & CDKN, Pakistan
Mohammad Didarul Ahsan	Ministry of Environment and Forests, Bangladesh
Tishyarakshit Chatterjee	Ministry of Environment and Forests, India
Krishna Gyawali	Ministry of Environment, Nepal
P.G.Dhar Chakrabarti	Ministry of Home Affairs, India
Siddharth Singla	N/A - private practitioner
M. Shashidhar Reddy	National Disaster Management Authority, India
Zafar Iqbal Qadir	National Disaster Management Authority, Pakistan
Santosh Kumar	National Institute of Disaster Management, India

Anil K Gupta	National Institute of Disaster Management, India
BV Phanikumar	National Telugu Delhi
Dinesh Bhuju	Nepal Climate Change Knowledge Management Centre
Sanjoy Day	News Views & Reviews
R Agnihotri	NewslineToday.com
Rahul Kumar	OneWorld South Asia
Ritesh Kumar	Partners for Resilience Programme/ Wetlands International South Asia
Murali Kunduru	Plan International, India
Mudasser Siddiqui	Plan International, India
Ram Kishan	Practical Action, Nepal
Gehendra B. Gurung	Practical Action, Nepal
Prodipto Ghosh	Prime Minister's Council on Climate Change, India
RK Mehta	Refrigeration and Airconditioning Manufacturers Association (RAMA)
Håvard Hugas	Royal Norwegian Embassy, India
Signe G Gilen	Royal Norwegian Embassy, India
Vivek Kumar	Royal Norwegian Embassy, India
Satendra Singh	SAARC Disaster Management Centre
N Muhammed Akram	SAARC Disaster Management Centre
Bittu Sahgal	Sanctuary Asia
Mohammad Farman	Sarokar Group
Pradeep Kumar	Save the Children
Ray Kancharla	Save the Children, India
Manu Gupta	SEEDS India
Atanu Ganguli	Society of Indian Automobile Manufacturers
Alimullah Miyan	South Asian Disaster Management Centre, International University of Business Agriculture and Technology
Debanjana Choudhuri	TERI, India
Noemie Le Prince Ringuet	TERI, India
Sonal Bajaj	TERI, India
Sudheer Katoch	TERI, India
Arabinda Mishra	TERI, India
Ulka Kelkar	TERI, India
Supriya Francis	TERI, India
Aditya Ragwa	TERI, India
Arnab Bose	TERI, India
Camille Raillon	TERI, India
Deepti Mahajan	TERI, India
Divya Mohan	TERI, India
Harsha Meenawat	TERI, India
Ipsita Kumar	TERI, India
M. Madhusoodanan	TERI, India
Maggie Lin	TERI, India
Navarun Varma	TERI, India
Pranita Choudhry	TERI, India
Ridhima Sud	TERI, India

Saurabh Bhardwaj	TERI, India
Somnath Mitra	TERI, India
Bibhu Prasad Nayak	TERI, India
Sambita Ghosh	TERI, India
Rashme Sehgal	The Asian Age
Ashirbad Raha	The Climate Group
Aditya Pundir	The Climate Reality Project India
Adam Roberts	The Economist
Anand J	The India Today Group
Dearton Thomas Hector	The India Today Group
Nita Bhalla	Thomson Reuters, India
Ravi Agarwal	Toxic Links
Kedar Rijal	Tribhuvan University, Nepal
Nagendra Raj Sitoula	Tribhuvan University, Nepal
Sudarshan Chhotoray	Uday India
Jai Kumar Gaurav	UNDP
Ramesh Kumar Jalan	UNDP
Abu Mostafa Kamal Uddin	UNDP, Bangladesh
Ram Boojh	UNESCO
Sujit Mohanty	UNISDR
Clare Goodess	University of East Anglia, UK (IPCC SREX author)
Marcella D'Souza	Watershed Organisation Trust
Apurva Sanghi	World Bank (IPCC SREX author)
Sangeeta Agarwal	WWF India
Sudatta Ray	WWF India