"Mainstreaming of Disaster Risk Reduction- Climate Change Adaptation (DRR-CCA) in Development: Policies and Practices"

Key actionable points from the conference:

The funding gap which exists between NAPCC getting implemented and the present state is huge. Ability to **access and leverage international climate change finance** is important.

More attention needs to be paid to the **monitoring and measuring of mainstreaming**. This should include an assessment of inclusion of gender issues and BPL families in climate change planning.

Risk diversification in the context of unpredictable climate patterns is necessary. The options need to include effective programs of contingency crop planning, crop diversification including the use of hazard resistant crops as well as promoting supplementary income generation from off-farm and non-farm activities.

The main obstacle in the path of government departments being able to address climate change concerns is **dedicated personnel**. Officials need to be highly skilled and trained. Additional qualities that an official needs to have in order to function effectively include empathy and communication.

Detailed procedures that list the precise steps that are to be implemented in case of an emergency and by whom need to be put into place. This will ensure that systems work irrespective of the calibre of the individual official in position at that time.

Preparation for a disaster, as well as risk reduction should be incorporated into the **school curricula**. This will ensure that citizens who are usually the first on the scene of a disaster are well-equipped to deal with emergencies. This will also reduce dependence on the National Disaster Response Force.

Adequate budget, dedicated staff, capacity development, a monitoring framework, and Interdepartmental cooperation- these need to be in place for effective mainstreaming. -Sh. V.N. Garg Imagine you are in presence of a marginal farmer who owns one acre of land, in Hardoi, in the end of July. There has been very scanty rainfall. This person is dependent purely on rain for irrigation. There is some rain that monsoon, but the meteorological department is not in a position to tell him if he should sow or not. One day, following some rain, the farmer takes the risk to sow. The rains then fail. The farmer does not have the money to buy water from private tubewells, and no access to a canal. In September, the state notifies the areas as drought prone. A month later a team comes to assess the loss. They expect the district commissioners to give detailed information. Crop insurance, banks wait for data on yield of paddy crops- this comes in November. The agricultural department tells him to sow oil seed crops as contingent. However, this farmer has neither money nor water. This makes me think ,what do we have in place?

I feel humble because I have no solution

Shri V.N. Garg, Agriculture Production Commissioner, Govt. of Uttar Pradesh

Mr. Garg narrated this story during a workshop that deliberated on how state and national policies can be formulated to help this marginal farmer and the many others who are facing adverse impacts of climate change.

Background:

DRR (Disaster Risk Reduction) and CCA (Climate Change Adaptation) approaches are integrated at national level through India's commitment to Hyogo Framework for Action (HFA 2005-15), National Action Plan on Climate Change (NAPCC) and other programmes of government. There is an urgent need of integrating such programmes at subnational levels (state or district levels)by exploring and developing the required policy and programmatic intruments/ mechanisms for creating enabling environment for large scale implementation. Agencies such as the State Disaster Management Authorites (SDMAs), District Disaster Management Authorities (DDMAs) and Urban Local Bodies are needed to have a forward looking approach in their planning and implementation activities that accounts for range and trends in climate projections. Furthermore, an array of development departments (such as those involved in water supply, health, agriculture and urban development) undertake activities that influence climate and disaster resilience. However, as flagged in many platforms very little effective horizontal coordination exists between departments especially on integrating DRR and CCA concerns into their sectoral programmes. Promoting climate sensitive decentralised disaster management planning in DDMAs and at ward levels represents a potential point of entry for addressing the above gap.

Uttar Pradesh has contributed some innovative experiences at national and international levels through pilot interventions. The experiences of integration of DRR and CCA in district planning at Gorakhpur has helped in developing Training Module by National Institute of Disaster Management (NIDM), Govt of India which has been shared with all the 600+ districts of the country. The Ward level micro-resilience planning has provided experiences and knowledge towards decentralized urban planning for the enhanced resilience of the cities. There are various programmes of Govt of UP which can help in this integration of CCA and DRR at the ground level if concerted efforts are made at policy and practice levels.

A national workshop - 'Risk to Resilience 2014' was organized by NIDM, Govt of India on 28thJanuary 2014 in collaboration with GEAG and ISET which was attended by various state governments and national institutions shared their experiences on integration of DRR-CCA. Various eminent speakers from institutions such as LBS Academy, MoHUPA, MHA, NIUA and Planning Commission flagged the urgent need for this integration.

In continuation of this, a one-day State level workshop titled - "Integration of DRR-CCA: Policies

and Practices" is was organized on 20th October 2014 at Lucknow.

Goal of the workshop: The stated goal of the workshop was to 'facilitate deliberations on critical issues in integrating disaster and climate risks in development planning' with a focus on the implications of hydrometeoreological disasters due to climate change for the decentralised planning in the state and elsewhere.

• Recent developments in concepts and insights on disaster risk reduction and climate resilience;

• Practical experiences on decentralised planning to address challenges posed by disaster and climate risks; and,

• Enabling disaster and climate risk reduction: policies, programmes and institutions at multiple scales—from local to state to national.

Several speakers added their expectations from the workshop. Mrs. Leena Johri, Secretary & Relief Commissioner Govt. of U.P. mentioned that the State Disaster Policy is in the process of being finalised. Issues regarding Climate Change that arise from this workshop will be integrated in it. The workshop would also help in identifying measures that promote development objectives while also yielding co-benefits for addressing DRR & Climate Change effectively. Shri Mihir Bhatt, Director, All India Disaster Mitigation Institute expressed the hope that the workshop would develop a consensus as to the measures needed to implement 'risk-to-resilience' objectives. These could then be shared with the National Disaster Management Authority and HFA2. Dr. Shiraj Wajih stated that the influence of policies and the changes needed in them are to be highlighted in this workshop, which will show direction to climate change adaptation and disaster risk reduction. Dr. Anil K Gupta (Head, Policy & Planning, National Institute of Disaster Management, Gol)said that the NIDM's goal was to integrate all the learnings from other states and with the organisations here, and take it further to direct their policies.

Inaugral Session:

Disasters do not need any introduction. The state had been faced with hail, drought and floods just in the last few months. Dr. Shiraj Wajih began the session by explaining that the Gorakhpur Environmental Action Group has been working towards climate change adaptation with the hope that the state, using its experiences with decentralised planning for climate change, will provide direction to the policy and practice in the nation. Dr. Anil K Gupta confirmed that the mainstreaming and replication in other areas of the country and beyond of the model that has

Climate change increases extreme events; when our vulnerability is high and preparation low, these extreme events manifest themselves as a disaster. been developed in Gorakhpur is needed. Since the district governments are also part of this workshop, the deliberations will be taken ahead to the districts. Not just plans, but implementation is required. The Gorakhpur model is applicable beyond the country since our neighbouring countries also have a district system.

Food security, natural resource management, and livelihood

security are linked to disaster management and increased resilience. People who do not have food security and livelihood security are most vulnerable to disasters. Understanding these links, it's relationship to land holding patterns, and the increase in vulnerabilities due to climate change, all needs to be done as part of this workshop. Climate change increases extreme events; when our vulnerability is high and preparation low, these extreme events manifest themselves as a disaster.

Shri Mihir Bhatt, Director, All India Disaster Mitigation Institute remarked on the timeliness of the

workshop. IPCC's report that examined the inter-relationship of climate change and disasters was released exactly three years ago. TERI's report was released two moths ago. AR5's recommendation that climate change and disaster planning needs to be brought together is being implemented in this workshop. In January, GEAG and other organisations had put out a 'risk-to-resilience' report. This too is being taken forward-all this makes the workshop timely. Any later, and this workshop would have been delayed.

Along with the timing of this workshop, its location was also deemed to be appropriate. Mr. Mihir Bhatt considered it apt since the first attempt at decentralised planning for increasing resilience

If there is to be any prioritisation then Uttar Pradesh should take the lead in terms of vulnerable populations and experienced impacts. to climate risk was carried out in Gorakhpur, Uttar Pradesh. Ms Nilofar Porzande, Chief of State, UNICEF, suggested that Uttar Pradesh's vulnerabilities, with its being the most populated state with marginalised communities, made it important to take up this work in here. She went on to say that there are many tools that can be used to accelerate

climate change resilience and vulnerability mapping. There is a need to increase awareness on this topic. For this reason, networking with a variety of organisations and increasing capacity of NGOs, state governments, and communities is important. Sharing and documentation of best practices are important-this workshop is a wonderful opportunity, especially since there are guests from other states as well as global experiences that can be tapped into. The future, our survival, and the kind of world we are passing on to our children depend on our commitment to this regard.

Mrs. Leena Johri, Secretary & Relief Commissioner Govt. of Uttar Pradesh confirmed the state's increasing vulnerability. Eastern Uttar Pradesh has always been flood-prone, but in the last few years, western Uttar Pradesh has begun facing floods. Bundelkhand is drought prone. The recurrence period of drought was earlier 6 to 8 years, but now this period of recurrence is narrowing down with droughts every 3 years or so. The terai region is in earthquake zone 4; while 31 districts of Uttar Pradesh are in earthquake zone 3. Furthermore, no matter if the disaster is natural or man-made, the poor of Uttar Pradesh are most vulnerable.

Fortunately, several initiatives by the Uttar Pradesh aim to address potential disasters. With the Uttar Pradesh disaster management act (2005), Uttar Pradesh was one of first three states to enact this. The SDMA is set up and functional. A state disaster management institute has also been set up in 2011, which has conducted training for 6500 officials and other stakeholders. Disaster management module adopted for most service training programmes.

Disaster management curriculum has been adopted in Uttar Pradesh board class 8 to 12. Exclusive emergency operation centres are set up at state level and 13 district headquarters. In other districts, EOC is functional in the collector's office.

The national building code is amended and adopted. Earthquake resistance certification is now mandatory. State fire safety act is passed. DDMs is formed in all states and fund provision has been made. All new primary school buildings are earthquake resistant since 2006. SDMPs have been prepared and shared with the NDMA and different departments. The state is now waiting for feedback to make the State Disaster Management Plans sensitive to the requirements of various departments.

18 Hazard specific plans have been prepared at the state level after consultation with academia and experts. Standard operating procedures for 14 Emergency Support Functions including media, drinking water, sanitation, public health and transport have been prepared. With the support of UNICEF, sectoral workshops and meetings are being done with the concern departments for DRR mainstreaming. A unique Community Based Training programme is being implemented in 9000 most vulnerable Gram Panchayats of the state in which 4.5 lakh community volunteers are being trained on disaster management.

70% of state resources are planned and budgeted at state level- thus it is necessary to have disaster risk reduction and climate change adaptation plans at the state level. Part of the reason of taking up these initiatives is that responsibility for the large population is on the Uttar Pradesh government. Climate change can no longer be ignored and governmental planning needs to take this into account. Mr. Suresh Chandra, Principal Secretary, Govt. of Uttar Pradesh said that any plan that is not

inclusive of community, is not efficient. It is necessary to train every citizen to be capable to fight in times of disaster, so that they are not dependent on government help. For this, disaster preparation needs to be a part of curriculum. As a policy, this needs to be monitored regularly. Infrastructure creation, whether hospitals, schools, or residences, need to factor disaster risk reduction in planning and design.

In his address, the chief guest Mr.Garg spoke at length about the necessity of multiple strategies to address climate change issues. If one considers climate change adaptation vis a vis climate change mitigation; the latter deals with causal factors while adaptation deals with the effect of these causes on different areas of economy and life. Climate change adaptation is more related to disaster risk reduction and is often the focus of our policies. But that does not mean we ignore mitigation.

The various stakeholders are familiar with disasters and our vulnerability. Now, there is another factor to be considered. How can climate change adaptation be adapted to disaster risk? There is a certain extent of overlap, especially in assessment of vulnerabilities, flood management etc. But there are also non-overlap areas such as earthquakes. We still need to decide whether it is possible to integrate the two, at least in areas where they are overlapping.

Mainstreaming is finding a place for disaster risk reduction in our policies and processes. The GEAG document is first of its kind in the country, and is a very important beginning. However, this is still just a beginning and much more needs to be done.

There are many budgetary implications since the financial requirements of climate change adaptation measures are high. This needs to be provided for. Similarly, if mainstreaming of disaster risk reduction is to be done in all departments a comprehensive monitoring framework needs to be established

Mainstreaming of climate change adaptation and disaster management is not just the responsibility of the government but of all stakeholders, including international non-governmental organisations. Red Cross has taken steps in this regard; they have come out with a manual on mainstreaming of climate change adaptation and disaster management.

Within the government, it is necessary to move beyond the district. District planning is a small part of the overall planning within a state. 70% of state resources are planned and budgeted at state level- thus it is necessary to have disaster risk reduction and climate change adaptation plans at the state level.

The department of environment had set up seven mission at the behest of the Central government to develop a state action plan. Despite a lot of efforts, this work has not been completed- interdepartmental cooperation is against the way the government departments work, the tendency of the government is to work in silos.

Mainstreaming fatigue is revealing itself in the governments. Departments already have so many responsibilities on their hands, that anything more is difficult to handle. Formal procedures are also not in place.

Technical Session-1:

Disaster Risk Reduction-Climate Change Adaptation: Concepts and Insights

Ms Margarita Tileva, Chief, DRR Section, UNICEF, New Delhi

Climate change impacts everything. In India, it is a combination of environmental and development issues. Proved impacts are increased frequency of floods and extreme events, shrinking of glaciers, rapid desertification and increasing food insecurity leading to massive displacement. Adaptation is not getting as much media attention as mitigation, but is as important if not more.

Our key weaknesses are a narrow approach to response, focused on reactive action rather than resilience, vulnerability prediction and risk mitigation. Mitigation is linked to energy use and

Integrate a definite institutional mechanism for implementation and monitoring along with detailed action plans efficiency. Adaptation is linked to production systems, heath cares, ecosystem resilience, skill building, cropping patterns and community strengthening. To respond to climate change, we need to combine the two. DRR and CCA focus on different things. CCA is the long term adjustment to changing climate patterns. DRR is risk management of geophysical hazards. Climate risk management is the intersection of these two and needs to be focused on for

mainstreaming.

The South Asia consultation on climate change adaptation was held recently and it came up with some key recommendations.

Policy:

• Develop relevant targets for DRR and CCA to be incorporated in SDGs and National Frameworks for Action

- Integrate CCA/DRR measures in development planning for all sectors (ecosystem based planning)
- Legal and regulatory frameworks for relevant budgetary allocation of dedicated DRR/CCA thematic funds (currently funds mostly for mitigation). DRR financing (beyond rescue and relief) as important as climate financing (currently not available hence compromising adaptation and resilience).

• Diversification of economy with special focus on diversified Food Security Strategies

• Strengthen/ develop Early Warning Systems and institutionalize comprehensive Hazard Risk Vulnerability Assessments

Implementation:

- Build capacity of all stakeholders community, authorities, elected representatives and others by involving them in planning and implementation of Climate Resilient Development and enhance their preparedness and response skills
- Disaster management to move beyond rescue and relief and focus on improved capacity and action in prevention, mitigation and preparedness and evidence based (assessment based) response, reconstruction and rehabilitation.
- Develop strategies and undertake action to build resilience of vulnerable communities.
- Effective monitoring and data collection systems.

• Incorporate local knowledge, local community adaptation action/ coping mechanisms in sustainable development. Educate local communities to understand possible climate change impacts to generate increased demand.

• Focus on local adaptation efforts - generated locally in considering local contextual needs and constraints.

• Promote regular interaction between community and policy makers. Involve local communities in the overall management and maintenance of local adaptation project.

• Scaling-up and regional replication of successful adaptation projects

• Education and communication of climate risks and adaptation options to both rural and urban communities. Scientific knowledge to be communicated in a simplified manner. Build capacity/ awareness of local media.

• Strengthen social protection programs focusing on adaptation and resilience. Funds available but programs not strong enough.

• Improve access to climate financing for communities and CSOs.

The consultation also came up with specific recommendations for India:

- Establish and/or strengthen existing mechanisms for convergent action
- Address Natural Resource Management: contributes to improved resilience. Policies to incorporate traditional wisdom (e.g. encouraging use of traditional crop and cattle varieties).
- Strengthen bottom-up planning process and capacities of local systems. Plans must be more "people oriented", incorporate priorities of people/ "people's voice".
- Improve access to classified data to support research and early warning systems
- Conduct research on biodiversity
- Strengthening systems to enable reach out to the last person
- Flexibility and structure for climate related funding mechanism (including for DRR).
- Improve emergency management services (beyond rescue and relief, stronger focus on sustainable, environmental appropriate/ sensitive recovery).

In dealing with climate change, India needs to focus on the following:

- Greater focus on prevention (currently limited) & resilience (lacking)
- People centered vulnerability assessments
- Technical and institutional capacities for sustained action including scientific knowledge
- Monitoring frameworks
- Technologies and financial issues
- Coordination and synergies with the NAPCC

India's climate change adaptation mechanisms need to integrate a definite institutional mechanism for implementation and monitoring and detailed action plans. At the same time, various financial and technological options need to be explored. Action plans need to constantly evolve and be updated based on evidence to address risks and incorporate lessons learned.

The national action plan on climate change was initiated to create inclusive & sustainable development strategy sensitive to climate change. The state action plans are necessary to add a local context to the national policies and help states to address climate change issues. So far, twenty SAPCCs have been approved by the National Steering Committee of the Ministry of Environment, Forests and Climate Change (MoEF&CC). Nine SAPCCs are approved or are being considered by the Expert Committee on Climate Change of the MoEF&CC. Possible sources of funding for implementation of SAPCCs are Line Ministries, State Budget, MoEF&CC, Carbon markets, international mechanisms and Multilaterals' and Bi-laterals' Climate Change Action Programme .

Main features of Uttar Pradesh State Action Plan on Climate Change Mr A A Khan, OSD, Directorate of Environment

One of the most populous states of India, Uttar Pradesh is prone to climate change impacts. These make it susceptible to the threat of floods, droughts, cloudburst, heat strokes and excess rainfall. Climate change induced disasters have brought hardship, economic losses and affect health, food security, natural resources and biodiversity.

The region must find and adopt new patterns of urban development, energy production and consumption, landuse, and waste management Uttar Pradesh State action plan is build to address these issues, esp state-specific priority issues. The following actions have been taken

• As a follow up to the PM's NAPCC for combating the impacts of climate change, UP with the help of GTZ prepared SAPCC. 7 Core Groups constituted under chairmanship of concerned Principal

Secretaries/Secretaries.

• A High Power Committee constituted under the Chairmanship of Chief Secretary, GoUP to review the progress.

• Environment Directorate nominated as nodal agency for Preparation of SAPCC, Inter-Departmental Co-ordination, Reviewing and providing assistance to various core groups.

Eight state-based technology missions have been created within their specific departments to provide inputs to the SAPCC. These include, among others, sustainable agriculture, water, solar energy etc. The missions are responsible for providing comments to the action plan, developing long term and short term action plans and providing an estimate for these.

Draft Report consists of 7 chapters.

- Introduction
- Current baseline and climate projections
- State GHG emission
- Climate Change Impacts & vulnerability
- Present policies and programmes and Linkages with NAPCCs
- Sectoral Climate Change Strategy and Action Plan.
- Cross Cutting Issues and Integrated Approach.

Mr. Khan also described predictions that had been generated through this report. The Uttar Pradesh SAPCC predicts an increase in annual rainfall of 25-35% by 2080. There will also be an increase in temperature by 4.5 centigrade by 2080. Warming may be more pronounced over northern India. Adverse impacts more likely on agriculture, water resources, health, forests and biodiversity.

Uttar Pradesh is highest greenhouse gas emissions emitting state contributing nearly 14% of national greenhouse gas emissions. Fossil fuel consumption, Power generation & agricultural activities are major factors responsible for GHGs. Mr. Khan also detailed the sources and global warming potential of the three chief green house gases carbon dioxide, methane and nitrogen oxide. Sonebhadra's thermal power plants and aluminium company make it the highest carbon dioxide emission district. Barabanki, Mathura and Mirzapur are the districts that emit the largest amount of methane. Of these, enteric fermentation of livestock accounts for most of Barabanki and Mirzapur emissions while oil and gas refining is the major source of methane in Mathura. Kheri, Moradabad and Muzaffarnagar are highest emitting districts of nitrogen oxide due to chemical fertilizer use.

Agriculture contributes one-third of Uttar Pradesh's economy and employs two -thirds of

workforce. The sector is highly dependent on monsoon. Sustainable agricultural mission is crucial to combating climate change impacts.

The region must find and adopt new patterns of urban development, energy production and consumption, landuse, and waste management or else it will find itself increasingly contributing to the global climate change problem and broader resource degradation—with rising negative consequences for state.

There is considerable discussion about different aspects of resilience, mitigation and adaptation. Experts and community members thing differently. Communities do not care about definition; they want safe and sustainable lives with access to water, sanitation, livelihood and health care. That said, all measures have multiple impacts. Thus mitigation options may also add to adaptation and vice versa. Rather than talk about differences, we need to focus on strengthening local communities.

We do tend to dismiss our differences in times of need, and that is our strength. But we also tend to have fatalistic faith in godsand in times of disaster, this faith is extended to institutions like the NDRF. However, there is often no time to rely on these far-off agencies. There is no alternative to increasing local capacity. During both Phailin and Hudhud, we greatly decreased the fatalities by good management. But that was a matter of

It is important that systems work even in the absence of committed and capable individuals

chance. Catastrophe during these two cyclones was averted because the officials were present and dedicated, and not because we had systems in place. But officers are individuals with varying calibres. It is important that systems work even in the absence (or despite) individuals. There is a pressing need for such systems and procedures to be instilled.

DRR in Uttar Pradesh: Mainstreaming in Development Programs –Entry Points for CCA integration

Ms. Aditi Umrao, Uttar Pradesh SDMA

Disasters set back development. Disasters impact various sectors like Agriculture, Health, Education, Infrastructure, Housing etc. This causes diversion of resources to rehabilitation and reconstruction and sometime cancellation of development programs. Development can also create disaster risks. DRR considerations not featuring into project design, increases the risks and the negative impact of disasters. Disasters and development needs to be dealt in unison – integration of DRR & CCA in policy, planning and development.

Mainstreaming is necessary because disasters tend to set back development, while some development measures can exacerbate disasters. Mainstreaming includes review of policy, inclusion in organisation policy and procedures, knowledge management, implementation, and including citizens.

All organizations need to do DRR & CCA mainstreaming for effective, and sustainable development. The state disaster management authorities work towards the capacity building of selected departments undertaking major infrastructure development programs/ projects.

Agriculture:

The sectoral entry points largely deal with diversifying risk in the context of unpredictable climate patterns. This can take the form of effective programs of contingency crop planning, crop diversification including the use of hazard resistant crops as well as promoting supplementary income generation from off-farm (e.g. animal husbandry) and non-farm activities (e.g. handicrafts). Mainstreaming also needs to promote effective insurance and credit schemes to

compensate for crop damage and losses to livelihoods due to natural hazards.

Infrastructure:

Disaster risk impact assessments need to be a part of the planning process before the construction of new roads or bridges. Similarly, use of hazard risk information in land-use planning and zoning programmes needs to be incorporated.

Housing:

Sectoral entry points need to deal with diversifying risk in the context of unpredictable climate patterns. Here too, disaster needs to be incorporated into the planning process. In the case of housing development, this means the increased use of hazard-resilient designs (e.g. flood proofing, or seismic safety) in rural housing programmes in hazard-prone areas and utilisation of national building codes that have special provisions for enhanced design standards for buildings in areas affected by natural disasters.

Health:

Planning for disaster risk reduction in the face of climate change takes two roles- ensuring aid to the affected, and reducing vulnerability of the health infrastructure, itself. It is as necessary to identify hospitals and health facilities that are located in hazard-prone areas, analyse their internal and external vulnerability during emergencies, and increase the hazard resilience of these hospitals as to prepare and implement a Hospital Preparedness Plan.

Financial Services:

These services need to allow for the interruptions that occur due to disasters. Financial services need to incorporate provisions in micro-financing schemes to have flexible repayments schedules that can be activated in the event of recipients being affected by natural disasters. Similarly, financial services sectors and local capital markets should be encouraged to develop schemes for financing disaster risk reduction measures.

Education:

Like health, mainstreaming climate change adaptation and disaster risk reduction in the education sector involves both increasing the resilience of the education infrastructure, as well as that of its clients (the students). The former can be done by flood proofing, creation of evacuation routes etc. For the latter, students can be trained in evacuation and first aid along with other means of disaster management that will not only serve them in school, but also as future citizens.

There are several components to the mainstreaming of climate change adaptation and disaster risk reduction, some of which are listed below:

- Mainstreaming DRR & CCA into State Planning Processes
- Priority Implementation Partnerships on Mainstreaming DRR & CCA into Sectoral Development
- Advocacy for Building Awareness and Political support for Mainstreaming of DRR & CCA into Development

• Knowledge Management platform for DRR & CCA Mainstreaming; Showcasing good practice and lessons learned

• Capacity Development for Mainstreaming of DRR & CCA

In Uttar Pradesh, a study has been conducted on "DRR mainstreaming entry points" by UPSDMA. As per its recommendations, a Government Order has been issued by the Chief Secretary. A disaster management cell has been established at Uttar Pradesh State Institute of Health & Family Welfare for DRR Mainstreaming in Health sector.

Process of evolution of Gorakhpur DDMA and preparation of DDMP Mr. Dinesh Chandra, ADM-FR, Gorakhpur, Gautam Gupta, DDMA Gorakhpur

Not all officials know the act under which the disaster management plans is done. However, each official needs to know about the policies, programmes and laws applicable to his/her district and full use needs to be made use of them. Also ,the peculiarities of each district that make it susceptible to disasters needs to be studied in detail.

District disaster management needs to be entrusted to the most capable official, in order to do justice to the post Officials should always keep in view that the subsistence farmer needs to be dealt with justly. Macro figures do not always tell the full story. A 50% loss in overall productivity may also mean that some farmers have lost their all. It is important for the official entrusted with the care of a district to investigate the details of what is happening to subsistence farmers.

District disaster management needs to be entrusted to the most capable official, in order to do justice to the post. Officials also need to learn how to present their information and data effectively. This is important to convince the government, especially while asking for resources.

Officials need to be always prepared for disasters, just their presence at the spot of a disaster can direct help to those afflicted.

Gorakhpur district has so far achieved the following:

- A climate sensitive DDMP developed
- Integration of CCA-DRR recognized as a high priority
- Promoted technical support to district level departments and DDMA on practical approach to vulnerability assessment and resilience building.
- Developed understanding on climate change projection and inculcated into developmental plan.
- Better understanding of vulnerability issues at the district level, both inter and intra departmental achieved through SLDs.
- The guideline of Gorakpur model replicated in 60 districts of Uttar Pradesh.

CCA- DRR integrated approach in Bundelkhand Region (Lalitpur and Datia) Ms. Sreeja S. Nair, Asst. Professor, NIDM, New Delhi

Bundelkhand region span across thirteen districts with seven in Uttar Pradesh and six in MP. It has a population of 18.3 million, and 79.1% of the total population live in rural areas (Census 2011). Livelihood of people in Bundelkhand region is dependent heavily on ecosystem services with 60% of the population working in the agricultural sector as cultivators and agricultural labourers. It is therefore, most severely affected by conditions and factors limiting natural resource availability.

Drought can be classified in three ways, meteorological (where there is an absence of rain), hydrological (where there is insufficient water) and agricultural (where crops fail due to lack of water). These are distinct from each other. Of these three, the only one over which we do not have control is meteorological drought. Even there, a failure of rainfall and drought declaration need not coincide, as there is a difference between hazard and vulnerability. Small water harvesting structures and livelihood diversification increase peoples' resilience.

18 out of last 30 years Bundelkhand suffered drought. (DA, 2011). The region experienced a major drought in every 16 years during the 18th and 19th centuries. This frequency has been increasing, and the region experienced 4 major droughts in the last decade (2002, 2004, 2007 & 2009). Hamirpur, Jalaun, Banda district of UP and Datia district of MP are in the list of chronically drought prone districts. (DPAP, National Drought Manual). Lalitpur (UP) experienced highest frequency and intensity of Meteorological Drought, Tikamgarh(MP) for hydrological drought, Datia

(MP), Jhansi(UP) and Hamirpur(UP) for Agricultural drought (NIDM, 2013).

The climatic modelling experiments by United Nations Institute for Training and Research (UNITAR) has predicted that temperatures are likely to be higher by about 2 to 3.5°C in Bundelkhand region by the end of this century (Kedia, S, 2010).

Vulnerability of Agriculture to Climate Change in Indo-Gangetic Plains depicts that all 5 districts viz Lalitpur, Mohoba, Hamirpur, Bandha and Chitrakoot are extremely vulnerable and two districts Jhansi and Jalaun are highly vulnerable (IARI, 2013).

Simulated number of Rainy days and projected changes through 2020,2050 and 2080 is depicting alarming conditions in many MP Bundelkhand. Number of Rainy days reduced from 52 days in 1999 to 35 days in 2012 (DA Policy Paper on Climate Resilient Development in MP Bundelkhand, 2013 & IITM Pune).

Thus the area is likely to face increases in meteorological, hydrological and agricultural drought. To address this, NIDM recently carried out an integrated spatial and temporal analysis of drought hazards, vulnerability, and effectiveness of mitigation measures in enhancing livelihood under changing climatic conditions. Detailed analysis of Vulnerability and effectiveness of mitigation through climate resilience lens is undergoing in Lalitpur and Datia.

The Bundelkhand Package was developed to implement drought mitigation strategies in the region in 2009 for a period of three years. Government of India approved the continuation of the Bundelkhand special Package during the 12th Plan period (2012-2017) under the Backward Regions Grant Fund (BRGF) with a financial outlay of Rs. 4400 crore. In Lalitpur, most investment was done in infrastructure. In Datai, more distributed approaches were taken up with both infrastructure and investment in health, education and energy.

As a result of these efforts, several important facts have been proved. Comprehensive drought hazard map based on frequency and intensity analysis shows differences in hazard and vulnerability between districts. The fact that Lalitpur faced a drought in 2009 despite adequate rainfall proves that meteorological drought and drought declaration are not coexistent.

Bundelkhand Package is a good example of integrated approach – different developmental programmes are integrated with drought mitigation. Multisectoral approach integrating water resources, watershed management, agriculture, Env& forestry, animal husbandry and dairy. Special focus has been given in reducing the underlying caused of vulnerability. This was done with convergence with other developmental schemes like MNREGA and IWMP etc. Due to this experiment, incidences of drought has come down drastically.

Experience sharing on CCA-DRR mainstreaming Shyamala Mani, NIUA:

This is the age of cooperation. Climate change is a global phenomenon; the only way we can achieve a decrease in climate induced disasters is by cooperation. Considering that many manifestations of climate change are anthropogenic, it is our responsibility to mitigate the impacts. There is no We do need development, but are not compelled to depend on fossil fuels for it. Leapfrogging on the West's post-fossil fuel dependence experience needs to be explored.

certainty as to how climate is going to behave. We can make some broad long term assessment, but concrete predictions are still far away. We need to study trends locally, perhaps crowd sourcing of data is a good option for the sort of detailed data management that we need.

Uttar Pradesh has a plan for climate change mitigation, but it may or may not have a direct impact. We need to find alternative mechanisms for climate change mitigation. Leapfrogging on the West's post-fossil fuel dependence experience needs to be explored. We do need

development, but are not compelled to depend on fossil fuels for it. Adaptation needs to include action and knowledge.

Working in silos is now a luxury that noone has the time for. We need to work together, on many fronts. Climate adaptation, resilience building, climate mitigation all need to be addressed simultaneously on several fronts. The first point is vulnerability assessment, after that everything needs to work together.

Cities that quickly come to terms with the fact that their economic losses cannot be curtailed without efficient systems are those that develop resilience. Almost every aspect of climate change vulnerability will be found in India. Here too, it is the poor and the marginalised that are hardest hit. Surat is an example of how the citizens worked together to minimise the impacts that were affecting their livelihood. Planning, improving infrastructure, protecting habitat, improve emergency response and protection of economic growth have to all happen simultaneously. This aspect, that of needing to work on all fronts at the same time, is likely to prove a challenge.

Framework for planning

What is happening? What matters most? What can we do about it? How do we monitor the change?

Vulnerability assessment is about people more than infrastructure. This is a deviation from traditional Disaster response. A lot of action is happening, for local movements to propel a stronger drive for policy change, ultimately we need to motivate local action. Today we are looking at planning as if it were a panacea. But plans are not solutions. Participatory plans is a difficult process, but it is the only way to go about it. Top down planning is not paying off. We need to look at governance patterns- are we allowing the stakeholder inside the room.

Sharing Practical Experiences of CCADRR Integration at the National Level Ms Shruti Sadhukhan, Sr. Manager, ICLEI

ICLEI works with municipal corporations on climate change adaptation. Cities occupy less than 3% of land area, are home to 50% of global population and consume 75% of global resources. Cities are not homogeneous entities; they have several players who contribute towards climate change and need to be involved. This also provides an opportunity to work on climate change. Cities are already overwhelmed with impacts of GHGs produced earlier; these impacts are now unavoidable. No matter what measures are taken, these cannot be done away with. Given that, future sustainability of development and functioning of infrastructure needs to be ensured. Measures on climate change are mitigation, adaptation and disaster risk resilience. Local governments are at forefront of climate management since they manage urban growth, provide infrastructure, facilitate economic growth, secure livelihoods and protect the environment. However, all stakeholders need to be involved.

The ICLEI ACCCRN process has a tested guide and toolkit to help cities develop local climate change resilience strategies. In Shimla, water supply, transport and tourism were the most vulnerable systems in the city. These were mapped. Resilience actions include decentralised water supply and sanitation, urban planning for transport.

Experience sharing by GIZ on CCADRR mainstreaming from Tamil Nadu and Andhra Pradesh Shri. Gopalakrishna Murthy, Academy of Gandhian Studies, Hyderabad Shri. K Krishna Kumar, AVVAI Village Welfare Society, Chennai S Saluja, GIZ

The goal of this effort was to reduce the vulnerabilities of coastal communities and cities in Tamil

It is crucial to include early movers and stakeholders already engaged in finding solutions for climate change adaptation. Nadu and Andhra Pradesh to climate change and strengthen capacities of local authorities and the population on climate change adaptation (CCA), climate change mitigation (CCM) and disaster risk reduction (DRR)

This was implemented in three cities and villages of both Tamil Nadu and Andhra Pradesh.

In cities, started with engagement right at the beginning. At rural level, engagement took place following the identification of vulnerable areas. The project undertook vulnerability assessments in cities and rural areas. These assessments formed the local adaptation and mitigation guides. Local adaptation and mitigation guides (LAMGs) developed for all 18 rural communities in AP/TN as living documents.

There were two entry points for mainstreaming climate change adaptation:

- Top down Planning: State Action Plans for Climate Change
- Bottom up Planning: District and PRI level for mainstreaming.

There is a need for an overall structure that already has climate change included in the structure. One non-negotiable principle in AP was participation. This has brought in results. One example is that of river islands in Krishna where O&M plans were created. Integration was done at panchayat level as well as the village level. The tools used were also shared with the bureaucracy. District officials that understand climate change are crucial to the planning process. Communities which had worked on planning and design were immediately able to work on planned rescue and evacuation during Hudhud and Phailin.

The efforts made during this project yielded many success stories where community members successfully planned and advocated interventions to better help them increase their resilience. These efforts were then replicated in other areas, leading to a ripple effect. Through all this, some key lessons were learnt:

- Build broader stakeholder engagement including private sector
- Create new structures to implement cca
- Strengthen capabilities of local planners
- Add early movers and stakeholders already engaged in finding solutions for climate change adaptation.

DRR & CCA Mainstreaming in Urban Areas of Gorakhpur

Mr. Arvind Rai, Deputy Commissioner, Gorakhpur and Dr. Shiraz Wajih, GEAG

Gorakhpur is prone to water-logging. The goal of this project was to develop a live model for climate resilient urban community. The idea was to work from the neighbourhood through ward and so to a city. The Urban resilience framework was used for this, which was developed in 10 cities that were part of the ACCCRN network. The definition of vulnerabilities were shaped by the perceptions of a representative cross-section of Gorakhpur. Neighbourhood committees were formed, as were thematic committees. Above these were the ward committee and finally the city committee. Along with the plan, monitoring indicators were developed with the people and service providers. The indicators are short, mid, and long term. Since the beginning, communities

have begun contributing themselves and accessing available funds. Today, there is no water logging in Mahewa, the ward in which the plan was implemented. The idea is to take this process into other wards. However, this needs state and policy support.

Use of Remote sensing & IMD in DRR & CCA Planning

Dr. Ajay Agrawal, Scientist, RSAC U.P.

Dr J P Gupta, Director-Indian Meteorological Department, Lucknow

Technology is available to deal with climate change. The Remote Sensing Application Centre has been monitoring flood-prone areas and submitting relevant maps to district magistrates, line departments, and others. Digitising cadastral maps has made it possible determine the exact farmers whose land has been affected. Thus relief can be speedily delivered where it is most needed. The RSAC can evaluate landslides, earthquakes, and other disasters.

A hi-resolution map of Lucknow infrastructure and disaster management has been prepared. This also includes maps of schools and health facilities. This enables quick response and rehabilitation.

IMD now has the latest technology with doppler radar, which enables accurate prediction. We have also installed an automatic weather station in every district. With the help of all this data, IMD is able to forecast with great precision. This was seen in the case of Hudhud where with proper forecasting lives were saved. If the present trend of temperature change continues, it will be devastating- increase in temperature of 2 decrees leads to a drop in wheat production by 17 percent. Small conservation measures such as decreasing consumption can contribute to combating climate change.

DRR & CCA mainstreaming in Urban Areas of Shimla

Shri. Tikender Panwar, Dy. Mayor, Shimla Municipal Corporation

There is a different paradigm in how we look at climate change adaptation and disaster risk reduction. This is in the case of urbanisation which is happening at a very fast rate. Cities are going to be the powerhouses of growth, and consumer of resources. This is a class phenomenon. David Harvey wrote, 'who does the city belong to?' This question is relevant today. What does a city mean? Is it only roads and bridges?

Cities mean 'how the people live'. Therefore, in DRR and CCA, the focus needs to be how to make a city sustainable. Not just in terms of climate change, but in terms of economic growth. How have cities developed? From the surplus generated by the toil of people. If cities have developed in that trajectory, where do we intervene? With this paradigm of development, what are we producing? Growth in cities is not egalitarian, cities produce slums. There is a relationship between growing economy and increasing vulnerabilities to disasters. How does the national government react ? Earlier we had collective responsibility with a differential phenomenon. Look at the evolution of global climate change fora. Now we are in a situation where we do not do anything.

This brings me to a precarious situation. I come from a city that is practically zero carbon. Shimla does not pollute, but is still vulnerable to climate change. There is no alternative but to adapt to it. Whatsoever global deliberations reveal, Gorakhpur has detailed how local bodies cans till act.

In Shimla we need to resort to tree felling . Else snow storm damage several trees and this disrupts electricity. In the case of such disruption, the complainants response is to call the councillor since they have voted for him/her. Despite this, all responsibilities and powers are in the hands of the state organisations such as the electricity board. Huge plans are made, but they

do not catch the imagination of the people. What is the solution? It does not lie with experts but with integrating people and municipal governments.